



**UNDERGRADUATE
CATALOG**

2018–2020

The University of Texas at San Antonio™

June 2018

Spring 2020 Addendum Due to COVID-19

April 14, 2020. Updated April 2022.

Spring break was extended by one week to March 21, 2020. All courses were taught online when classes resumed after spring break.

Course Drops

The Spring 2020 deadline to drop a course is April 13, 2020.

All courses dropped in the Spring 2020 semester will be considered “non-academic” and will not count toward the students’ six-drop limit.

Students will receive a grade of “W” for courses dropped in Spring 2020.

Instructor-Initiated Drops

The Instructor-Initiated Drop process will be suspended for Spring 2020.

Spring 2020 Adjustments to the CR/NC Option

UTSA will adopt an optional Credit/No Credit (CR/NC) "pass/fail" grading system for undergraduate and graduate courses for the Spring 2020 semester. The process is as follows:

- Each faculty instructor will determine if his or her course (not section) is suitable for a CR/NC grade (i.e., "pass/fail").
- Students will be notified the week of April 6–10 by your instructor whether their course has been designated as eligible for this grading option.
- Finally, for those designated courses, beginning April 20, 2020, each student will decide whether they want to receive a letter grade or CR/NC for the course; the tentative deadline to make this decision is May 8, 2020, by 5 p.m. CST, the last day of classes. If a student does not respond, the default will be the traditional grading scale.

Spring 2020 Policies

During the spring semester, student coursework and examinations, etc. will continue to be graded in the traditional format (A, B, C, etc.), the traditional final grade will be posted in Blackboard.

For Undergraduate students, Credit/no-credit courses appear on the permanent record as a grade of “CR” if the student’s grade is an “A+,” “A,” “A-,” “B+,” “B,” “B-,” “C+,” “C,” “C-,” “D+,” “D,” or “D-” or as a grade of “NC” if the student’s grade is “F.” For Graduate students, Credit/no-credit courses appear on the permanent record as a grade of “CR” if the student’s grade is an “A+,” “A,” “A-,” “B+,” “B,” “B-,” “C+,” “C” or as a grade of “NC” if the student’s grade is “C-,” “D+,” “D,” or “D-,” “F.”

Both “CR” and “NC” grades will not be computed into the students’ grade point average.

Students earning an “CR” grade will receive the course credit(s), and the CR grade will not be computed into grade point average.

Students earning a “NC” grade will not receive the course credit(s), but the NC grade will not be computed into grade point average.

A grade of “CR” in a course will be considered successful completion of the course, including counting the course towards the core curriculum and degree requirements, as well as satisfying prerequisites for sequel courses.

CR/NC does not impact academic standing. A student’s academic standing is suspended for the Spring 2020 term; therefore, it will not impact academic warning, probation or dismissal student’s status. Students who are graduating in Spring 2020 must still meet the UTSA overall GPA of 2.0 and degree requirements.

A “NC” grade will not be counted as an attempt for a Gateway course.

Transfer students who transfer to UTSA for their last 30 semester credit hours may count the UTSA Spring 2020 credit/no-credit courses toward their 30-hour minimum UTSA residency requirement.

In order to be eligible for Dean’s or President’s list, students must earn a letter grade for all Spring 2020 courses and cannot opt-in for CR/NC “pass/fail” for any course.

Credit in Honors College courses for Spring 2020 will count toward meeting Honors College requirements, though in some instances (contracts and non-HON prefixed courses) the honors designation may not appear on the transcript. The cumulative GPA for Good Standing depends on the student’s specific Honors College program.

A course taken for credit/no-credit may not replace a letter grade.

The credit/no-credit option is not available if the student has previously received a letter grade in a course.

Students who are unsatisfied with any of their final grades may file a grade appeal in accordance with the regular University policy.

How to opt-in for CR/NC “pass/fail” for a class

Students will see the course(s) with CR/NC “pass/fail” option in ASAP and will need to make their choice to opt-in by 5 p.m. CST, May 8, 2020, the last day of classes; otherwise, they will receive the traditional letter grade you earned.

Academic Standing and CR/NC

A student’s academic standing is suspended for the current Spring 2020; therefore, it will not impact academic warning, probation or dismissal status for students. Students who are graduating in Spring 2020 must still meet the UTSA overall GPA of 2.0 and meet major requirements.

Student repeating a course to replace the grade

Students should not opt-in for the CR/NC “pass/fail” option for a class which is being repeated because it will not replace a letter grade.

Gateway Course Policy

The Gateway Course policy will not be enforced for “NC” grades for Spring 2020.

Updates

The Gateway Course process of removing students from their major after two failed attempts at a Gateway Course was suspended through Summer 2022.

The Instructor-Initiated Drop process was suspended through Summer 2022.

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Undergraduate Catalog

2018–2020

The University of Texas at San Antonio

Published June 2018

The online version of The University of Texas at San Antonio Undergraduate Catalog is the official version. This catalog was last updated on June 18, 2019 (p. 4).

Disclaimer

The provisions of this document do not constitute a contract, expressed or implied, between any applicant, student, staff or faculty member and The University of Texas at San Antonio or The University of Texas System. This document is a general information publication only, 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, staff and faculty. 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 sanctions and/or penalties they may incur.

Students should refer to the *UTSA Student Policies* for additional policies, procedures, and information directly related to their enrollment at UTSA.

June 18, 2019: Admission updates for Fall 2019–Summer 2020 made to the College of Business, the College of Engineering, and the Departments of Architecture; Biology; Chemistry; Computer Science; Construction Science; Kinesiology, Health and Nutrition; and Psychology.

May 22, 2019: Added B.S. degree in General Mathematics Studies (p. 267).

April 3, 2019: Additional Course Fees table updated for Fall 2019 (p. 291).

March 29, 2019: Correction to LTED 3523 clinical teaching grade requirement (p. 68).

August 27, 2018. Correction: Credit **cannot** be earned for both GLA 2603 and POL 2603.

November 14, 2018. Added new course SPE 4681. (p. 463)

General Information

The University's Main Campus address is The University of Texas at San Antonio, One UTSA Circle, San Antonio, TX 78249. The address of the Downtown Campus is 501 César E. Chávez Boulevard, San Antonio, Texas 78207. The main telephone number is (210) 458-4011. Visit UTSA on the Web at www.utsa.edu.

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.

Statement of Equal Educational Opportunity

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, gender identity and gender expression are also prohibited pursuant to University policy.

Accreditation

The University of Texas at San Antonio (UTSA) is accredited by the Southern Association of Colleges and Schools Commission on Colleges (<http://www.sacscoc.org>) to award baccalaureate, master's, and doctoral degrees. Contact the Southern Association of Colleges and Schools 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 (UTSA).

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. *UTSA Student Policies* (<http://catalog.utsa.edu/policies>) 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. *Student Policies* 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. Employing developmental advising principles, UTSA academic advisors offer academic advising and guidance to empower students to realize their full potential. For this reason, each student is assigned to a particular professional academic advisor so the student can establish a strong mentoring relationship with her or his advisor, whom he or she may consult on all academic and curricular issues. Each advisor has a caseload of students which allows the advisor to be knowledgeable about their students' strengths, weaknesses, and preferences. Students should be comfortable and confident in the advice given them by their advisors, and know the advice they receive will be consistent and accurate. Students are encouraged to develop mentoring relationships with faculty for additional information and support.

Students are ultimately responsible for knowing and meeting degree requirements, for enrolling in appropriate courses to ensure orderly and timely completion of their degree programs, and for following the rules and policies of UTSA as found in the catalog, the current *UTSA Student Policies*, and the online schedule of classes. Each professional advisor sees students concerning all matters related to their academic status, such as progress toward degree completion, graduation status, academic warning, academic probation, academic dismissal, and changing majors. Students who are on academic warning or academic probation for the first time or who are reinstated after academic dismissal or with a Texas Success Initiative (TSI) deficiency are required to be advised, and holds are placed on their registration records to ensure that the student meets with the advisor. Students may also be required to meet with an advisor to obtain approval to register for restricted courses.

Frequent advisor contact provides students with current academic information and promotes progress toward educational goals. All students, regardless of classification or major, accepted into the Honors College (<http://honors.utsa.edu>) are advised through the Honors College. In some cases, a student may be advised by more than one advising component.

All academic advising is organized into the following components:

- Academic Major Advising: Architecture and Construction Planning (Downtown), Arts and Humanities, Business Studies, Engineering, Interdisciplinary Education, Life and Health Sciences, Mathematical and Physical Sciences, Public Service and Policy Studies (Downtown), Social Sciences
- Student Placement Advising (includes students without declared majors; CAP students)
- Pre-Professional Advising: Health Professions, Pre-Law
- Honors
- Athletics
- Teacher Certification

Bachelor's Degree Regulations

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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 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.
4. 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.
5. Meet the minimum UTSA residence requirements.

6. 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.
7. Be in good academic standing at UTSA.
8. 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.

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.

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 sending 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.

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 that 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 multidisciplinary 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 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

First Year Experience Requirement (3 semester credit hours)

All students must complete the following course, for a total of 3 semester credit hours:

AIS 1203	Academic Inquiry and Scholarship (core component area 090)	3
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Communication (010) (6 semester credit hours)

Courses in this category focus on developing ideas and expressing them clearly, considering the effect of the message, fostering understanding, and building the skills needed to communicate persuasively. This requirement involves the command of oral, aural, written, and visual literacy skills that enable people to exchange messages appropriate to the subject, occasion, and audience.

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

WRC 1013	Freshman Composition I (Q)	3
WRC 1023	Freshman Composition II (Q)	3

Mathematics (020) (3 semester credit hours)

Courses in this category focus on quantitative literacy in logic, patterns, and relationships. They involve the understanding of key mathematical concepts and the application of appropriate quantitative tools to everyday experience.

Students must complete one of the following courses, for a total of 3 semester credit hours:

MAT 1023	College Algebra with Applications	3
MAT 1043	Introduction to Mathematics	3
MAT 1053	Mathematics for Business	3
MAT 1073	Algebra for Scientists and Engineers	3

MAT 1093	Precalculus	3
MAT 1133	Calculus for Business	3
MAT 1193	Calculus for the Biosciences	3
MAT 1214	Calculus I	4
STA 1053	Basic Statistics	3

Life and Physical Sciences (030) (6 semester credit hours)

Courses in this category focus on describing, explaining, and predicting natural phenomena using the scientific method. This requirement involves the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.

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

ANT 2033	Introduction to Biological Anthropology	3
AST 1013	Introduction to Astronomy	3
AST 1033	Exploration of the Solar System	3
BIO 1233	Contemporary Biology I	3
BIO 1243	Contemporary Biology II	3
BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
CHE 1083	Introduction to the Molecular Structure of Matter	3
CHE 1093	Introduction to Molecular Transformations	3
ES 1113	Environmental Botany	3
ES 1123	Environmental Zoology	3
ES 1213	Environmental Geology	3
ES 2013	Introduction to Environmental Science I	3
ES 2023	Introduction to Environmental Science II	3
GEO 1013	The Third Planet	3
GEO 1123	Life Through Time	3
GES 2613	Physical Geography	3
PHY 1013	Universes	3
PHY 1943	Physics for Scientists and Engineers I	3
PHY 1963	Physics for Scientists and Engineers II	3

Language, Philosophy and Culture (040) (3 semester credit hours)

Courses in this category focus on how ideas, values, beliefs, and other aspects of culture express and affect human experience. This requirement involves the exploration of ideas that foster aesthetic and intellectual creation in order to understand the human condition across cultures.

Students must complete one of the following courses, for a total of 3 semester credit hours:

AAS 2013	Introduction to African American Studies	3
AAS 2113	African American Culture, Leadership and Social Issues	3
ANT 2063	Language, Thought, and Culture	3
ARA 1014	Elementary Arabic I	4
ARC 1113	Introduction to the Built Environment	3

CHN 1014	Elementary Chinese I	4
CLA 2013	Introduction to Ancient Greece	3
CLA 2023	Introduction to Ancient Rome	3
CLA 2323	Classical Mythology	3
CSH 1103	Literary Masterpieces of Western Culture I	3
CSH 1113	Literary Masterpieces of Western Culture II	3
CSH 1213	Topics in World Cultures	3
CSH 2113	The Foreign Film	3
ENG 2013	Introduction to Literature	3
ENG 2023	Literature and Film	3
ENG 2213	Literary Criticism and Analysis	3
ENG 2383	Multiethnic Literatures of the United States	3
ENG 2423	Literature of Texas and the Southwest	3
FRN 1014	Elementary French I	4
FRN 2333	French Literature in English Translation	3
GER 1014	Elementary German I	4
GER 2333	German Literature in English Translation	3
GES 1023	World Regional Geography	3
GLA 1013	U.S. in the Global Arena	3
GRK 1114	Introductory Classical Greek I	4
HIS 2123	Introduction to World Civilization to the Fifteenth Century	3
HIS 2133	Introduction to World Civilization since the Fifteenth Century	3
HIS 2533	Introduction to Latin American Civilization	3
HIS 2543	Introduction to Islamic Civilization	3
HIS 2553	Introduction to East Asian Civilization	3
HIS 2573	Introduction to African Civilization	3
HIS 2583	Introduction to South Asian Civilization	3
HUM 2093	World Religions	3
ITL 1014	Elementary Italian I	4
ITL 2333	Italian Literature in English Translation	3
JPN 1014	Elementary Japanese I	4
LAT 1114	Introductory Latin I	4
MAS 2013	Introduction to Chicano(a) Studies	3
PHI 1043	Critical Thinking	3
PHI 2013	Basic Philosophical Problems	3
PHI 2023	Introduction to Ancient Philosophy	3
PHI 2033	Introduction to Early Modern Philosophy	3
PHI 2123	Contemporary Moral Issues	3
RUS 1014	Elementary Russian I	4
RUS 2333	Russian Literature in English Translation	3
SPN 1014	Elementary Spanish I	4
SPN 2333	Hispanic Literature in English Translation	3
WS 2013	Introduction to Women's Studies	3
WS 2023	Introduction to LGBTQ Studies	3

Creative Arts (050) (3 semester credit hours)

Courses in this category focus on the appreciation and analysis of creative artifacts and works of the human imagination. These courses

involve the synthesis and interpretation of artistic expression and enable critical, creative, and innovative communication about works of art.

Students must complete one of the following courses, for a total of 3 semester credit hours:

AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350	3
AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750	3
AHC 1133	Survey of Modern Art	3
ARC 1513	Great Buildings and Cities of the World	3
ARC 2413	History of Architecture I	3
ART 1103	Introduction to Visual Arts	3
BBL 2023	Latino Cultural Expressions	3
CLA 2033	Introduction to Classical Literature	3
DAN 2003	Introduction to Dance	3
HUM 2023	Introduction to the Humanities I	3
HUM 2033	Introduction to the Humanities II	3
HUM 2053	History of Film	3
MAS 2023	Latino Cultural Expressions	3
MUS 2243	World Music in Society	3
MUS 2633	American Roots Music	3
MUS 2653	Music in Culture	3
MUS 2663	History and Styles of Jazz	3
MUS 2673	History and Styles of Rock	3
MUS 2683	History and Styles of Western Art Music	3
MUS 2693	The Music of Latin America and the Caribbean	3
MUS 2713	History of Recorded Music	3
MUS 2743	Music and Film	3
PHI 2073	Philosophy of Art	3

American History (060) (6 semester credit hours)

Courses in this category focus on the consideration of past events and ideas relative to the United States, with the option of including Texas History for a portion of this component area. These courses involve the interaction among individuals, communities, states, the nation, and the world, considering how these interactions have contributed to the development of the United States and its global role.

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

HIS 1043	United States History: Pre-Columbus to Civil War Era	3
HIS 1053	United States History: Civil War Era to Present	3
HIS 2053	Texas History	3

Government-Political Science (070) (6 semester credit hours)

Courses in this category focus on consideration of the Constitution of the United States and the constitutions of the states, with special emphasis on that of Texas. This requirement involves the analysis of governmental

institutions, political behavior, civic engagement, and their political and philosophical foundations.

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

POL 1013	Introduction to American Politics	3
and one of the following two courses:		
POL 1133	Texas Politics and Society	3
POL 1213	Civil Rights in Texas and America	3

Social and Behavioral Sciences (080) (3 semester credit hours)

Courses in this category focus on the application of empirical and scientific methods that contribute to the understanding of what makes us human. These courses involve the exploration of behavior and interactions among individuals, groups, institutions, and events, examining their impact on the individual, society, and culture.

Students must complete one of the following courses, for a total of 3 semester credit hours:

AMS 2043	Approaches to American Culture	3
ANT 1013	Introduction to Anthropology	3
ANT 2043	Introduction to Archaeology	3
ANT 2053	Introduction to Cultural Anthropology	3
BBL 2003	Language, Culture, and Society	3
BBL 2243	Globalizing the Local: Bilingual Families, Communities, and Schools	3
BIO 1033	Drugs and Society	3
CRJ 1113	The American Criminal Justice System	3
ECO 2003	Economic Principles and Issues	3
ECO 2023	Introductory Microeconomics	3
EGR 1343	The Impact of Modern Technologies on Society	3
GES 1013	Fundamentals of Geography	3
GES 2623	Human Geography	3
HTH 2413	Introduction to Community and Public Health	3
HTH 2513	Personal Health	3
IDS 2113	Society and Social Issues	3
PSY 1013	Introduction to Psychology	3
SOC 1013	Introduction to Sociology	3
SOC 2013	Social Problems	3
SOC 2023	Social Context of Drug Use	3

Component Area Option (CAO) (3 semester credit hours)

The courses listed below meet the requirements specified in one of the foundational component areas above.

Students must complete either one of the following courses or any additional Core Curriculum course not previously used to satisfy a core component area requirement, for a total of 3 semester credit hours:

COM 2113	Public Speaking (core component area 091)	3
CS 1173	Data Analysis and Visualization (core component area 092)	3

Gateway Courses

EGR 1403	Technical Communication (core component area 091)	3
ENG 2413	Technical Writing (core component area 091)	3
PAD 1113	Public Administration in American Society (core component area 097)	3
PHI 2043	Introductory Logic (core component area 092)	3

Gateway Courses

Many UTSA majors have designated certain courses as Gateway Courses. Gateway Courses are generally courses that are necessary for students to progress through their chosen major and are usually those courses which contain material in which a student needs a clear-cut comprehension in order to be successful in completing other course requirements for the major. That is, Gateway Courses often determine whether a student is a suitable candidate to pursue the indicated major.

In order to promote student success and to help ensure that students are choosing majors that are appropriate for their aptitudes and skills, a UTSA student may attempt a Gateway Course for his or her major at most twice. If the student does not successfully complete a Gateway Course in two attempts, then the student is required to change his or her major to a different major. Successfully completing a Gateway Course means achieving a grade in the course required by the major. For instance, if the major requires that all of the courses required for the major must be completed with a grade of "C-" or above, then successful completion of a Gateway Course for that major means receiving a grade of "C-" or higher in the course. However, receiving a grade of "CR" through the "Challenging a UTSA Course" process or the "UTSA Competency Examination" process will be regarded as successfully completing a Gateway Course. For the purpose of this policy, either dropping a course with a grade of "W" or taking an equivalent course at another institution of higher education counts as an attempt at taking the course.

The Gateway courses for each major are listed in this catalog under the program requirements.

Catalog of Graduation

Undergraduate students have six years from their semester 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 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 four-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 with a four-year time limit to complete the second degree under that catalog. A student must have an approved catalog at the time an application for graduation is filed. All continuing students requesting a catalog change must do so through their assigned advisor.

Students admitted to certain colleges or degree programs may be required to update to the catalog in effect at the time of admission.

Students can confirm whether admission to a certain program will require a change of catalog by consulting their assigned advisor.

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 that degree is in a different major (regardless of the concentration) than the first degree. 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 with their academic advisor. Students may not formally minor in more than two fields. Descriptions of minor requirements are included in the Colleges sections of this catalog.

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 Policies and Resources (<http://www.theccb.state.tx.us/index.cfm?objectid=C87E5D30-1C0C-11E8-BC500050560100A9>)" and "Texas Common Course Numbering System (<http://www.tccns.org>).")

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.

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 a 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 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 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 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 (<http://catalog.utsa.edu/policies/generalacademicregulations/grades/#Ugchallengingacourse>) in "General Academic Regulations" of *UTSA Student Policies*).

Credit for ROTC or military science, when awarded by another college or university, is accepted by UTSA as free elective credit within the limitations of the student's degree program. 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 One Stop Enrollment website (<https://onestop.utsa.edu/wp-content/uploads/2018/07/militaryservicecreditnotice.pdf>) and in the UTSA Veterans Certification Office (JPL 1.01.14).

Courses from an Institution Undergoing Accreditation or a Nonaccredited Institution

Credits earned from colleges or universities that are not regionally accredited and/or nonaccredited may be appealed for transfer to UTSA on an individual basis at the discretion of the major academic department. 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.

Not Accepted ¹

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.

- ¹ Exception - Vocational-Technical Credits earned as part of an Associate of Applied Science degree 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 a graduate course and apply the credits earned to an undergraduate degree after obtaining approval from the student's academic advisor, the instructor of the course, and the chair of the department offering the course if lacking no more than 30 semester credit hours for graduation. Approval forms are available on the One Stop Enrollment website (<https://onestop.utsa.edu/wp-content/uploads/2018/07/permissionenrollgradcoursewhileundergrad.pdf>). All approvals must be obtained and the form filled 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 is taken; otherwise, the course 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 academic advisor, the instructor of the course, and the chair of the department offering the course. Approval forms are available on the One Stop Enrollment website (<https://onestop.utsa.edu/wp-content/uploads/2018/07/permissionenrollgradcoursewhileundergrad.pdf>). 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 academic advisor, the instructor of the course, and the chair of the department offering the course. Approval forms are available on the One Stop Enrollment website (<https://onestop.utsa.edu/wp-content/uploads/2018/07/permissionenrollgradcoursewhileundergrad.pdf>). 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 on the One Stop Enrollment website (<https://onestop.utsa.edu/graduation>).

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 (<https://asap.utsa.edu>). Students must have earned at least 85 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:

- July 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 One Stop Enrollment website (<https://onestop.utsa.edu/wp-content/uploads/2018/07/appforgraduationwithmultidegrees.pdf>), then submit the completed application to the One-Stop Enrollment Center.

The student's assigned academic advisor 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 his or her assigned academic advisor 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.

If requested by a student, a Letter of Degree Completion is prepared by the student's assigned academic advisor after the close of the End of Term date of the semester 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 student's assigned academic advisor does a preliminary verification. The student is responsible for completing all coursework and submitting any or all of the following to his or her academic advisor **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 assigned academic advisor 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 One-Stop Enrollment Center prior to the last day of the semester of graduation. The application form is located on the One Stop Enrollment website (<https://onestop.utsa.edu/wp-content/uploads/2018/07/appforundergradcert.pdf>). 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 Student Policies* 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 in this catalog. 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 website. Students will find a wealth of information on law school admissions and preparation at the Law School Admission Council's website (<http://lsac.org>) and the UTSA Institute for Law and Public Affairs website (<http://www.utsa.edu/ilpa>). The Institute offers 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.

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 (<http://business.utsa.edu/graduate>).

Preparation for Health Professions Programs

While UTSA does not provide any specific health professions programs, the University Health Professions Office (UHPO) provides academic guidance and support to students interested in pursuing careers in the health professions. Services include individualized appointments and personal guidance to help students through the process of preparing for professional school.

UTSA offers courses that fulfill entrance requirements to most health professions fields, including Medicine, Dentistry, Nursing, Dental Hygiene, Respiratory Care, Occupational Therapy, Physical Therapy, Physician Assistant, Pharmacy, Veterinary Medicine, and Optometry. Admission to professional schools are highly competitive and involve separate application processes. Admission to UTSA does not guarantee admission into health professions programs at UT Health 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 3.03.14). For more information about the UHPO, including appointment and on-call options, call 210-458-5185, or visit the website at <http://utsa.edu/healthprofessions/>.

Medical and Dental Schools

In general, medical and dental school admissions committees do not state a preference about a student's choice of undergraduate major, allowing students to choose a degree program suited to their 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 can be admitted to dental school without a degree.

Admission requirements for Texas medical and dental schools are representative of admission requirements for most American medical and dental 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 statistics.

Applicants to medical school must take the Medical College Admission Test (MCAT), while dental applicants must take the Dental Admissions Test (DAT). The application cycle for both medical and dental schools in Texas begins in May for admission in August of the following year. While many students take their MCAT or DAT during or immediately after their junior year, the UHPO encourages students to take their exams after completion of their program prerequisites and approximately six months of preparation. Additionally, students are encouraged to meet with a Health Professions Advisor regularly to determine the best time for their individual application and testing.

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/ (<http://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 of most nursing schools in Texas and across the United States. A minimum of 60 semester credit hours is required, including 6 semester credit hours of college English, 9 hours of behavioral sciences, 6 hours of each 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, including chemistry, anatomy, physiology, microbiology, and nutrition. Students interested in nursing should seek information about these prerequisites on a regular basis, as they are subject to change. Additional information and advisement may be obtained at the UHPO.

Special Programs

Facilitated Acceptance to Nursing School (FANS)

This 2+2 program offers outstanding UTSA students with an interest in nursing the opportunity to be granted guaranteed acceptance into the Bachelor of Science in Nursing (BSN) Program at the UT Health San Antonio, pending grade point average and test scores. Upon successful completion of the BSN program at UTHSCSA, students are eligible to take the Registered Nurse licensing examination. Admission to FANS is selective and limited. Students must meet with a health professions advisor throughout their time at UTSA to review coursework and eligibility. Information about program requirements is available at the UHPO.

3-4 Dental Early Admission Program (DEAP)

DEAP is a joint program between The University of Texas at San Antonio and UT Health 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 UT Health San Antonio within seven years. Students apply during the second semester of their freshman year at UTSA and must have completed at least 12 hours at UTSA during their first freshman semester. Students with more than 30 total hours, including advanced placement and dual credit coursework, will be considered on a case-by-case basis. 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 during 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 and 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 website at www.utsystem.edu/JAMP/ (<http://www.utsystem.edu/JAMP/>) for additional details.

Preparation for Doctoral Programs

The Doctorate in Philosophy (Ph.D., PhD, or D.Phil.) degree is a postgraduate “doctoral” degree awarded primarily by universities and medical schools, in fields other than medicine, law and theology.

Doctoral students take advanced coursework, engage in original scholarly research, and complete a final dissertation that demonstrates their intellectual contribution to their field. Someone who completes all requirements for the Ph.D. gains the right to be called “Doctor.”

Undergraduates interested in a Ph.D. should investigate the entry and application requirements for doctoral programs of interest and plan ahead. Some fields require a Master’s degree but others do not. Some Ph.D. programs may desire undergraduate courses that are not required for your UTSA degree but can be integrated into your degree plan. Undergraduate research experience is highly desirable and may be required by prestigious Ph.D. programs. Most programs require a standardized test such as the general GRE® (Graduate Record Exam), which should be taken so that results are available before application deadlines, which are frequently in late fall or early spring.

Students interested in doctoral training should consult with their discipline-specific academic advisor and UTSA research faculty in their field for further guidance. For additional general information about preparing for doctoral training or becoming involved in research as an undergraduate, please consult the websites of the UTSA Graduate

Preparation for Doctoral Programs

School (<http://graduateschool.utsa.edu>) or Office of Undergraduate Research (<http://research.utsa.edu/academic-research/undergraduate>).

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 (p. 117)” page.

Currently, the following undergraduate certificate programs are offered:

- Certificate in Athletic Coaching (p. 115) offered by the Department of Kinesiology, Health, and Nutrition, College of Education and Human Development.
- Certificate in Business Analytics (p. 61) offered by the Department of Management Science and Statistics, College of Business.
- Certificate in Data Center Design (p. 125) offered by the College of Engineering.
- Certificate in Oil/Gas (p. 144) offered by the Department of Mechanical Engineering, College of Engineering.
- Certificate in Operations and Supply Chain Management (p. 61) offered by the Department of Management Science and Statistics, College of Business.
- Certificate in Pathogenic Outbreak Investigations (p. 48) offered by the Department of Information Systems and Cyber Security, College of Business, in collaboration with the Departments of Biology and Computer Science, College of Sciences.
- Certificate in Professional Writing and Rhetoric (p. 168) offered by the Department of English, 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. Unless the certificate program specifically requires or permits a course to be taken at another institution, 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 One Stop Enrollment Center prior to the last day of the semester of graduation. The application form is located at <https://onestop.utsa.edu/wp-content/uploads/2018/07/appforundergradcert.pdf>. Students with questions about the application should contact Graduation Coordination at graduationcoordination@utsa.edu.

College of Architecture, Construction and Planning

The College of Architecture, Construction and Planning offers three undergraduate degrees focused on various aspects of the built environment. The Department of Architecture houses the Bachelor of Science degree in Architecture and the Bachelor of Science degree in Interior Design. The Department of Construction Science houses the Bachelor of Science degree in Construction Science and Management. The College also includes undergraduate courses in Urban and Regional Planning. The College faculty are a very diverse group of scholars and practitioners. Among them are well-recognized educators, scholars, and designers who have achieved national and international recognition for their research, publications, and professional practices.

The CACP International Studies / Signature Experience Requirement

All undergraduate students in the College of Architecture, Construction and Planning (CACP) are required to participate in an approved International Studies / Signature Experience opportunity as a condition of graduation. The CACP International Studies / Signature Experience requirement is intended to expose students to educational opportunities that go beyond the traditional academic experience. Participation in International Studies is the specified means to satisfy the requirement for architecture and interior design students within the College. Please see curricula listings for B.S. in Architecture and B.S. in Interior Design in the catalog for respective required courses and studios taught only in international locations. Construction Science and Management majors satisfy the requirement by completing a required internship for their degree program. There is typically a Sophomore Convocation during the first semester of the sophomore year during which logistics are discussed, program costs and payment processes and financial aid are presented, and planning started for this international studies requirement. Students are advised to consult the College website (<http://cacp.utsa.edu>) or the Associate Dean for Academic Affairs and Undergraduate Studies for up-to-date International Studies and Signature Experience opportunities, applications, semester assignment, approval processes and forms.

Department of Architecture

The Department of Architecture offers the Bachelor of Science degree in Architecture and the Bachelor of Science degree in Interior Design. Both degree programs include a common Foundation Year of studies and students remain as pre-majors or Architecture, Construction and Planning Studies majors until the completion of the Foundation Year required coursework and successful passage through the Foundation Year Gateway.

Admission Criteria for Transfer Students Admitted Under this Catalog Prior to Fall 2019

Students who wish to transfer from another institution into either of the two undergraduate degree programs (Architecture or Interior Design)

in the Department of Architecture are required to submit an application package that includes their cumulative grade point average, and a letter of interest. Students with architectural or interior design coursework beyond the freshman level are required to submit a portfolio of studio work (bound, maximum size 8.5 inches by 11 inches) that will be used for studio placement. Students wishing to apply for transfer course substitutions will be required to submit course syllabi for those courses for Departmental review. Application packages and portfolios should be sent directly to the Department of Architecture. Transfer applicants placed into the first year will be required to complete the Foundation Year Program and apply for either the Architecture or Interior Design major as described below.

Admission Policy for Students Admitted Under this Catalog Beginning Fall 2019

Applicants entering UTSA as Freshmen will be directly admitted to the Department of Architecture until April 15th if they:

- meet all UTSA undergraduate admission requirements, and
- are ranked in the top 10 percent of their high school class and a minimum 1350 SAT* or 29 ACT score.

Freshmen ranked in the top 15 percent of their high school class with a minimum 1170 SAT* or 24 ACT score may go through a Department Comprehensive Review to determine direct admission.

* *New SAT scores combine Evidence-Based Reading and Writing and Math.*

Students who wish to transfer from another institution into either of the two undergraduate degree programs (Architecture or Interior Design) in the Department of Architecture are required to submit an application package that includes their cumulative grade point average, and a letter of interest.

Transfer students will be directly admitted to the Department of Architecture if they:

- meet all UTSA undergraduate admission requirements,
- have a minimum transfer grade point average (GPA) of 3.0, and
- go through a portfolio review.

Students with architecture or interior design coursework are required to submit a portfolio of studio work (bound, maximum size 8.5 inches by 11 inches) that will be used for studio placement. Students wishing to apply for transfer course substitutions will be required to submit course syllabi for those courses for Departmental review. Application packages and portfolios should be sent directly to the Department of Architecture. Transfer applicants placed into the first year will be required to complete the Foundation Year Program and apply for either the Architecture or Interior Design major as described below.

Freshmen and Transfer students who do not meet the above requirements, but meet UTSA's general admission requirements will be part of "Architecture, Construction and Planning Studies" where students will be able to work towards meeting the prerequisites needed to declare Architecture or Interior Design as their major.

Change of Major

Students currently enrolled in UTSA who wish to change majors to one of the two undergraduate academic majors within the Department of Architecture must submit a Change of Major application to the

Department of Architecture by the first Monday in May. Departmental application decisions are made at least once per year in June, but the Department reserves the right to render decisions at any time. Change of major students must include their grade point average and a letter of interest in their application package. Students with architectural or interior design coursework beyond the freshman level are required to submit a portfolio of studio work (bound, maximum size 8.5 inches by 11 inches) that will be used for studio placement. Students wishing to apply for course substitutions will be required to submit course syllabi for those courses for Departmental review. Portfolios should be sent directly to the Department of Architecture. Change of Major applicants placed into the first year will be required to complete the Foundation Year Program and apply for either the Architecture or Interior Design major as described below.

Foundation Year Program (FYP) / Admission to the Major in Architecture or Interior Design

Students must successfully complete the common Foundation Year Program (FYP), consisting of 16 semester credit hours, in order to be eligible to apply for the FYP Gateway review process and subsequent admission into either the Bachelor of Science in Architecture major (ARC) or Bachelor of Science in Interior Design major (IDE). Students are strongly advised to complete the additional 15 credit hours of Core Curriculum courses in their first year of studies as well.

Students who have completed the FYP must submit a Gateway Application (an application to the major) by the first Monday in May for review and consideration for admission to the major of choice (ARC or IDE). Applications are available on the Department website. FYP Gateway reviews are conducted at the conclusion of each Spring semester. Available openings within both the ARC and IDE majors are limited and, therefore, entry into each is competitive. Students not accepted into either of the two majors within the Department of Architecture in their first year of application will remain in the University College and will be eligible to reapply the following year. A student may reapply only once.

The Foundation Year Program *requires* the completion of the following courses (16 semester credit hours):

ARC 1113	Introduction to the Built Environment	3
ARC 1213	Design I	3
ARC 1224	Design II	4
ARC 1313	Design Visualization	3
ARC 1513	Great Buildings and Cities of the World	3
Total Credit Hours		16

The Foundation Year Program strongly *recommends* the completion of the following Core Curriculum courses (15 semester credit hours):

AIS 1203	Academic Inquiry and Scholarship	3
WRC 1013	Freshman Composition I (Q)	3
WRC 1023	Freshman Composition II (Q)	3
Mathematics Core Course (MAT 1023 or MAT 1133)		3
Life and Physical Sciences Core Course (ES 2013, GEO 1013, or PHY 1943)		3
Total Credit Hours		15

Laptop Program

The laptop program requires that students entering both the Bachelor of Science in Architecture and the Bachelor of Science in Interior Design programs have their own laptop (notebook) computers 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.

Student Work

The Department 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, Construction and Planning and remains such until it is returned to the student.

- B.S. Degree in Architecture (p. 19)
- B.S. Degree in Interior Design (p. 21)

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 Department 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 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 professional degree programs in architecture offered by institutions with U.S. regional accreditation, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted an eight-year, three-year, or two-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may require a preprofessional undergraduate degree in architecture for admission. However, the preprofessional degree is not, by itself, recognized as an accredited degree.

The University of Texas at San Antonio, Department of Architecture offers the following NAAB-accredited degree programs:

M.Arch. 2 (preprofessional degree + 52 graduate credits)

M.Arch. 3 (non-preprofessional degree + 92 credits)

Next accreditation visit for all programs: 2024

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. 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.

MAT 1023¹, MAT 1073, MAT 1093, or MAT 1133 may be used to satisfy the core requirement in Mathematics.

Two of the following courses should be used to satisfy the core requirement in Life and Physical Sciences: ES 2013, GEO 1013, GES 2613² or PHY 1943.

In addition to AIS 1203, ARC 1113 should be used to satisfy the core requirement in Language, Philosophy and Culture. ARC 2413 should be used to satisfy the core requirement in Creative Arts. ARC 1513 should be used to satisfy the Component Area Option requirement.

ANT 1013, ECO 2003, EGR 1343, GES 1013, GES 2623, or SOC 1013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

¹ Students who may anticipate either a dual major with Construction Science and Management (CSM) or change of major to the CSM program should note that MAT 1023 will not count toward the CSM degree.

² Students who may anticipate either a dual major with CSM or change of major to the CSM program should note that GES 2613 will not count toward the CSM degree and PHY 1943 will be required.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.S. degree in Architecture must successfully complete each of the following Gateway Courses with a grade of “C-”

or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

ARC 2133	Principles of Architectural Structures
ARC 2156	Drawing and Modeling Studio
ARC 2166	Digital Design Studio
ARC 2233	Principles of Environmental Systems

Degree Requirements

A. Foundation Year Program

1. 16 semester credit hours of required courses completed with a grade of “C-” or better in each course:

ARC 1113	Introduction to the Built Environment	3
ARC 1213	Design I	3
ARC 1224	Design II	4
ARC 1313	Design Visualization	3
ARC 1513	Great Buildings and Cities of the World	3

B. Architecture Program sequence

1. 42 semester credit hours of required architectural courses. Must be completed with a grade of “C-” or better in each course:

ARC 2133	Principles of Architectural Structures	3
ARC 2156	Drawing and Modeling Studio	6
ARC 2166	Digital Design Studio	6
ARC 2233	Principles of Environmental Systems	3
ARC 2413	History of Architecture I	3
ARC 2423	History of Architecture II	3
ARC 3433	Topics in Architecture and Thought	3
ARC 3613	History of Modern Architecture	3
ARC 4183	Environmental Systems	3
ARC 4283	Architectural Structures	3
CSM 2113	Construction Materials and Methods	3

3 semester credit hours of an upper-division elective 3

2. 12 semester credit hours of required upper-division design studios. 12 Must be completed with a grade of “C-” or better in each course.

ARC 4156 Building Design Studio (repeated) 6

3. 6 semester credit hours of Study Abroad Studio: 6

ARC 4816 International Studies Studio 6

4. 6 semester credit hours of Systems Studio: 6

ARC 4246 Systems Studio 6

5. 6 semester credit hours of international studies coursework 6

ARC 4833 International Studies Drawing Seminar 6

ARC 4843 International Studies History Seminar 6

Total Credit Hours 88

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

First Year

Fall	Credit Hours
Foundation Year (Pre-Architecture/PRA)	
AIS 1203 Academic Inquiry and Scholarship (core)	3

ARC 1113	Introduction to the Built Environment (core and major)	3
ARC 1213	Design I	3
ARC 1313	Design Visualization	3
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15

Spring

ARC 1224	Design II	4
ARC 1513	Great Buildings and Cities of the World (core and major)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Mathematics core		3
Life & Physical Sciences core		3
GATEWAY TO MAJOR (Requires Application and Acceptance)		
Credit Hours		16

Second Year**Fall**

ARC 2133	Principles of Architectural Structures	3
ARC 2156 or ARC 2166	Drawing and Modeling Studio or Digital Design Studio	6
ARC 2413	History of Architecture I (core and major)	3
CSM 2113	Construction Materials and Methods	3
Credit Hours		15

Spring

ARC 2166 or ARC 2156	Digital Design Studio or Drawing and Modeling Studio	6
ARC 2233	Principles of Environmental Systems	3
ARC 2423	History of Architecture II	3
Social & Behavioral Sciences core		3
Credit Hours		15

Third Year**Fall**

International Studies Semester (Fall or Spring)		
ARC 4816	International Studies Studio	6
ARC 4833	International Studies Drawing Seminar	3
ARC 4843 or ARC 4823	International Studies History Seminar or International Studies Theory Seminar	3
Credit Hours		12

Spring

ARC 3613	History of Modern Architecture	3
ARC 4156	Building Design Studio	6
American History core		3
Government-Political Science core		3
Credit Hours		15

Fourth Year**Fall**

ARC 3433	Topics in Architecture and Thought	3
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ARC 4156	Building Design Studio	6
ARC 4183	Environmental Systems	3
Government-Political Science core		3
Upper-division Elective		3
Credit Hours		18

Spring

ARC 4246	Systems Studio	6
ARC 4283	Architectural Structures	3
American History core		3
Life & Physical Sciences core		3
Credit Hours		15
Total Credit Hours		121

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, Construction and Planning for their catalog year.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. 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.

MAT 1023¹, MAT 1073, MAT 1093, or MAT 1133 may be used to satisfy the core requirement in Mathematics.

Two of the following courses should be used to satisfy the core requirement in Life and Physical Sciences: ES 2013, GEO 1013, GES 2613² or PHY 1943.

In addition to AIS 1203, ARC 1113 should be used to satisfy the core requirement in Language, Philosophy and Culture. ARC 2413 should be used to satisfy the core requirement in Creative Arts. ARC 1513 should be used to satisfy the Component Area Option requirement.

ANT 1013, ECO 2003, EGR 1343, GES 1013, GES 2623, or SOC 1013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

¹ Students who may anticipate either a dual major with Construction Science and Management (CSM) or change of major to the CSM program should note that MAT 1023 will not count toward the CSM degree.

² Students who may anticipate either a dual major with CSM or change of major to the CSM program should note that GES 2613 will not count toward the CSM degree and PHY 1943 will be required.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.S. degree in Interior Design must successfully complete each of the following Gateway Courses with a grade of “C-” or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

ARC 2156	Drawing and Modeling Studio
ARC 2166	Digital Design Studio
IDE 2143	Architecture and Interior Assemblies
IDE 2153	Interior Materials and Assemblies

Degree Requirements

A. Foundation Year Program

16 semester credit hours of required courses completed with a grade of “C-” or better in each course:

ARC 1113	Introduction to the Built Environment (core and major)	3
ARC 1213	Design I	3
ARC 1224	Design II	4
ARC 1313	Design Visualization	3
ARC 1513	Great Buildings and Cities of the World (core and major)	3

B. Interior Design Program sequence

75 semester credit hours of required courses completed with a grade of “C-” or better in each course:

ARC 2156	Drawing and Modeling Studio	6
ARC 2166	Digital Design Studio	6
ARC 2233	Principles of Environmental Systems	3
ARC 2413	History of Architecture I (core and major)	3
ARC 4183	Environmental Systems	3
IDE 2143	Architecture and Interior Assemblies	3
IDE 2153	Interior Materials and Assemblies	3
IDE 2263	Color Theory and Behavior	3
IDE 2413	History of Interior Architecture I	3
IDE 2423	History of Interior Architecture II	3

IDE 3123	Space Planning and Interior Details	3
IDE 3236	Interior Design Studio I	6
IDE 3246	Interior Design Studio II	6
IDE 4233	Computer Projects in Design	3
IDE 4266	Systems Integration Studio	6
IDE 4513	Practice and Ethics	3
IDE 4816	International Studies Studio	6
or IDE 4956	Special Studies in Interior Architecture	
IDE 4823	International Studies Theory Seminar	3
IDE 4833	International Studies Drawing Seminar (or upper-division elective)	3
Total Credit Hours		91

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

First Year

		Credit Hours
Foundation Year (Pre-Interior Design/PRI)		
AIS 1203	Academic Inquiry and Scholarship (core)	3
ARC 1113	Introduction to the Built Environment (core and major)	3
ARC 1213	Design I	3
ARC 1313	Design Visualization	3
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15

Spring

ARC 1224	Design II	4
ARC 1513	Great Buildings and Cities of the World (core and major)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Mathematics core		3
Life & Physical Sciences core		3
GATEWAY TO MAJOR (Requires Application and Acceptance)		
Credit Hours		16

Second Year

		Credit Hours
Fall		
ARC 2156 or ARC 2166	Drawing and Modeling Studio or Digital Design Studio	6
ARC 2233	Principles of Environmental Systems	3
ARC 2413	History of Architecture I (core and major)	3
IDE 2143	Architecture and Interior Assemblies	3
Social & Behavioral Sciences core		3
Credit Hours		18

Spring

ARC 2166 or ARC 2156	Digital Design Studio or Drawing and Modeling Studio	6
IDE 2153	Interior Materials and Assemblies	3
IDE 2263	Color Theory and Behavior	3

IDE 2413	History of Interior Architecture I	3
	Credit Hours	15
Third Year		
Fall		
IDE 2423	History of Interior Architecture II	3
IDE 3123	Space Planning and Interior Details	3
IDE 3236	Interior Design Studio I	6
American History core		3
Government-Political Science core		3
	Credit Hours	18
Spring		
ARC 4183	Environmental Systems	3
IDE 3246	Interior Design Studio II	6
IDE 4233	Computer Projects in Design	3
American History core		3
	Credit Hours	15
Fourth Year		
Fall		
IDE 4816	International Studies Studio	6
IDE 4823	International Studies Theory Seminar	3
IDE 4833	International Studies Drawing Seminar	3
	Credit Hours	12
Spring		
IDE 4266	Systems Integration Studio	6
IDE 4513	Practice and Ethics	3
Government-Political Science core		3
Life & Physical Sciences core		3
	Credit Hours	15
	Total Credit Hours	124

Department of Construction Science

The Department of Construction Science offers a Bachelor of Science degree in Construction Science and Management.

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.

Students Admitted Under this Catalog Prior to Fall 2019

Successful applicants entering the University from high school and transfer students will be directly admitted, as a pre-major, into the University College. At the completion of 30 credit hours of coursework, students may apply to the Construction Science and Management major. Applications will be reviewed at the end of each academic semester and students will be accepted to the major based on their grade point average (GPA) and number of available seats. Students who wish to transfer

from another institution, or are currently enrolled in UTSA but wish to change their major, may apply to the major directly if they have more than 30 credit hours. The transfer and change of major applications will be reviewed at the end of each academic semester and students will be accepted to the major based on their GPA and number of available seats. Pre-CSM majors will be given preference in the application review.

Students Admitted Under this Catalog Beginning Fall 2019

Applicants entering UTSA as Freshmen will be directly admitted to the Construction Science and Management (CSM) major if they:

- meet all UTSA undergraduate admission requirements, and
- are ranked in the top 10 percent of their high school class and a minimum 1350 SAT* or 29 ACT score, or
- are ranked in the top 15 percent of their high school class with a minimum 1170 SAT* or 24 ACT score.

* New SAT scores combine Evidence-Based Reading and Writing and Math.

Transfer students will be directly admitted to the Construction Science and Management (CSM) major if they:

- meet all UTSA undergraduate admission requirements, and
- have a minimum transfer grade point average (GPA) of 3.2.

Freshmen and Transfer students who do not meet the above requirements, but meet UTSA's general admission requirements will be admitted to "Architecture, Construction and Planning Studies" in University College where students will be able to work towards meeting the prerequisites needed to declare Construction Science and Management as their major. Students in Architecture, Construction and Planning Studies will be reviewed before registration each academic semester and students will be accepted to the Construction Science and Management major (CSM) based on their grade point average (GPA) and number of available seats.

Students currently enrolled in UTSA who wish to change their major may apply to the Construction Science and Management major by submitting the "Change of Major Form" and "Unofficial Transcript" to the Construction Science Department located in the Monterey Building. Current UTSA students interested in Construction Science and Management are first considered by the Department for Architecture, Construction and Planning Studies (XACP) admission and then considered for possible admission into the CSM program. Change of major applications will be reviewed before registration each academic semester. Students will be accepted to the major based on their GPA and number of available seats.

Students not accepted into the CSM program are encouraged to improve their GPA and re-submit the application.

Laptop Program

Students must have a laptop (notebook) computer upon entering the program. The computer should be upgradeable in order to be of productive use for the duration of the academic program.

Student Work

The Department of Construction Science reserves the right to retain, exhibit, and reproduce work submitted by students. Work submitted for

grading is the property of the College of Architecture, Construction and Planning and remains such until it is returned to the student.

Bachelor of Science Degree in Construction Science and Management

The Construction Science and Management degree combines courses in construction science, design 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 120, 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 on the job site and effectively interact with architects, engineers, owners and other professionals who compose the team required by the complexities of modern construction 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 complete 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 with various opportunities.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements

Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. 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.

MAT 1043 or MAT 1053 may be used to satisfy the core requirement in Mathematics.

ES 2023 and GEO 1013 should be used to satisfy the core requirement in Life and Physical Sciences.

ECO 2023 should be used to satisfy the core requirement in Social and Behavioral Sciences.

COM 2113 should be used to satisfy the Component Area Option requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6

Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. Construction Science and Management Program sequence. Must be completed with a grade of "C-" or better in each course.

1. Required courses in design, construction science, and project management:		
CSM 2113	Construction Materials and Methods	3
CSM 2143	Construction Materials and Testing	3
CSM 3113	Construction Surveying	3
CSM 3123	Technical Communication	3
CSM 3143	Structures I	3
CSM 4013	Construction Estimating I	3
CSM 4023	Construction Estimating II	3
CSM 4143	Structures II	3
CSM 4513	Project Management	3
CSM 4523	Project Planning and Scheduling	3
CSM 4533	Building Information Modeling for Construction Management	3
CSM 4613	Sustainable Building Practice	3
CSM 4623	Construction Safety	3
CSM 4633	Construction Law	3
CSM 4643	Mechanical, Electrical and Plumbing Systems	3
CSM 4713	Construction Capstone	3
CSM 4933	Summer Internship	3
2. Required business and related courses:		
ACC 2013	Principles of Accounting I	3
BLW 3013	Business Law	3
FIN 3003	Survey of Finance	3
GBA 2013	Legal, Social and Ethical Issues in Business	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
3. One course in physics:		
PHY 1603	Algebra-based Physics I	3
4. One course in statistics:		
STA 1053	Basic Statistics	3
B. Two prescribed or preapproved electives selected from the following list, with a grade of "C-" or better in each course:		
CSM 2323	Construction Documents	3
CSM 2333	Construction Culture and History	3
CSM 4913	Independent Study	3
CSM 4953	Special Studies in Construction Science and Management	3
FIN 3013	Principles of Business Finance	3
GEO 3343	Introduction to Geospatial Technologies	3
MGT 3003	Business Communication and Professional Development	3

MGT 3253	Interpersonal Communication
MGT 4023	Business Plan
MGT 4893	Management Strategy
MKT 3013	Principles of Marketing
MS 3043	Business Statistics with Computer Applications II
MS 3053	Management Science and Operations Technology
MS 3073	Business Analytics
MS 3403	Logistics Management
MSC 2012 & MSC 2011	Leadership and Decision Making and Leadership and Decision Making Laboratory
PAD 3143	Urban and Regional Planning
SPN 2023	Intermediate Spanish II

Total Credit Hours 78

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

Students are strongly encouraged to complete WRC 1013, WRC 1023, MAT 1043 or MAT 1053, and PHY 1603 in their first year.

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1043 or MAT 1053	Introduction to Mathematics (core) or Mathematics for Business	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History core		3
Language, Philosophy and Culture core		3
Credit Hours		15

Spring

ES 2023 or GEO 1013	Introduction to Environmental Science II (core) or The Third Planet	3
PHY 1603	Algebra-based Physics I	3
WRC 1023	Freshman Composition II (Q) (core)	3
American History core		3
Creative Arts core		3
Credit Hours		15

Second Year

Fall		
ACC 2013	Principles of Accounting I	3
CSM 2113	Construction Materials and Methods	3
CSM 3123	Technical Communication	3
ECO 2023	Introductory Microeconomics (core)	3
GEO 1013 or ES 2023	The Third Planet (core) or Introduction to Environmental Science II	3
Credit Hours		15

Spring

COM 2113	Public Speaking (core)	3
CSM 2143	Construction Materials and Testing	3
CSM 4013	Construction Estimating I	3

GBA 2013	Legal, Social and Ethical Issues in Business	3
STA 1053	Basic Statistics	3
Credit Hours		15

Third Year

Fall

BLW 3013	Business Law	3
CSM 3143	Structures I	3
CSM 4023	Construction Estimating II	3
CSM 4513	Project Management	3
CSM 4533	Building Information Modeling for Construction Management	3
Credit Hours		15

Spring

CSM 4143	Structures II	3
CSM 4523	Project Planning and Scheduling	3
CSM 4623	Construction Safety	3
CSM 4643	Mechanical, Electrical and Plumbing Systems	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
Credit Hours		15

Summer

CSM 3113	Construction Surveying	3
CSM 4933	Summer Internship	3
Credit Hours		6

Fourth Year

Fall

CSM 4613	Sustainable Building Practice	3
CSM 4633	Construction Law	3
FIN 3003	Survey of Finance	3
POL 1013	Introduction to American Politics (core)	3
Credit Hours		12

Spring

CSM 4713	Construction Capstone	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Prescribed Elective		3
Prescribed Elective		3
Credit Hours		12
Total Credit Hours		120

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 the AACSB (Association to Advance Collegiate Schools of Business) International and is one of a select group of programs internationally with separate accreditation at the undergraduate, master's and doctoral levels in accounting.

Students who graduate from the College of Business will enter a dynamic employment market that values graduates with market based skills. To meet the demands of our students and the employment market, the College of Business offers 12 undergraduate majors. Additionally, students can select from 14 different minors to augment the knowledge and skills acquired in their major. The College also offers six supporting business competencies which are multidisciplinary sets of electives combined to create valuable skills. Finally, the College currently offers three undergraduate certificate programs.

The preponderance of our undergraduate courses are offered in a traditional classroom setting, which exploits current technologies through the use of a learning management system and contemporary classroom technologies. We are also greatly expanding student access to online courses, especially for the Common Body of Knowledge (CBK) courses, as well as the recently launched online B.B.A. in Cyber Security.

The College offers comprehensive career preparation and services through the Center for Student Professional Development (CSPD). The CSPD is devoted to transforming business students into business professionals and to meeting the recruitment needs of employers locally and globally. The Center enhances the business curriculum by helping students build the skills and knowledge that will help them be more confident and polished when they enter the business world. Workshops and events are woven into the academic curriculum of the College.

The College of Business offers a wide variety of programs on campus and abroad to develop students' international business skills. 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 takes groups of students for international immersion study at locations where they meet executives, take classes and experience an international culture for themselves. On-campus programs include courses with high-impact experiential learning modules, professional development for international careers and the Global Business Club. Students who participate in College of Business international programs will develop skills to help them succeed in business around the world.

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 can accommodate, the undergraduate admission policy seeks to identify those students most likely to succeed in an undergraduate business education.

There are two paths students can take to gain admission to a Bachelor of Business Administration degree: Direct Admission and the Performance Track. 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 not admitted to 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. Students with majors outside of the College of Business may not seek more than one business minor.

Direct Admission Criteria

Freshmen and Freshmen Transfers (Freshmen Transfers admitted prior to Fall 2019)

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 B.B.A. major if they meet the requirements listed under option 1 or option 2 below:

Option 1:

- Meet all UTSA undergraduate admission requirements.
- Are ranked in the top 25 percent of their high school class.
- Earn an SAT score of 1100 or higher (old SAT), 1170 or higher (new SAT), or a 24 or higher composite score on the ACT.
- Have successfully completed evaluation under the Texas Success Initiative (TSI) for unencumbered registration for courses.

Option 2:

- Meet all UTSA undergraduate admission requirements.
- Earn an SAT score of 1200 or higher (old SAT), 1270 or higher (new SAT) or a 26 or higher composite score on the ACT.
- Have successfully completed evaluation under the Texas Success Initiative (TSI) for unencumbered registration for courses.

Transfer Students Admitted Under this Catalog Prior to Fall 2019

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

- Meet all UTSA undergraduate admissions requirements.
- Have a transfer grade point average (GPA) of 3.0 or higher.
- Have completed MAT 1133 Calculus for Business (TCCN MATH 1325) or equivalent with a grade of "C-" or better.

- Have successfully completed evaluation under the Texas Success Initiative (TSI) for unencumbered registration for courses.

All Transfer Students Admitted Under this Catalog Beginning Fall 2019

Applicants who have completed transferable college credit will be directly admitted to any B.B.A. major if they:

- Meet all UTSA undergraduate admissions requirements.
- Have a transfer grade point average (GPA) of 3.0 or higher.
- Have completed MAT 1133 Calculus for Business (TCCN MATH 1325) or equivalent with a grade of "C-" or better.
- Have successfully completed evaluation under the Texas Success Initiative (TSI) for unencumbered registration for courses.

Performance Track

Applicants who do not meet the direct admission criteria will have the opportunity to earn admission to the B.B.A. degree major if they qualify to compete as a pre-business major (for students admitted under this catalog prior to Fall 2019) or as Business Studies major (for students admitted under this beginning Fall 2019).

In order to qualify as a pre-business or Business Studies major, students must meet the following criteria:

- have successfully completed evaluation under the Texas Success Initiative (TSI), and
- qualify for enrollment in MAT 1053 Mathematics for Business or a higher level mathematics course, and
- qualify for enrollment in WRC 1013 Freshman Composition I (Q) or higher.

Pre-business and Business Studies students will be evaluated for admission to the B.B.A. after they complete the following coursework:

- WRC 1013 Freshman Composition I (Q) (grade of "C-" or better) or equivalent (TCCN ENGL 1301)
- MAT 1133 Calculus for Business (grade of "C-" or better) or equivalent (TCCN 1325). MAT 1214 Calculus I for majors in Actuarial Science (grade of "C-" or better) (TCCN MATH 2413).
- 12 credit hours of UTSA business courses required in the Common Body of Knowledge (CBK)

The number of students admitted to the UTSA College of Business each semester will depend upon several factors to include the capacity of the College of Business, strategic enrollment goals of UTSA, and the size and quality of the applicant pool. Therefore, admission to the UTSA College of Business is not guaranteed. In order to be admitted, all pre-business and Business Studies students must be in good academic standing (i.e., students must maintain a UTSA and College of Business GPA of 2.0 or higher). The admission decision will be based on the GPA for all COB courses completed. The minimum COB GPA to be used as a basis for admission decisions will be announced by the COB prior to census date each semester. Students will have one chance to be evaluated for admission. Students who are not admitted to the College once evaluated are not eligible to complete a bachelor of business administration degree in business at UTSA. They will be changed from pre-business (PRB) or Business Studies (XBUS) to undeclared (UND) and must choose a major other than a business discipline. Students will be notified of their admission status through their preferred email address as designated in the University system.

Non-admitted 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.

Gateway Course

Students pursuing a Bachelor of Business Administration degree (B.B.A.) must successfully complete MAT 1133 Calculus for Business, the Gateway Course, with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major outside of business.

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

Students seeking a B.A. in Economics or a B.S. in Statistics and Data Science 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 student's primary academic advisor. Students seeking these degrees are subject to the academic standing policy of the College of Business.

Academic Standing for Declared Business Majors

College of Business majors (B.B.A. degrees, B.A. degree in Economics and B.S. degree in Statistics and Data Science) must maintain good academic standing. This requires that the student maintain a UTSA grade point average of at least 2.0 every semester and meet all University regulations related to good academic standing. Students on probation with UTSA may remain in the College of Business, however, students who are dismissed from UTSA for low academic performance may not return to the College of Business. If the student chooses to return to UTSA, the student must select a new major outside of business.

In order to graduate, all College of Business majors must be in good academic standing (i.e., students must maintain a UTSA, College of Business, and Major GPA of 2.0 or higher).

Business Honors Program

The Business Honors distinction is available only to students admitted to the Business Honors Program (BHP). Students pursuing B.B.A. majors in the College of Business are eligible to apply and participate. The Business Honors Program provides outstanding students with opportunities to benefit from an enriched first-class education. Business Honors students will take smaller classes taught by some of the best faculty in the College. Additionally, the program is designed to give our students a competitive edge in the job market. Students are required to complete a total of 18 credit hours of business honors coursework as well as experiential learning activities during their undergraduate education.

Business honors students may participate in the Honors College Program along with the Business Honors Program.

Program Admission

Undergraduate pre-business, Business Studies or business majors and community college transfer students interested in business as an

area of study are encouraged to apply. Students interested in being admitted to the Business Honors Program must complete an application for admission. Every Honors applicant is evaluated on an individual basis.

Admission to the Business Honors Program is competitive. Selection will be based on the following criteria:

- Students must have at least 15 UTSA semester credit hours that apply toward graduation with at least one semester completed at UTSA.
- Students must demonstrate high academic achievement with a minimum UTSA and College of Business grade point average of 3.25.
- Students must have well-documented involvement in extracurricular activities and/or work experience.
- Students must demonstrate exceptional involvement and leadership in the business school and/or at UTSA.
- Students must prepare and submit an application essay.

Students who are admitted to the Honors College Program have direct admission to the Business Honors Program.

Applications are only accepted in the spring semester. The application forms and deadlines will be available on the College of Business website.

Program Requirements

The Business Honors Program requires its member to meet academic and experiential learning requirements in order to graduate with the Business Honors designation. In order to earn the Business Honors designation program participants must:

1. Maintain a minimum cumulative UTSA and COB grade point average of 3.25
2. Complete 18 semester credit hours of honors courses including the following:
 - a. Honors sections of five of the following: ACC 2013, ACC 2033, ECO 2013, ECO 2023, FIN 3013, GBA 2013, IS 3003, MGT 3013, MKT 3013, MS 1023, or MS 3043 and;
 - b. MGT 4893 designated honors course.
These undergraduate courses are offered once per year. 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.
3. Experiential learning requirements
The Business Honors Program promotes participation in activities outside of the classroom to enhance the undergraduate experience. Therefore, Business Honors Program students must demonstrate that they have participated in experiential learning activities during their undergraduate education. The experiential learning requirements will be provided in the COB honors program handbook. Other program requirements may apply.

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 website 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/>. Additional 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: Actuarial Science; Adaptive Decision Models for Business; Cyber Security; Digital Forensics; Economics; Information Systems; Management Science; Network and Data Center Management; and Statistics.

Students with majors outside of the College of Business may not seek more than one business minor.

The following College of Business minors are open to B.B.A. majors only: Finance, Marketing, and Sport Management.

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

Supporting Business Competencies in the College of Business

Students admitted to the College of Business will have the opportunity to include a supporting business competency. A supporting business competency is a multidisciplinary collection of elective courses which together provide the student with an opportunity to pursue a specialized market-based skill. Supporting business competencies will not appear as a credential on student transcripts. The College of Business currently offers the following six supporting business competencies.

Once students have been admitted to the College, declare their major, and are considering completing a competency, they should be aware of prerequisite courses when planning their degree.

Analytics (9 semester credit hours) – Students who complete the Analytics competency will prepare to properly collect, process and analyze data; to generate and interpret results, and to draw and communicate informed conclusions in order to support business and economic decision making.

Select three courses from the following:

ECO 3123	Introduction to Econometrics and Business Forecasting	3
FIN 4873	Computer Modeling of Financial Applications	3
MKT 4953	Special Studies in Marketing	3
MS 3073	Business Analytics	3
MS 3313	Business Applications of Statistics	3

MS 4383	Predictive Operational Analytics	3
MS 4323	Simulation Applications in Business	3

Entrepreneurship (9 semester credit hours) – Students who complete the Entrepreneurship competency will prepare to participate in the creation, launch and management of new business ventures.

ENT 3123	Innovation and Entrepreneurship	3
And two of the following:		
BLW 3013	Business Law	3
ENT 4123	Commercialization and Enterprise Planning	3
ENT 4903	Business Venture Practicum	3
FIN 4333	Business Finance for Entrepreneurs	3
MKT 4053	New Product Development	3

International Business (9 semester credit hours) – Students who complete the International Business competency will prepare to understand international marketing, strategic, financial and economic issues that confront managers of multinational enterprises.

Select three courses from the following:

ECO 3193	International Economics	3
FIN 4613	Introduction to International Finance	3
GBA 4873	Global Business Immersion I	3
MGT 4073	International Management	3
MGT 4083	Comparative International Management Practices	3
MKT 4073	International Marketing	3

Leading Change (9 semester credit hours) – Students who complete the Leading Change competency will prepare to lead teams of professionals to plan projects, deliver solutions and improve efficiency and effectiveness in the contemporary organization.

MGT 4923	Leading Organizations and Making Decisions	3
And two of the following:		
MGT 4433	Introduction to Business Negotiations	3
MGT 4943	Managing Teams and Avoiding Conflict	3
MOT 4143	Introduction to Project Management	3
MS 4313	Six Sigma and Lean Operations	3

Modeling (9 semester credit hours) – Students who complete the Modeling competency will prepare to perform, through proper use of quantitative and computer models, problem solving and decision analysis in support of business functions in a real world environment.

Select three courses from the following:

ECO 3123	Introduction to Econometrics and Business Forecasting	3
FIN 4873	Computer Modeling of Financial Applications	3
MS 3063	Decision Support Systems	3
MS 4383	Predictive Operational Analytics	3
MS 4323	Simulation Applications in Business	3

Risk Management (9 semester credit hours) – Students who complete the Risk Management competency will prepare to identify sources of risk in an enterprise and manage this risk in a prudent manner.

FIN 4523	Introduction to Risk Management	3
FIN 4813	Property-Liability Insurance Finance	3
FIN 4823	Life and Health Insurance Finance	3

Enrollment in College of Business Courses

Enrollment in College of Business courses, with the exception of ACC 2003, FIN 3003 and ECO 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 1053 Mathematics for Business (or a higher level mathematics course) and WRC 1013 Freshman Composition I (Q) (or higher). Additionally ACC 2033 will be open to pre-business, Business Studies and declared business majors and restricted to undeclared (UND) majors.

A specific B.B.A. major cannot be guaranteed and will depend on departmental resources.

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 exception of FIN 3003, MGT 3013, and MKT 3013, and any Statistics (prefix: STA) course which are open to all students who meet course prerequisites.

Students outside the College of Business may petition to enroll in all other 3000- and 4000-level College of Business courses. Evaluation of all petitions to enroll in major restricted courses will consider whether (a) the course applies to their degree plan, and (b) whether the student meets all prerequisites. All of these petitions must be approved by appropriate Department Chair and College Dean. Enrollment in MGT 3003 is restricted to pre-business, Business Studies and declared business majors only. 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.

All degrees in the College of Business require 120 hours. If a student elects to take a course that satisfies both a University Core Curriculum and COB requirement, students may need to take an additional course to meet the 120 hours.

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 60 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 or her major degree requirements for specific details.
4. Internships at all for-profit companies must be paid at an hourly rate equivalent to the minimum wage or higher to be in compliance with the Department of Labor guidelines.

5. Each student must meet the requirements of his or 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.
6. The internship must last at least 200 work hours within the term of enrollment in which the student is seeking academic credit.

Independent Study

In order to qualify for an independent study, students must have a COB GPA of 3.0, permission in writing from the instructor, Department Chair, and the Dean of the College in addition to any departmental prerequisites.

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	3
ACC 2033	Principles of Accounting II	3
COM 1053	Business and Professional Speech	3
or COM 1063	Digital Business Communication	
ECO 2013	Introductory Macroeconomics	3
ECO 2023	Introductory Microeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
FIN 3013	Principles of Business Finance	3
GBA 2013	Legal, Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
or IS 1413	Excel for Business Information Systems	
IS 3003	Principles of Information Systems for Management	3
MAT 1133	Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1133)	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 3003 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3513 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

Note: Students majoring in Accounting, Actuarial Science, Economics, Finance, Management Science, and Statistics and Data Science are strongly encouraged to select IS 1413 Excel for Business Information Systems.

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

Bachelor of Business Administration Degree in Cyber Security – Online Degree

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

All candidates seeking this degree must fulfill the University Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed under the Department of Information Systems and Cyber Security (p. 42) section of this catalog.

Admission Requirements

1. First-Time Freshmen

You are a first-time freshman applicant if you have not graduated from high school at the time of application or you have graduated from high school, but did not enroll in a college or university since graduation.

Prospective first-time freshman students qualify for direct admission to the online Bachelor of Business Administration (B.B.A.) degree in Cyber Security if they:

A. meet all UTSA undergraduate admission requirements,

B. have graduated in the top quartile of their high school graduation class, or

C. have graduated in the second quartile of their high school class and have an SAT score of at least 1100 (Reading and Math, old SAT), 1170 (Reading and Math, new SAT) or an ACT composite score of at least 24

AND

D. have successfully completed evaluation under the Texas Success Initiative (TSI), and

E. qualify for enrollment in the following:

I. MAT 1053 Mathematics for Business or a higher level mathematics course, and

II. WRC 1013 Freshman Composition I (Q) or higher.

Students who do not satisfy the COB direct admission requirements for the online B.B.A. degree in Cyber Security program delineated in A-E above may be granted admission to the program through a holistic review process that will consider the information available in the Texas common application.

2. Current UTSA Students

You are a current student if you have been admitted to UTSA and are enrolled in coursework. Current UTSA students need to meet the criteria below to be considered for direct admission to the online B.B.A. degree in Cyber Security:

- A. completed at least 12 semester credit hours of UTSA credit,
- B. earned a 2.75 overall UTSA GPA,
- C. successfully completed evaluation under the Texas Success Initiative (TSI), and
- D. qualify for enrollment in the following:
 - I. MAT 1053 Mathematics for Business or a higher level mathematics course, and
 - II. WRC 1013 Freshman Composition I (Q) or higher.

Applying as a Current UTSA Student

Submit a Student Petition for Substitution/Waiver of University Requirement to the Department of Information Systems and Cyber Security.

3. Transfer Students

Transfer students are applicants who have earned transferable credit hours from a college or university and have been out of high school for at least one semester (not including summer).

UTSA admission requirements for transfer students vary depending on the number of transferable credit hours completed at the time of application.

Prospective transfer students need to meet the criteria below to be considered for direct admission to the online B.B.A. degree in Cyber Security:

- A. meet all UTSA undergraduate transfer admission requirements,
- B. have a transfer grade point average of at least 2.75 overall GPA on a 4.0 scale in all transferable coursework and be eligible to return to the most recent institution,
- C. qualify for enrollment in or completed the equivalent of the following:
 - I. MAT 1053 Mathematics for Business or a higher level mathematics course, and
 - II. WRC 1013 Freshman Composition I (Q) or higher.

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 and Data Science), except business students seeking a B.B.A. degree. The following 18 semester credit hours are required in the College of Business:

A. Required Courses

ACC 2003	Foundations of Accounting	3
or ACC 2013	Principles of Accounting I	
ECO 2023	Introductory Microeconomics	3
FIN 3003	Survey of Finance	3
IS 1403	Business Information Systems Fluency	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3

MKT 3013	Principles of Marketing	3
Total Credit Hours		18

To declare a Minor in Business Administration, obtain advice and seek approval of substitutions for course requirements with your academic advisor.

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 professional outreach activities that serve the constituents of the Department in the state, the nation, and the global community.

Three-Attempt Limit for the Department of Accounting

A student unable to achieve the minimum required grade in an upper-division accounting course within three enrollments (attempts) shall be required to change his or her major to a field outside of the Department of Accounting. Enrollment in a course for a period of time sufficient for assignment of a grade, including a grade of "W," is considered an attempt.

- B.B.A. Degree in Accounting (p. 31)
- Five-Year (150-Hour) Professional Accounting Program (p. 33)

Bachelor of Business Administration Degree in Accounting

The minimum number of semester credit hours for the Bachelor of Business Administration (B.B.A.) 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 an overall grade point average of 2.0 or better in the 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 B.B.A. degree in Accounting must fulfill University Core Curriculum requirements in the same manner as other students.

MAT 1053 and MAT 1133 should be used to satisfy the core requirement in Mathematics (020) and the core requirement in the Component Area Option (090). ECO 2023 should be used to satisfy the core requirement in Social and Behavioral Sciences (080).

MAT 1133 and ECO 2023 may be used to satisfy both Core Curriculum requirements and Common Body of Knowledge (CBK) requirements.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

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	3
ACC 2033	Principles of Accounting II	3
COM 1053	Business and Professional Speech	3
or COM 1063	Digital Business Communication	
ECO 2013	Introductory Macroeconomics	3
ECO 2023	Introductory Macroeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
FIN 3013	Principles of Business Finance	3
GBA 2013	Legal, Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
or IS 1413	Excel for Business Information Systems	
IS 3003	Principles of Information Systems for Management	3
MAT 1133	Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1133)	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 3003 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3513 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

Note: Students majoring in Accounting, Actuarial Science, Economics, Finance, Management Science, and Statistics and Data Science are strongly encouraged to select IS 1413 Excel for Business Information Systems.

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.

Gateway Courses

Students pursuing the B.B.A. degree in Accounting must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

ACC 3023	Intermediate Accounting I	3
MAT 1133	Calculus for Business	3

Degree Requirements

A. Major Requirements 24

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	
BLW 3033	Business Law for Accountants	

B. Support Work in Major 9

Option 1: Complete a Business Competency (9 semester credit hours in a competency)

Option 2: Complete 9 semester credit hours of upper-division business electives

Total Credit Hours		33
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Notes for students who intend to take the Certified Public Accountant (CPA) examination:

- 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 website at www.tsbpa.state.tx.us (<http://www.tsbpa.state.tx.us>).
- The 24 semester credit hours of upper-division accounting hours required to earn a B.B.A. in Accounting is less than the 30 hours of upper-division accounting coursework required to sit for the CPA examination under current Texas state law. Students interested in preparing for the CPA examination should refer to the Five-Year Professional Accounting Program information following the course sequence guide for the B.B.A. in Accounting.
- 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." GBA 2013 does not satisfy the ethics requirement for social and ethical issues in business. Students interested in preparing for the CPA examination should refer to the Five-Year Professional Accounting Program information following the course sequence guide for the B.B.A. in Accounting.

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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1053	Mathematics for Business (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
Credit Hours		15

Spring

ECO 2023	Introductory Microeconomics (core and CBK) ¹	3
COM 1053 or COM 1063	Business and Professional Speech (CBK) or Digital Business Communication	3
IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3
WRC 1023	Freshman Composition II (Q)	3
MAT 1133	Calculus for Business (core and CBK) ¹	3
Credit Hours		15

Second Year

Fall		Credit Hours
ACC 2013	Principles of Accounting I (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
ECO 2013	Introductory Macroeconomics (CBK)	3
Government-Political Science (core)		3
Creative Arts (core)		3
Credit Hours		15

Spring

ACC 2033	Principles of Accounting II (CBK)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
Government-Political Science (core)		3

Language, Philosophy & Culture (core)	3
Credit Hours	15

Third Year

Fall

ACC 3023	Intermediate Accounting I (major)	3
ACC 3113	Accounting Information Systems (major)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
Life & Physical Sciences (core)		3
Credit Hours		15

Spring

ACC 3033	Intermediate Accounting II (major)	3
ACC 3123	Cost Analysis (major)	3
FIN 3013	Principles of Business Finance (CBK)	3
GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
Credit Hours		15

Fourth Year

Fall

ACC 3043	Federal Income Taxation (major)	3
ACC 4013	Principles of Auditing (major)	3
BLW 3033	Business Law for Accountants (major)	3
MKT 3013	Principles of Marketing (CBK)	3
Business upper-division elective or competency course (support work)		3
Credit Hours		15

Spring

ACC 4163	Contemporary Issues in Accounting Practice (major)	3
MGT 4893	Management Strategy (CBK)	3
Two business upper-division electives or competency courses (support work)		6
American History (core)		3
Credit Hours		15
Total Credit Hours		120

¹ College of Business students should take MAT 1133 and ECO 2023 to satisfy both Core Curriculum and CBK requirements.

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.

- B.B.A. Degree in Economics (p. 34)
- B.A. Degree in Economics (p. 36)

Bachelor of Business Administration Degree in Economics

The minimum semester credit hours for the Bachelor of Business Administration (B.B.A.) 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 B.B.A. degree in Economics must fulfill University Core Curriculum requirements in the same manner as other students.

MAT 1053 and MAT 1133 should be used to satisfy the core requirement in Mathematics (020) and the core requirement in the Component Area Option (090). ECO 2023 should be used to satisfy the core requirement in Social and Behavioral Sciences (080).

MAT 1133 and ECO 2023 may be used to satisfy both Core Curriculum requirements and Common Body of Knowledge (CBK) requirements.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

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	3
ACC 2033	Principles of Accounting II	3
COM 1053	Business and Professional Speech	3
	or COM 1063 Digital Business Communication	
ECO 2013	Introductory Macroeconomics	3
ECO 2023	Introductory Microeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
FIN 3013	Principles of Business Finance	3
GBA 2013	Legal, Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
	or IS 1413 Excel for Business Information Systems	
IS 3003	Principles of Information Systems for Management	3
MAT 1133	Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1133)	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 3003 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3513 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

Note: Students majoring in Accounting, Actuarial Science, Economics, Finance, Management Science, and Statistics and Data Science are strongly encouraged to select IS 1413 Excel for Business Information Systems.

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.

Gateway Course

Students pursuing the B.B.A. degree in Economics must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1133	Calculus for Business	3
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Degree Requirements

A. Major Requirements	12
ECO 3013 Intermediate Microeconomics	
ECO 3053 Intermediate Macroeconomics	
ECO 3113 Introduction to Mathematical Economics	
ECO 3123 Introduction to Econometrics and Business Forecasting	
B. Support Work in Major	12
12 semester credit hours of upper-division Economics electives	
C. Additional Support Work	9
Option 1: Complete a Business Competency (9 semester credit hours in a competency)	
Option 2: Complete 9 semester credit hours of free electives	
Total Credit Hours	33

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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1053	Mathematics for Business (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
	American History (core)	3
	Life & Physical Sciences (core)	3
	Credit Hours	15

Spring

COM 1053 or COM 1063	Business and Professional Speech (CBK) or Digital Business Communication	3
ECO 2023	Introductory Microeconomics (core and CBK) ¹	3
IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3
WRC 1023	Freshman Composition II (Q) (core)	3
MAT 1133	Calculus for Business (core and CBK) ¹	3
	Credit Hours	15

Second Year

Fall		Credit Hours
ACC 2013	Principles of Accounting I (CBK)	3
ECO 2013	Introductory Macroeconomics (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
	Language, Philosophy & Culture (core)	3
	Creative Arts (core)	3
	Credit Hours	15

Spring

ACC 2033	Principles of Accounting II (CBK)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
	Government-Political Science (core)	3
	Life & Physical Sciences (core)	3
	Credit Hours	15

Third Year

Fall		Credit Hours
ECO 3013	Intermediate Microeconomics (major)	3
ECO 3113	Introduction to Mathematical Economics (major)	3
IS 3003	Principles of Information Systems for Management (CBK)	3

MS 3053	Management Science and Operations Technology (CBK)	3
Government-Political Science (core)		3
Credit Hours		15
Spring		
ECO 3053	Intermediate Macroeconomics (major)	3
ECO 3123	Introduction to Econometrics and Business Forecasting (major)	3
FIN 3013	Principles of Business Finance (CBK)	3
GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
Credit Hours		15
Fourth Year		
Fall		
MKT 3013	Principles of Marketing (CBK)	3
Business Competency or free elective		3
Business Competency or free elective		3
Upper-division economics elective (3XXX or 4XXX level) (major)		3
Upper-division economics elective (3XXX or 4XXX level) (major)		3
Credit Hours		15
Spring		
MGT 4893	Management Strategy (CBK)	3
Business Competency or free elective		3
Upper-division economics elective (3XXX or 4XXX level) (major)		3
Upper-division economics elective (3XXX or 4XXX level) (major)		3
American History (core)		3
Credit Hours		15
Total Credit Hours		120

¹ College of Business students should take MAT 1133 and ECO 2023 to satisfy both Core Curriculum and CBK requirements.

Bachelor of Arts Degree in Economics

The minimum semester credit hours for the Bachelor of Arts (B.A.) 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 B.A. degree in Economics must fulfill University Core Curriculum requirements in the same manner as other students.

MAT 1053 and MAT 1133 should be used to satisfy the core requirement in Mathematics (020) and the core requirement in the Component Area

Option (090). ECO 2023 should be used to satisfy the core requirement in Social and Behavioral Sciences (080).

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

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

A. Required courses in the major	39
COM 1053 Business and Professional Speech	
ECO 2013 Introductory Macroeconomics	
ECO 2023 Introductory Microeconomics	
ECO 3013 Intermediate Microeconomics	
ECO 3053 Intermediate Macroeconomics	
STA 1053 Basic Statistics	
21 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 B.A. degree in Economics is available from your academic advisor or the Department of Economics.	
B. Social science electives	12
Select from American studies (AMS), anthropology (ANT), bicultural-bilingual studies (BBL), criminal justice (CRJ), geography (GES), history (HIS), politics and law (PAL), philosophy (PHI), political science (POL), psychology (PSY), or sociology (SOC).	
C. Lower-division or upper-division business or non-business electives	30
Select 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.	
Total Credit Hours	81

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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1053	Mathematics for Business (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
Credit Hours		15
Spring		
COM 1053	Business and Professional Speech (major)	3
STA 1053	Basic Statistics (major)	3
WRC 1023	Freshman Composition II (Q) (core)	3
MAT 1133	Calculus for Business (core) ¹	3
American History (core)		3
Credit Hours		15

Second Year

Fall		Credit Hours
ECO 2023	Introductory Microeconomics (core) ¹	3
Government-Political Science (core)		3
Language, Philosophy & Culture (core)		3
Life & Physical Sciences (core)		3
Creative Arts (core)		3
Credit Hours		15
Spring		
ECO 2013	Introductory Macroeconomics	3
Business or non-business elective (support work)		3
Social Science Elective		3
Social Science Elective		3
Government-Political Science (core)		3
Credit Hours		15

Third Year

Fall		Credit Hours
ECO 3013	Intermediate Microeconomics	3
Business or non-business elective (support work)		3
Upper-division ECO elective (3XXX or 4XXX level) (major)		3
Upper-division ECO elective (3XXX or 4XXX level) (major)		3
Social Science Elective		3
Credit Hours		15
Spring		
ECO 3053	Intermediate Macroeconomics	3
Business or non-business elective (support work)		3
Upper-division business or non-business elective (3XXX or 4XXX level) (support work)		3
Upper-division ECO elective (3XXX or 4XXX level) (major)		3

Social Science Elective	3
Credit Hours	15

Fourth Year

Fall

Business or non-business elective (support work)	3
Upper-division business or non-business elective (3XXX or 4XXX level) (support work)	3
Upper-division business or non-business elective (3XXX or 4XXX level) (support work)	3
Upper-division ECO elective (3XXX or 4XXX level) (major)	3
Upper-division ECO elective (3XXX or 4XXX level) (major)	3
Credit Hours	15

Spring

Business or non-business elective (support work)	3
Business or non-business elective (support work)	3
Upper-division business or non-business elective (3XXX or 4XXX level) (support work)	3
Upper-division ECO elective (3XXX or 4XXX level) (major)	3
Upper-division ECO elective (3XXX or 4XXX level) (major)	3
Credit Hours	15
Total Credit Hours	120

¹ College of Business students should take MAT 1133 and ECO 2023 to satisfy Core Curriculum requirements.

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. Required courses	6
ECO 2013	Introductory Macroeconomics
ECO 2023	Introductory Microeconomics
B. Upper-division economics courses	12
Select 12 additional semester credit hours of upper-division economics courses	
Total Credit Hours	18

To declare a Minor in Economics, obtain advice, and seek approval of substitutions for course requirements, students must consult their academic advisor.

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 (B.B.A.) degree in Finance and a B.B.A. 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 that is available only to students pursuing a Bachelor of Business Administration degree.

The department also offers tracks in corporate finance, investment management, and financial institutions to students who wish to specialize within the B.B.A. degree in Finance.

- B.B.A. degree in Finance (p. 38)
- B.B.A. degree in Real Estate Finance and Development (p. 40)

Bachelor of Business Administration Degree in Finance

The minimum number of semester credit hours for the Bachelor of Business Administration (B.B.A.) 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 B.B.A. degree in Finance must fulfill University Core Curriculum requirements in the same manner as other students.

MAT 1053 and MAT 1133 should be used to satisfy the core requirement in Mathematics (020) and the core requirement in the Component Area Option (090). ECO 2023 should be used to satisfy the core requirement in Social and Behavioral Sciences (080).

MAT 1133 and ECO 2023 may be used to satisfy both Core Curriculum requirements and Common Body of Knowledge (CBK) requirements.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6

Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

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	3
ACC 2033	Principles of Accounting II	3
COM 1053	Business and Professional Speech	3
or COM 1063	Digital Business Communication	
ECO 2013	Introductory Macroeconomics	3
ECO 2023	Introductory Microeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
FIN 3013	Principles of Business Finance	3
GBA 2013	Legal, Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
or IS 1413	Excel for Business Information Systems	
IS 3003	Principles of Information Systems for Management	3
MAT 1133	Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1133)	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 3003 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3513 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

Note: Students majoring in Accounting, Actuarial Science, Economics, Finance, Management Science, and Statistics and Data Science are strongly encouraged to select IS 1413 Excel for Business Information Systems.

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.

Gateway Course

Students pursuing the B.B.A. degree in Finance must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1133	Calculus for Business	3
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Degree Requirements

A. Major Requirements 18

ACC 3023	Intermediate Accounting I ¹
ACC 3033	Intermediate Accounting II ¹
FIN 3023	Intermediate Corporate Finance ²
FIN 3033	Principles of Investment
FIN 3313	Money and Banking
FIN 4893	Cases and Problems in Finance

B. Support work in the major 9

9 credit hours in upper-division Finance electives, which can be satisfied by completing a Finance track ^{3, 4, 5}

Corporate Finance Track: Choose three courses from the list below:

FIN 4323	Financial Institutions Management
FIN 4333	Business Finance for Entrepreneurs
FIN 4523	Introduction to Risk Management
FIN 4613	Introduction to International Finance
FIN 4873	Computer Modeling of Financial Applications

Investment Management Track: Choose three courses from the list below:

FIN 3413	Introduction to Financial Markets
FIN 3423	Security Analysis
FIN 4413	Trading and Analysis of Financial Instruments
FIN 4423	Investment Portfolio Management
FIN 4523	Introduction to Risk Management
FIN 4543	Credit Analysis
FIN 4613	Introduction to International Finance
FIN 4873	Computer Modeling of Financial Applications

Financial Institutions Track: Choose three courses from the list below:

FIN 3413	Introduction to Financial Markets
FIN 4323	Financial Institutions Management
FIN 4523	Introduction to Risk Management
FIN 4543	Credit Analysis
FIN 4823	Life and Health Insurance Finance
FIN 4873	Computer Modeling of Financial Applications

C. Additional support work 6

6 semester credit hours of lower-division or upper-division business electives ^{6, 7}

Total Credit Hours 33

- ¹ Finance majors may take ACC 3053 in lieu of ACC 3023 and ACC 3033. Students choosing to take ACC 3053 must take 3 additional semester credit hours of finance electives (FIN 3003 Survey of Finance may not be applied to meeting this requirement).
- ² Clearing the FACT exam is a prerequisite to enrollment in FIN 3023.
- ³ FIN 3003 Survey of Finance may not be applied to meeting this requirement.
- ⁴ If a student chooses to take at least three courses from one track they may have the track designation indicated on their transcript. The track designation will not appear on the diploma.

- ⁵ The Department of Finance recommends that FIN 4873 Computer Modeling of Financial Applications be one of the chosen electives.
- ⁶ Students can take any business electives to satisfy this requirement. The Finance department recommends that students use these hours to take courses in one particular competency. While students may take courses in any competency, courses in risk management, modeling, and analytics are recommended.
- ⁷ If a student does not wish to take courses in a particular competency, the Finance department recommends they take an internship course (FIN 4933 Internship in Finance) and additional finance 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 their academic advisor 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 the indicated sequence. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1053	Mathematics for Business (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
	American History (core)	3
	Life & Physical Sciences (core)	3
	Credit Hours	15

Spring

COM 1053 or COM 1063	Business and Professional Speech (CBK) or Digital Business Communication	3
ECO 2023	Introductory Microeconomics (core and CBK) ¹	3
IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3
WRC 1023	Freshman Composition II (Q) (core)	3
MAT 1133	Calculus for Business (core and CBK) ¹	3
	Credit Hours	15

Second Year

Fall		
ACC 2013	Principles of Accounting I (CBK)	3
ECO 2013	Introductory Macroeconomics (CBK)	3

MS 1023	Business Statistics with Computer Applications I (CBK)	3
Life & Physical Sciences (core)		3
Government-Political Science (core)		3
Credit Hours		15

Spring

ACC 2033	Principles of Accounting II (CBK)	3
FIN 3013	Principles of Business Finance (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
Language, Philosophy & Culture (core)		3
Government-Political Science (core)		3
Credit Hours		15

Third Year

Fall

ACC 3023 or ACC 3053	Intermediate Accounting I (major) or Intermediate Accounting for Finance Majors	3
FIN 3023	Intermediate Corporate Finance (major; students are required to clear the FACT exam before enrolling in FIN 3023)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
Creative Arts (core)		3
Credit Hours		15

Spring

ACC 3033	Intermediate Accounting II (or Upper-division FIN elective (major))	3
FIN 3033	Principles of Investment (major)	3
FIN 3313	Money and Banking (major)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
MKT 3013	Principles of Marketing (CBK)	3
Credit Hours		15

Fourth Year

Fall

GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
Upper-division FIN elective (3XXX or 4XXX level) or course in a finance track (major)		3
Upper-division FIN elective (3XXX or 4XXX level) or course in a finance track (major)		3
Business elective or competency course (support work)		3
Credit Hours		15

Spring

FIN 4893	Cases and Problems in Finance (major)	3
MGT 4893	Management Strategy (CBK)	3
Business elective or competency course (support work)		3

Upper-division FIN elective (3XXX or 4XXX level) or course in a finance track (major)	3	
American History (core)	3	
Credit Hours		15
Total Credit Hours		120

¹ College of Business students should take MAT 1133 and ECO 2023 to satisfy both Core Curriculum and CBK requirements.

Bachelor of Business Administration Degree in Real Estate Finance and Development

The Bachelor of Business Administration (B.B.A.) degree in Real Estate Finance and Development offers students the opportunity to minor in Finance. 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.

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 B.B.A. degree in Real Estate Finance and Development must fulfill University Core Curriculum requirements in the same manner as other students.

MAT 1053 and MAT 1133 should be used to satisfy the core requirement in Mathematics (020) and the core requirement in the Component Area Option (090). ECO 2023 should be used to satisfy the core requirement in Social and Behavioral Sciences (080).

MAT 1133 and ECO 2023 may be used to satisfy both Core Curriculum requirements and Common Body of Knowledge (CBK) requirements.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

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	3
ACC 2033	Principles of Accounting II	3
COM 1053	Business and Professional Speech	3
or COM 1063	Digital Business Communication	
ECO 2013	Introductory Macroeconomics	3
ECO 2023	Introductory Microeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
FIN 3013	Principles of Business Finance	3
GBA 2013	Legal, Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
or IS 1413	Excel for Business Information Systems	
IS 3003	Principles of Information Systems for Management	3
MAT 1133	Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1133)	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 3003 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3513 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

Note: Students majoring in Accounting, Actuarial Science, Economics, Finance, Management Science, and Statistics and Data Science are strongly encouraged to select IS 1413 Excel for Business Information Systems.

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.

Gateway Course

Students pursuing the B.B.A. degree in Real Estate Finance and Development must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1133	Calculus for Business	3
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Degree Requirements

A. Required courses		18
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	
RFD 3533	Principles of Construction for Real Estate Professionals	
RFD 4733	Principles of Sustainable Real Estate Development	

B. Support work in the major and supporting area 6

6 semester credit hours of additional real estate (RFD) or facility and property management (FM) courses

C. Other Supporting Work¹ 9

Option 1: Complete a Finance Track (9 semester credit hours of track courses)

Option 2: Complete a Business Competency (9 semester credit hours in a competency)

Option 3: Complete 9 semester credit hours of free electives

Total Credit Hours	33
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¹ The Finance department recommends that students use these hours to take courses in a particular competency. While students may take courses in any competency, courses in risk management, modeling, and analytics are recommended.

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

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 their academic advisor 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 the indicated sequence. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1053	Mathematics for Business (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
	American History (core)	3
	Life & Physical Sciences (core)	3
	Credit Hours	15

Spring

ECO 2023	Introductory Microeconomics (core and CBK) ¹	3
COM 1053 or COM 1063	Business and Professional Speech (CBK) or Digital Business Communication	3
IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3

WRC 1023	Freshman Composition II (Q) (core)	3
MAT 1133	Calculus for Business (core and CBK) ¹	3
Credit Hours		15

Second Year

Fall

ACC 2013	Principles of Accounting I (CBK)	3
ECO 2013	Introductory Macroeconomics (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
Government-Political Science (core)		3
Creative Arts (core)		3
Credit Hours		15

Spring

ACC 2033	Principles of Accounting II (CBK)	3
FIN 3013	Principles of Business Finance (CBK)	3
GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
Language, Philosophy & Culture (core)		3
Credit Hours		15

Third Year

Fall

FIN 3433	Principles of Real Estate (major)	3
MKT 3013	Principles of Marketing (CBK)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
Government-Political Science (core)		3
Credit Hours		15

Spring

FIN 4723	Principles of Real Estate Investment (major)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
RFD 3533	Principles of Construction for Real Estate Professionals (major)	3
Finance track course, business competency course, or free elective (support work)		3
Upper-division RFD or FM elective (3XXX or 4XXX level) (support work)		3
Credit Hours		15

Fourth Year

Fall

FIN 4713	Mortgage Banking and Real Estate Finance (major)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
RFD 3523	Real Estate Law (major)	3

Finance track course, business competency course, or free elective (support work)		3
Life & Physical Sciences (core)		3
Credit Hours		15

Spring

MGT 4893	Management Strategy (CBK)	3
RFD 4733	Principles of Sustainable Real Estate Development (major)	3
Finance track course, business competency course, or free elective (support work)		3
Upper-division RFD or FM elective (3XXX or 4XXX level) (support work)		3
American History (core)		3
Credit Hours		15
Total Credit Hours		120

¹ College of Business students should take MAT 1133 and ECO 2023 to satisfy both Core Curriculum and CBK requirements.

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 18 semester credit hours of coursework.

A. Required courses		9
FIN 3013	Principles of Business Finance	
FIN 3033	Principles of Investment	
FIN 3313	Money and Banking	
B. Upper-division finance electives		9
Select 9 additional semester credit hours of upper-division finance electives. FIN 3003 Survey of Finance may not be applied to meeting this requirement.		
Total Credit Hours		18

To declare a Minor in Finance and obtain advice, students must consult with their academic advisor.

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 Cyber Security (which is also offered 100 percent online). For admission requirements for the online B.B.A. degree in Cyber Security, please visit <https://go.online.utsa.edu/cybersecurity>. The Department offers minors in Cyber Security, Digital Forensics, Information Systems, and Network and Data Center Management which are open to all majors in the University. In addition, the Department offers a minor in Technology Management for nonbusiness majors. A Certificate in Pathogenic Outbreak Investigations is also offered in collaboration with the Departments of Biology and Computer Science in the College of Sciences.

- B.B.A. degree in Information Systems (p. 43)
- B.B.A. degree in Cyber Security (p. 45)

Bachelor of Business Administration Degree in Information Systems

The minimum number of semester credit hours for the Bachelor of Business Administration (B.B.A.) 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 B.B.A. degree in Information Systems must fulfill University Core Curriculum requirements in the same manner as other students.

MAT 1053 and MAT 1133 should be used to satisfy the core requirement in Mathematics (020) and the core requirement in the Component Area Option (090). ECO 2023 should be used to satisfy the core requirement in Social and Behavioral Sciences (080).

MAT 1133 and ECO 2023 may be used to satisfy both Core Curriculum requirements and Common Body of Knowledge (CBK) requirements.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

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	3
ACC 2033	Principles of Accounting II	3
COM 1053	Business and Professional Speech	3
or COM 1063	Digital Business Communication	
ECO 2013	Introductory Macroeconomics	3
ECO 2023	Introductory Microeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
FIN 3013	Principles of Business Finance	3
GBA 2013	Legal, Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
or IS 1413	Excel for Business Information Systems	

IS 3003	Principles of Information Systems for Management	3
MAT 1133	Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1133)	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 3003 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3513 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

Note: Students majoring in Accounting, Actuarial Science, Economics, Finance, Management Science, and Statistics and Data Science are strongly encouraged to select IS 1413 Excel for Business Information Systems.

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.

Gateway Course

Students pursuing the B.B.A. degree in Information Systems must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1133	Calculus for Business	3
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Degree Requirements

A. Major Requirements 24

IS 1001	Inside Cyber	
IS 2031	Introduction to Programming Concepts Laboratory	
IS 2033	Introduction to Programming Concepts	
IS 2041	Intermediate Object-Oriented Programming Laboratory	
IS 2043	Intermediate Object-Oriented Programming	
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	

B. Support Work in Major 9

9 semester credit hours of upper-division IS courses which may include ONE of the following courses:

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

or complete one of the following tracks:

IT Project Management Track

Choose three courses from the list below:

IS 4083	Agile Project Management
MOT 4143	Introduction to Project Management
MOT 4153	Project Management Certification
MOT 4023	Essentials of Technology Management
MOT 4203	Strategic Management of Technology and Innovation

Cyber Analytics Track

Choose three courses from the list below:

IS 4023	Applied Big Data with Machine Learning
IS 4183	Advanced Database Concepts and Applications
IS 4233	Introduction to Cloud Computing
IS 4483	Digital Forensic Analysis I
IS 4533	Malware Analysis

Total Credit Hours 33

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 their academic advisor 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

First Year

Fall	Credit Hours
AIS 1203 Academic Inquiry and Scholarship (core)	3
American History (core)	3
Life & Physical Sciences (core)	3
MAT 1053 Mathematics for Business (core)	3
WRC 1013 Freshman Composition I (Q) (core)	3
Credit Hours	15

Spring

COM 1053 Business and Professional Speech (CBK) or COM 1063 or Digital Business Communication	3
ECO 2023 Introductory Microeconomics (core and CBK) ¹	3
IS 1403 Business Information Systems Fluency (CBK) or IS 1413 or Excel for Business Information Systems	3
MAT 1133 Calculus for Business (core and CBK) ¹	3
WRC 1023 Freshman Composition II (Q) (core)	3
IS 1001 Inside Cyber (major)	1
Credit Hours	16

Second Year

Fall

ACC 2013 Principles of Accounting I (CBK)	3
ECO 2013 Introductory Macroeconomics (CBK)	3
IS 2031 Introduction to Programming Concepts Laboratory (major)	1
IS 2033 Introduction to Programming Concepts (major)	3
MS 1023 Business Statistics with Computer Applications I (CBK)	3
Government-Political science (core)	3
Credit Hours	16

Spring

ACC 2033 Principles of Accounting II (CBK)	3
IS 2041 Intermediate Object-Oriented Programming Laboratory (major)	1
IS 2043 Intermediate Object-Oriented Programming (major)	3
IS 3003 Principles of Information Systems for Management (CBK)	3
MS 3043 Business Statistics with Computer Applications II (CBK)	3
Language, Philosophy & Culture (core)	3
Credit Hours	16

Third Year

Fall

IS 3063 Database Management for Information Systems (major)	3
IS 3413 Introduction to Telecommunications for Business (major)	3
MS 3053 Management Science and Operations Technology (CBK)	3
Creative Arts (core)	3
Government-Political Science (core)	3
Credit Hours	15

Spring

FIN 3013 Principles of Business Finance (CBK)	3
IS 3073 Application Development (major)	3
MGT 3003 Business Communication and Professional Development (CBK)	3
MGT 3013 Introduction to Organization Theory, Behavior, and Management (CBK)	3
Upper-division IS elective (3XXX or 4XXX level) (major)	3
Credit Hours	15

Fourth Year

Fall

GBA 2013 Legal, Social and Ethical Issues in Business (CBK)	3
IS 4053 Systems Analysis and Design (major)	3
MKT 3013 Principles of Marketing (CBK)	3
Upper-division IS elective (3XXX or 4XXX level) (major)	3

American History (core)	3
Credit Hours	15
Spring	
IS 4063 Advanced Topics in Information Systems (major)	3
MGT 4893 Management Strategy (CBK)	3
Upper-division IS elective (3XXX or 4XXX level) (major)	3
Life & Physical Sciences (core)	3
Credit Hours	12
Total Credit Hours	120

¹ College of Business students should take MAT 1133 and ECO 2023 to satisfy both Core Curriculum and CBK requirements.

Bachelor of Business Administration Degree in Cyber Security

The minimum number of semester credit hours for the Bachelor of Business Administration (B.B.A.) degree in Cyber Security 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 B.B.A. degree in Cyber Security must fulfill University Core Curriculum requirements in the same manner as other students.

MAT 1053 and MAT 1133 should be used to satisfy the core requirement in Mathematics (020) and the core requirement in the Component Area Option (090). ECO 2023 should be used to satisfy the core requirement in Social and Behavioral Sciences (080).

MAT 1133 and ECO 2023 may be used to satisfy both Core Curriculum requirements and Common Body of Knowledge (CBK) requirements.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

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	3
ACC 2033	Principles of Accounting II	3
COM 1053	Business and Professional Speech	3
	or COM 1063 Digital Business Communication	
ECO 2013	Introductory Macroeconomics	3
ECO 2023	Introductory Microeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
FIN 3013	Principles of Business Finance	3
GBA 2013	Legal, Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
	or IS 1413 Excel for Business Information Systems	
IS 3003	Principles of Information Systems for Management	3
MAT 1133	Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1133)	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 3003 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3513 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

Note: Students majoring in Accounting, Actuarial Science, Economics, Finance, Management Science, and Statistics and Data Science are strongly encouraged to select IS 1413 Excel for Business Information Systems.

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.

Gateway Course

Students pursuing the B.B.A. degree in Cyber Security must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1133	Calculus for Business	3
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Degree Requirements

A. Major Requirements		15
IS 3033	Operating Systems Security	
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. Support Work in Major		9
9 semester credit hours from the following:		
IS 3043	Secure Mobile App Development	
IS 3073	Application Development	
IS 3433	Introduction to Digital Forensics	
IS 3453	Networking Fundamentals	
IS 3533	Cyber Law and Legal System	
IS 3833	Cyber Operations	
IS 4033	Network Operations	
IS 4223	Emerging Network Technologies	
IS 4463	Web Application Security	
IS 4473	Information Assurance Policy	
IS 4483	Digital Forensic Analysis I	
IS 4513	Industrial Control Systems	
IS 4523	Digital Forensic Analysis II	
IS 4533	Malware Analysis	
IS 4543	Cyber Attack and Defend	
IS 4943	Internship in Cyber Security	
MOT 4023	Essentials of Technology Management	
	or MOT 4143 Introduction to Project Management	
C. Additional Support Work		9
IS 1001	Inside Cyber	
IS 2031	Introduction to Programming Concepts Laboratory	
IS 2033	Introduction to Programming Concepts	
IS 2041	Intermediate Object-Oriented Programming Laboratory	
IS 2043	Intermediate Object-Oriented Programming	
Total Credit Hours		33

Course Sequence Guide for B.B.A. Degree in Cyber Security

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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1053	Mathematics for Business (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
	American History (core)	3
	Life & Physical Sciences (core)	3
Credit Hours		15

Spring

COM 1053 or COM 1063	Business and Professional Speech (CBK) or Digital Business Communication	3
ECO 2023	Introductory Microeconomics (core and CBK) ¹	3
IS 1001	Inside Cyber (major)	1
IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3
MAT 1133	Calculus for Business (core and CBK) ¹	3
WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		16

Second Year

Fall

ACC 2013	Principles of Accounting I (CBK)	3
ECO 2013	Introductory Macroeconomics (CBK)	3
IS 2031	Introduction to Programming Concepts Laboratory (support work)	1
IS 2033	Introduction to Programming Concepts (support work)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
Government-Political Science (core)		3
Credit Hours		16

Spring

ACC 2033	Principles of Accounting II (CBK)	3
IS 2041	Intermediate Object-Oriented Programming Laboratory (support work)	1
IS 2043	Intermediate Object-Oriented Programming (support work)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
IS 3413	Introduction to Telecommunications for Business	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
Credit Hours		16

Third Year

Fall

IS 3033	Operating Systems Security (major)	3
IS 3513	Information Assurance and Security	3
MS 3053	Management Science and Operations Technology (CBK)	3
Government-Political Science (core)		3
Language, Philosophy & Culture (core)		3
Credit Hours		15

Spring

IS 3423	Network Security (major)	3
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MGT 3003	Business Communication and Professional Development (CBK)	3
FIN 3013	Principles of Business Finance	3
IS 3523	Intrusion Detection and Incident Response (major)	3
Life & Physical Sciences (core)		3
Credit Hours		15
Fourth Year		
Fall		
GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
MKT 3013	Principles of Marketing (CBK)	3
Upper-division IS elective (major) (must be approved Cyber Security content)		3
Creative Arts (core)		3
Credit Hours		15
Spring		
MGT 4893	Management Strategy (CBK)	3
Upper-division IS elective (major) (must be approved Cyber Security content)		3
Upper-division IS elective (major) (must be approved Cyber Security content)		3
American History (core)		3
Credit Hours		12
Total Credit Hours		120

¹ College of Business students should take MAT 1133 and ECO 2023 to satisfy both Core Curriculum and CBK requirements.

- Minor in Cyber Security (p. 47)
- Minor in Digital Forensics (p. 47)
- Minor in Information Systems (p. 47)
- Minor in Network and Data Center Management (p. 48)
- Minor in Technology Management for Nonbusiness Majors (p. 48)

Minor in Cyber Security

The Minor in Cyber 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. Required courses		12
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. Elective courses		6
Select two of the following:		
IS 3033	Operating Systems Security	
IS 3043	Secure Mobile App Development	
IS 3433	Introduction to Digital Forensics	
IS 3453	Networking Fundamentals	

IS 3533	Cyber Law and Legal System	
IS 3833	Cyber Operations	
IS 4033	Network Operations	
IS 4143	Wide Area Networks	
IS 4223	Emerging Network Technologies	
IS 4463	Web Application Security	
IS 4473	Information Assurance Policy	
IS 4483	Digital Forensic Analysis I	
IS 4513	Industrial Control Systems	
IS 4523	Digital Forensic Analysis II	
IS 4533	Malware Analysis	
IS 4543	Cyber Attack and Defend	
Total Credit Hours		18

To declare a Minor in Cyber Security, obtain advice, or seek approval of course substitutions for course requirements, students must consult their academic advisor.

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.

A. Required courses		18
IS 3433	Introduction to Digital Forensics	
IS 3513	Information Assurance and Security	
IS 3523	Intrusion Detection and Incident Response	
IS 3533	Cyber Law and Legal System	
IS 4483	Digital Forensic Analysis I	
IS 4523	Digital Forensic Analysis II	
Total Credit Hours		18

To declare a Minor in Digital Forensics, obtain advice, or seek approval of course substitutions for course requirements, students must consult their academic advisor.

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. Required courses		16
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. Elective course		3
Select one of the following:		
MOT 4023	Essentials of Technology Management	
MOT 4143	Introduction to Project Management	

Any IS junior- or senior-level course that counts for the IS major	
Total Credit Hours	19

To declare a Minor in Information Systems, obtain advice, or seek approval of course substitutions for course requirements, students must consult their academic advisor.

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 Cyber Security 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.

A. Required courses	21
IS 3453	Networking Fundamentals
IS 3513	Information Assurance and Security
IS 3523	Intrusion Detection and Incident Response
IS 4033	Network Operations
IS 4213	Data Center Infrastructure Planning
IS 4223	Emerging Network Technologies
MOT 4143	Introduction to Project Management
Total Credit Hours	21

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 their academic advisor.

Minor in Technology Management for Nonbusiness Majors

The Minor in Technology Management for Nonbusiness Majors is only open to nonbusiness majors in the University. The number of required semester credit hours for this minor is 18.

A. Required Courses	15
ACC 2003	Foundations of Accounting
FIN 3003	Survey of Finance
MKT 3013	Principles of Marketing
MOT 4023	Essentials of Technology Management
MOT 4143	Introduction to Project Management
B. Elective course	3
Select one of the following:	
CME 4553	Selected Topics in Business and Technology Management
MGT 3013	Introduction to Organization Theory, Behavior, and Management
MOT 4203	Strategic Management of Technology and Innovation
MOT 4313	Disruptive Innovations
MS 3403	Logistics Management
Total Credit Hours	18

To declare a Minor in Technology Management, obtain advice, and seek approval of course substitutions for course requirements, students must consult with their academic advisor.

Certificate in Pathogenic Outbreak Investigations

This interdisciplinary certificate program is designed for students in biology, information systems and cyber security, computer science and computer engineering disciplines to investigate biological and digital pathogen identification, propagation prediction, and mitigation. The required capstone project reinforces the cross-disciplinary learning fostered by the program and provides real-world practice.

This certificate is open only to biology, information systems and cyber security, computer science, and computer engineering majors. To apply for the Pathogenic Outbreak Investigations certificate, students should consult with the Director of the Office of Undergraduate Research for specific information about certificate requirements and consult with their academic advisors to verify that they have met all University requirements. All courses used to satisfy the requirements of this undergraduate certificate program must be college-level courses taken at UTSA. Students must fulfill all prerequisite requirements for elective courses.

Students pursuing the Certificate in Pathogenic Outbreak Investigations must complete a minimum of 15 semester credit hours:

A. Courses required by all majors:	
Topic: Introduction to Pathogenic Outbreak Investigations:	3
BIO 4953	Special Studies in Biology
or CS 4593	Topics in Computer Science
or IS 3313	Introduction to Pathogenic Outbreak Investigations
Topic: Advanced Research in Pathogenic Outbreak Investigations:	3
BIO 4953	Special Studies in Biology
or CS 4913	Independent Study
or IS 4953	Special Studies in Information Systems
B. Required course according to major:	3
BIO 3713	Microbiology
CS 4593	Topics in Computer Science (Cloud Computing)
IS 4953	Special Studies in Information Systems (Topic: Malware Agent Analysis)
C. Elective courses for each major. Select 6 hours from one of the following groups depending on major:	6
Biology elective options¹	
BIO 3513	Biochemistry
BIO 3743	Bacteriology
BIO 4743	Immunology
BIO 5762	Fundamentals of Immunology for Biotechnology
BIO 6973	Special Problems (Comparative Genomics)
BIO 6973	Special Problems (Microbial Genomics)
Information Systems/Cyber Security elective options	
IS 3523	Intrusion Detection and Incident Response
IS 4463	Web Application Security
IS 4483	Digital Forensic Analysis I
IS 4513	Industrial Control Systems
IS 4523	Digital Forensic Analysis II
Computer Science elective options	
CS 3113	Principles of Cyber Security
CS 3433	Computer and Information Security
CS 3753	Data Science

CS 3873	Computer Networks
CS 4223	Bioinformatics and Big Data
CS 4353	Unix and Network Security
CS 4363	Cryptography
CS 4373	Data Mining
CS 4593	Topics in Computer Science
CS 4633	Simulation Techniques
CS 4643	Cellular and Mobile Technologies
CS 4653	Software and Malware Reverse Engineering
CS 4663	Distributed and Cloud Systems Security
CS 4673	Cyber Operations
CS 4683	Secure Software Development and Analysis
CS 4713	Compiler Construction
CS 4823	Parallel Programming
CS 4833	Embedded Systems
CS 4843	Cloud Computing
CS 4853	Advanced Systems Programming
CS 4863	Distributed Computing and Systems
CS 4933	Internship in Computer Science
CS 4963	Advanced Topics in Systems and Cloud
CS 4973	Advanced Topics in Data Science

Total Credit Hours 15

¹ Undergraduate biology students are permitted to take graduate courses based on need, student background/capability, and instructor consent.

Department of Management

The Department of Management offers an undergraduate degree program with a major in management. Within the management degree, a track in human resource management may also be pursued. The field of management is important to the success of modern organizations. The management courses that are a part of this degree help build understanding of the management process of planning, organizing, leading, and controlling. Courses that focus on these core functions, as well as other skill areas such as ethics and teamwork, position Management graduates for a variety of organizational settings and careers.

To be effective, organizations require engaged and productive employees. The track in human resource management focuses on the effective management of human resources in organizations. Courses in the track focus on key functions such as selection, performance management, and compensation, among others.

Bachelor of Business Administration Degree in Management

The minimum number of semester credit hours required for the Bachelor of Business Administration (B.B.A.) degree in Management 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 B.B.A. degree in Management must fulfill University Core Curriculum requirements in the same manner as other students.

MAT 1053 and MAT 1133 should be used to satisfy the core requirement in Mathematics (020) and the core requirement in the Component Area Option (090). ECO 2023 should be used to satisfy the core requirement in Social and Behavioral Sciences (080).

MAT 1133 and ECO 2023 may be used to satisfy both Core Curriculum requirements and Common Body of Knowledge (CBK) requirements.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

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	3
ACC 2033	Principles of Accounting II	3
COM 1053	Business and Professional Speech	3
or COM 1063	Digital Business Communication	
ECO 2013	Introductory Macroeconomics	3
ECO 2023	Introductory Microeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
FIN 3013	Principles of Business Finance	3
GBA 2013	Legal, Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
or IS 1413	Excel for Business Information Systems	
IS 3003	Principles of Information Systems for Management	3
MAT 1133	Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1133)	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 3003 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3513 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

Note: Students majoring in Accounting, Actuarial Science, Economics, Finance, Management Science, and Statistics and Data Science are strongly encouraged to select IS 1413 Excel for Business Information Systems.

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.

Gateway Course

Students pursuing the B.B.A. degree in Management must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1133	Calculus for Business	3
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Degree Requirements (without track)

A. Major Requirements	15
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 Teams and Avoiding Conflict
B. Support Work in Major	6
6 semester credit hours of upper-division Management electives ¹	
C. Additional Support Work ²	9
Option 1: Complete a Business Competency (9 semester credit hours in a competency)	
Option 2: Complete 9 semester credit hours of upper-division business courses	
D. Free Electives	3
3 semester credit hours of free electives.	
Total Credit Hours	33

¹ The department recommends MGT 4933 Internship in Management and/or ENT 3123 Innovation and Entrepreneurship.
² The department recommends a Business Competency or Immersions.

Degree Requirements for Human Resource Management (HRM) Track

A. Major requirements	15
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 Teams and Avoiding Conflict	
B. Support work in major - HRM Track		12
Select four courses from the following:		
MGT 4413	Performance Management	
MGT 4613	Compensating Employees	
MGT 4623	Staffing Organizations	
MGT 4663	Training and Developing Employees	
MGT 4803	Managing Human Resources for Competitive Advantage	
C. Additional support work		3
3 semester credit hours of upper-division business courses		
D. Free Electives		3
3 semester credit hours of free electives		
Total Credit Hours		33

Students who choose the HRM track may have the designation indicated on their transcript. The track designation will not appear on the diploma.

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 their academic advisor 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

First Year		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1053	Mathematics for Business (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
Credit Hours		15
Spring		
ECO 2023	Introductory Microeconomics (core and CBK) ¹	3
COM 1053 or COM 1063	Business and Professional Speech (CBK) or Digital Business Communication	3
IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3
MAT 1133	Calculus for Business (core and CBK) ¹	3

WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		15

Second Year

Fall

ACC 2013	Principles of Accounting I (CBK)	3
ECO 2013	Introductory Macroeconomics (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
Creative Arts (core)		3
Language, Philosophy & Culture (core)		3
Credit Hours		15

Spring

ACC 2033	Principles of Accounting II (CBK)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
Life & Physical Sciences (core)		3
Government-Political Science (core)		3
Credit Hours		15

Third Year

Fall

GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
MKT 3013	Principles of Marketing (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
Government-Political Science (core)		3
Credit Hours		15

Spring

FIN 3013	Principles of Business Finance (CBK)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
MGT 3023	Understanding People and Organizations (major)	3
MGT 3613	Managing Human Resources (major)	3
Upper-division MGT elective (3XXX or 4XXX level) (support work)		3
Credit Hours		15

Fourth Year

Fall

MGT 4213	Designing Organizations (major)	3
MGT 4923	Leading Organizations and Making Decisions (major)	3
American History (core)		3
Upper-division Business elective (3XXX or 4XXX level) or Business Competency Course (support work)		3

Upper-division Business elective (3XXX or 4XXX level) or Business Competency Course (support work)	3	
Credit Hours		15

Spring

MGT 4893	Management Strategy (CBK)	3
MGT 4943	Managing Teams and Avoiding Conflict (major)	3
Business or non-business elective (free elective)		3
Upper-division Business elective (3XXX or 4XXX level) or Business Competency Course (support work)		3
Upper-division MGT elective (3XXX or 4XXX level) (support work)		3
Credit Hours		15
Total Credit Hours		120

¹ MAT 1133 and ECO 2023 may be used to satisfy both Core Curriculum requirements and Common Body of Knowledge (CBK) requirements.

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

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 their academic advisor 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

First Year

Fall		Credit Hours
AMS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1053	Mathematics for Business (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
Credit Hours		15

Spring

COM 1053 or COM 1063	Business and Professional Speech (CBK) or Digital Business Communication	3
ECO 2023	Introductory Microeconomics (core and CBK) ¹	3
IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3
MAT 1133	Calculus for Business (core and CBK) ¹	3

WRC 1023	Freshman Composition II (Q) (core)	3
	Credit Hours	15
Second Year		
Fall		
ACC 2013	Principles of Accounting I (CBK)	3
ECO 2013	Introductory Macroeconomics (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
	Language, Philosophy & Culture (core)	3
	Creative Arts (core)	3
	Credit Hours	15
Spring		
ACC 2033	Principles of Accounting II (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
	Life & Physical Sciences (core)	3
	Credit Hours	15
Third Year		
Fall		
IS 3003	Principles of Information Systems for Management (CBK)	3
MGT 3023	Understanding People and Organizations (major)	3
MGT 3613	Managing Human Resources (major)	3
MS 3053	Management Science and Operations Technology (CBK)	3
	Government-Political Science (core)	3
	Credit Hours	15
Spring		
GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
FIN 3013	Principles of Business Finance (CBK)	3
MGT 4923	Leading Organizations and Making Decisions (major)	3
	HRM Track Course (support work in major)	3
	Government-Political Science (core)	3
	Credit Hours	15
Fourth Year		
Fall		
MGT 4943	Managing Teams and Avoiding Conflict (major)	3
MKT 3013	Principles of Marketing (CBK)	3
	HRM Track Course (support work in major)	3
	HRM Track Course (support work in major)	3
	American History (core)	3
	Credit Hours	15

Spring		
MGT 4213	Designing Organizations (major)	3
MGT 4893	Management Strategy (CBK)	3
	HRM Track Course (support work in major)	3
	Upper division business course (support)	3
	Business or non-business elective (free elective)	3
	Credit Hours	15
	Total Credit Hours	120

¹ MAT 1133 and ECO 2023 may be used to satisfy both Core Curriculum requirements and Common Body of Knowledge (CBK) requirements.

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 (B.B.A.) degree in Management Science, a B.B.A. degree in Actuarial Science, and a Bachelor of Science (B.S.) degree in Statistics and Data Science. The department also offers minors in Actuarial Science, Adaptive Decision Models for Business, Statistics, and Management Science, which are open to all majors in the University. In addition, certificates are offered in Business Analytics, and Operations and Supply Chain Management.

- B.B.A. degree in Actuarial Science (p. 53)
- B.B.A. degree in Management Science (p. 54)
- B.S. degree in Statistics and Data Science (p. 57)

Bachelor of Business Administration Degree in Actuarial Science

Actuarial Science is a discipline that uses mathematics and statistical models to assess and manage risk and to solve emerging financial and social problems. Graduates' unique blend of analytical and business skills are especially valuable in the insurance and financial services industry. They apply their skills to calculations in life, health, social, and casualty insurance, annuities and pensions. Traditionally, they have been involved in developing probability tables for natural disasters, unemployment, etc. 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 (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.B.A. degree in Actuarial Science must fulfill University Core Curriculum requirements. The two courses listed below satisfy both degree requirements and Core Curriculum requirements.

MAT 1214 should be used to satisfy the core requirement in Mathematics (020). ECO 2023 should be used to satisfy the core requirement in Social and Behavioral Sciences (080).

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

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	3
ACC 2033	Principles of Accounting II	3
COM 1053	Business and Professional Speech	3
	or COM 1063 Digital Business Communication	
ECO 2013	Introductory Macroeconomics	3

ECO 2023	Introductory Microeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
FIN 3013	Principles of Business Finance	3
GBA 2013	Legal, Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
	or IS 1413 Excel for Business Information Systems	
IS 3003	Principles of Information Systems for Management	3
MAT 1133	Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1133)	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 3003 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3513 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

Note: Students majoring in Accounting, Actuarial Science, Economics, Finance, Management Science, and Statistics and Data Science are strongly encouraged to select IS 1413 Excel for Business Information Systems.

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. Major Requirements	20
MAT 1224	Calculus II
MAT 2214	Calculus III
STA 3523	Mathematical Statistics
STA 4133	Introduction to Programming and Data Management in SAS
STA 4713	Applied Regression Analysis
STA 4753	Time-Series Analysis
B. Support Work in Major	12
Select four courses from the following:	
FIN 4523	Introduction to Risk Management
FIN 4813	Property-Liability Insurance Finance
FIN 4823	Life and Health Insurance Finance
MS 3073	Business Analytics
STA 4233	Introduction to Programming and Data Management in R
STA 4643	Introduction to Stochastic Processes
STA 4933	Internship in Statistics
STA 4963	Actuarial Science Examination Preparation
Total Credit Hours	32

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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3
MAT 1214	Calculus I (core and CBK) ¹	4
WRC 1013	Freshman Composition I (Q) (core)	3
American History (core)		3
Credit Hours		16

Spring

COM 1053 or COM 1063	Business and Professional Speech (CBK) or Digital Business Communication	3
ECO 2023	Introductory Microeconomics (core and CBK) ¹	3
MAT 1224	Calculus II (major)	4
STA 3003	Applied Statistics (CBK)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		16

Second Year

Fall		Credit Hours
ACC 2013	Principles of Accounting I (CBK)	3
ECO 2013	Introductory Macroeconomics (CBK)	3
MAT 2214	Calculus III (major)	4
STA 3513	Probability and Statistics (CBK)	3
Language, Philosophy & Culture (core)		3
Credit Hours		16

Spring

ACC 2033	Principles of Accounting II (CBK)	3
FIN 3013	Principles of Business Finance (CBK)	3
STA 3523	Mathematical Statistics (major)	3
American History (core)		3
Life & Physical Sciences (core)		3
Credit Hours		15

Third Year

Fall

MGT 3003	Business Communication and Professional Development (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
STA 4133	Introduction to Programming and Data Management in SAS (major)	3
STA 4713	Applied Regression Analysis (major)	3
Government-Political Science (core)		3
Credit Hours		15

Spring

IS 3003	Principles of Information Systems for Management (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
MKT 3013	Principles of Marketing (CBK)	3
STA 4753	Time-Series Analysis (major)	3
Upper-division FIN or STA Directed Elective (major)		3
Credit Hours		15

Fourth Year

Fall

GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
Upper-division FIN or STA Directed Elective (major)		3
Upper-division FIN or STA Directed Elective (major)		3
Component Area Option (core)		3
Government-Political Science (core)		3
Credit Hours		15

Spring

MGT 4893	Management Strategy (CBK)	3
Upper-division FIN or STA Directed Elective (major)		3
Creative Arts (core)		3
Life & Physical Sciences (core)		3
Credit Hours		12
Total Credit Hours		120

¹ College of Business students should take MAT 1214 and ECO 2023 to satisfy both Core Curriculum and CBK requirements.

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 (B.B.A.) 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 B.B.A. degree in Management Science must fulfill University Core Curriculum Requirements in the same manner as other students.

MAT 1053 and MAT 1133 should be used to satisfy the core requirement in Mathematics (020) and the core requirement in the Component Area Option (090). ECO 2023 should be used to satisfy the core requirement in Social and Behavioral Sciences (080).

MAT 1133 and ECO 2023 may be used to satisfy both Core Curriculum requirements and Common Body of Knowledge (CBK) requirements.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

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	3
ACC 2033	Principles of Accounting II	3

COM 1053	Business and Professional Speech	3
or COM 1063	Digital Business Communication	
ECO 2013	Introductory Macroeconomics	3
ECO 2023	Introductory Microeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
FIN 3013	Principles of Business Finance	3
GBA 2013	Legal, Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
or IS 1413	Excel for Business Information Systems	
IS 3003	Principles of Information Systems for Management	3
MAT 1133	Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1133)	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 3003 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3513 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

Note: Students majoring in Accounting, Actuarial Science, Economics, Finance, Management Science, and Statistics and Data Science are strongly encouraged to select IS 1413 Excel for Business Information Systems.

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.

Gateway Course

Students pursuing the B.B.A. degree in Management Science must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1133	Calculus for Business	3
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Degree Requirements (without track)

A. Major Requirements 9

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

B. Support Work in Major 15

Select five courses from the following: ¹

FIN 4523	Introduction to Risk Management	
FIN 4873	Computer Modeling of Financial Applications	

MKT 3083	Marketing Research
MS 3063	Decision Support Systems
MS 3073	Business Analytics
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	Predictive Operational Analytics
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 4233	Introduction to Programming and Data Management in R
STA 4753	Time-Series Analysis
STA 4803	Statistical Quality Control

C. Additional Support Work 9

Select 9 semester credit hours of upper-division coursework.

Option 1: Complete 9 semester credit hours of upper division business electives.

Option 2: Complete a business competency (9 semester credit hours in a competency)

Option 3: Complete 9 semester credit hours of free electives.

Total Credit Hours 33

¹ To substitute another course for one of the above electives, a student should submit a petition to their academic advisor and receive approval from the chair of the Management Science and Statistics department or department designee before registering for the course.

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 their academic advisor 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.

For options in designing and selecting career tracks and/or certificates, contact the chair of the Management Science and Statistics department or department designee.

Recommended Four-Year Academic Plan

First Year		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3
MAT 1053	Mathematics for Business (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History (core)		3
Credit Hours		15

Spring		Credit Hours
COM 1053 or COM 1063	Business and Professional Speech (CBK) or Digital Business Communication	3
ECO 2023	Introductory Microeconomics (core and CBK) ¹	3
MAT 1133	Calculus for Business (core and CBK) ¹	3
WRC 1023	Freshman Composition II (Q) (core)	3
American History (core)		3
Credit Hours		15

Second Year		Credit Hours
Fall		
ACC 2013	Principles of Accounting I (CBK)	3
ECO 2013	Introductory Macroeconomics (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
Government-Political Science (core)		3
Life & Physical Sciences (core)		3
Credit Hours		15

Spring		Credit Hours
ACC 2033	Principles of Accounting II (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
Government-Political Science (core)		3
Language, Philosophy & Culture (core)		3
Credit Hours		15

Third Year		Credit Hours
Fall		
MGT 3003	Business Communication and Professional Development (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
MS 4343	Production/Operations Management (major)	3

Upper-division Business elective (major)		3
Credit Hours		15
Spring		
FIN 3013	Principles of Business Finance (CBK)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
MS 3403	Logistics Management (major)	3
MS 4333	Project Management (major)	3
Upper-division Business elective (major)		3
Credit Hours		15

Fourth Year

Fall		
MKT 3013	Principles of Marketing (CBK)	3
Upper division business elective, Business Competency course, or free elective (support work)		3
Upper-division business elective (major)		3
Upper-division business elective (major)		3
Creative Arts (core)		3
Credit Hours		15

Spring		
MGT 4893	Management Strategy (CBK)	3
Upper-division business elective (major)		3
Upper-division business elective, Business Competency course, or free elective (support work)		3
Upper-division business elective, Business Competency course, or free elective (support work)		3
Life & Physical Sciences (core)		3
Credit Hours		15
Total Credit Hours		120

¹ College of Business students should take MAT 1133 and ECO 2023 to satisfy both Core Curriculum and CBK requirements.

Degree Requirements for Business Analytics (BSA) Track

A. Major Requirements		9
MS 3403	Logistics Management	
MS 4333	Project Management	
MS 4343	Production/Operations Management	
B. Support Work in Major		15
Select five courses from the following:		
MS 4313	Six Sigma and Lean Operations	
MS 4323	Simulation Applications in Business	
MS 4383	Predictive Operational Analytics	
MS 4913	Independent Study in Management Science	
MS 4933	Internship in Management Science	
MS 4953	Special Studies in Management Science	
STA 3333	Introduction to Data Science and Analytics	
STA 4133	Introduction to Programming and Data Management in SAS	
STA 4143	Data Mining	

STA 4233	Introduction to Programming and Data Management in R	
STA 4753	Time-Series Analysis	
C. Additional Support Work		9
MS 3063	Decision Support Systems	
MS 3073	Business Analytics	
MS 3313	Business Applications of Statistics	
Total Credit Hours		33

Degree Requirements for Operations and Supply Chain Management (OSCM) Track

A. Major Requirements		9
MS 3403	Logistics Management	
MS 4333	Project Management	
MS 4343	Production/Operations Management	
B. Support Work in Major		15
Select five courses from the following:		
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	Predictive Operational Analytics	
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 4753	Time-Series Analysis	
C. Additional Support Work		9
Select 9 semester credit hours of upper-division coursework		
Option 1: Complete 9 semester credit hours of upper division business electives.		
Option 2: Complete a business competency (9 semester credit hours in a competency).		
Option 3: Complete 9 semester credit hours of free electives.		
Total Credit Hours		33

Bachelor of Science Degree in Statistics and Data Science

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 (B.S.) degree in Statistics and Data Science 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 and Data Science is 120, at least 39 of which must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. degree in Statistics and Data Science must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements.

MAT 1214 should be used to satisfy the core requirement in Mathematics (020). ECO 2023 should be used to satisfy the core requirement in Social and Behavioral Sciences (080).

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. Required courses in the computational and mathematical sciences 15

MAT 1214	Calculus I
MAT 1224	Calculus II
MAT 2214	Calculus III
MAT 2233	Linear Algebra

B. Courses required for the major 39

1. Required Statistics courses:

STA 3003	Applied Statistics
STA 3013	Multivariate Analysis for the Life and Social Sciences
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	Introduction to Programming and Data Management in R
STA 4713	Applied Regression Analysis
STA 4723	Introduction to the Design of Experiments

2. Select four of the following:

MS 3073	Business Analytics
MS 4363	Quality Management and Control
STA 4143	Data Mining
STA 4643	Introduction to Stochastic Processes
STA 4753	Time-Series Analysis
STA 4903	Applied Survival Analysis
STA 4933	Internship in Statistics

C. Electives in disciplines where statistics is actively applied and practiced ¹ 18

1. Specialization in Actuarial Science:

ACC 2013	Principles of Accounting I
ECO 2013	Introductory Macroeconomics
ECO 2023	Introductory Microeconomics
FIN 3013	Principles of Business Finance
FIN 3023	Intermediate Corporate Finance
	or FIN 4873 Computer Modeling of Financial Applications
STA 4963	Actuarial Science Examination Preparation

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 Equity for Schooling
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

6. Specialization in Psychology:

PSY 1013	Introduction to Psychology
PSY 2503	Developmental Psychology
PSY 3403	Experimental Psychology

PSY 3413	Experimental Projects and Laboratory	
Two additional psychology courses at the 3000 or 4000 level		
7. Specialization in Social Sciences:		
SOC 1013	Introduction to Sociology	
SOC 3223	Population Dynamics and Demographic Techniques	
SOC 3323	Introduction to Social Research	
SOC 3373	Qualitative Research Methods	
SOC 3393	Quantitative Research Methods	
One additional sociology course at the 3000 or 4000 level		
D. Lower-division or upper-division business or non-business electives		6
Select 6 semester credit hours of lower-division or upper-division business or non-business electives.		
Total Credit Hours		78

¹ Nine (9) 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, psychology, and social sciences. Other specialization plans and the relevant courses may be submitted for approval to the designated statistics faculty member.

Course Sequence Guide for B.S. Degree in Statistics and Data 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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1214	Calculus I (core and major) ¹	4
WRC 1013	Freshman Composition I (Q) (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
Credit Hours		16
Spring		
MAT 1224	Calculus II (major)	4
STA 3003	Applied Statistics (major) ²	3
WRC 1023	Freshman Composition II (Q) (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
Credit Hours		16

Second Year

Fall		
MAT 2214	Calculus III (major)	4

STA 3313	Experiments and Sampling (major)	3
STA 3513	Probability and Statistics (major)	3
Creative Arts (core)		3
Government-Political Science (core)		3
Credit Hours		16

Spring

ECO 2023	Introductory Microeconomics (core)	3
MAT 2233	Linear Algebra (major)	3
STA 3013	Multivariate Analysis for the Life and Social Sciences (major)	3
STA 3523	Mathematical Statistics (major)	3
Government-Political Science (core)		3
Credit Hours		15

Third Year

Fall

STA 4133	Introduction to Programming and Data Management in SAS	3
Course option in major		3
Course option in specialization track (support work)		3
Course option in specialization track (support work)		3
Language, Philosophy & Culture (core)		3
Credit Hours		15

Spring

STA 4233	Introduction to Programming and Data Management in R (major)	3
Course option in major		3
Course option in specialization track (support work)		3
Course option in specialization track (support work)		3
Component Area Option (core)		3
Credit Hours		15

Fourth Year

Fall

STA 4713	Applied Regression Analysis (major)	3
Course option in major		3
Course option in specialization track (support work)		3
Business or non-business elective (support work)		3
Free elective		3
Credit Hours		15

Spring

STA 4723	Introduction to the Design of Experiments (major)	3
Course option in major		3
Course option in specialization track (support work)		3
Business or non-business elective (support work)		3
Credit Hours		12
Total Credit Hours		120

¹ Students must take Math Placement Test to register for MAT 1214. Beginning math course will be determined by Math Placement Test scores.

² STA 3003 is prerequisite for courses listed under Part B of Degree Requirements.

- Minor in Actuarial Science (p. 60)
- Minor in Adaptive Decision Models for Business (p. 60)
- Minor in Management Science (p. 60)
- Minor in Statistics (p. 61)

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. Required Business courses	6
ECO 2013	Introductory Macroeconomics
ECO 2023	Introductory Microeconomics
B. Select four of the following courses	12
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
STA 4933	Internship in Statistics
Total Credit Hours	18

To declare a Minor in Actuarial Science, obtain advice, and seek approval of substitutions for course requirements, students must consult with their academic advisor.

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. Course option	3
Select one of the following:	
CS 3333	Mathematical Foundations of Computer Science
ME 3113	Measurements and Instrumentation
MS 3053	Management Science and Operations Technology
B. Additional courses	6
ACC 2013	Principles of Accounting I
FIN 3003	Survey of Finance
	or FIN 3013 Principles of Business Finance
C. Models	6
Select 6 semester credit hours of the following:	
Analytical Models	
MS 3063	Decision Support Systems
MS 3073	Business Analytics
MS 3313	Business Applications of Statistics
MS 4323	Simulation Applications in Business
MS 4333	Project Management
MS 4383	Predictive Operational Analytics
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. Upper-division electives 3

Select 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.

Total Credit Hours **18**

To declare a minor in Adaptive Decision Models for Business and seek approval of substitutions for course requirements, students must consult with their academic advisor or the designated management science 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. Required courses	6
MS 3053	Management Science and Operations Technology
MS 4343	Production/Operations Management
B. Select four of the following courses	12
ECO 3123	Introduction to Econometrics and Business Forecasting
FIN 4523	Introduction to Risk Management
FIN 4873	Computer Modeling of Financial Applications
MKT 3083	Marketing Research
MS 3063	Decision Support Systems
MS 3073	Business Analytics
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	Predictive Operational Analytics
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
Total Credit Hours	18

To declare a Minor in Management Science, obtain advice, and seek approval of substitutions for course requirements, students must consult with their academic advisor.

Minor in Statistics

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

A. Sequence options 6

Select two courses from the following:

1. Option 1

STA 1403	Probability and Statistics for the Biosciences
STA 3003	Applied Statistics

2. Option 2

POL 2703	Quantitative Methods in Political Science
PSY 2073	Statistics for Psychology

3. Option 3

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

4. Option 4

STA 3003	Applied Statistics
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and one of the following:

STA 2303	Applied Probability and Statistics for Engineers
STA 3513	Probability and Statistics

B. Select four of the following courses 12

MS 3073	Business Analytics
STA 3013	Multivariate Analysis for the Life and Social Sciences
STA 3313	Experiments and Sampling
STA 3523	Mathematical Statistics
STA 4133	Introduction to Programming and Data Management in SAS
STA 4143	Data Mining
STA 4233	Introduction to Programming and Data Management in R
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 4933	Internship in Statistics
STA 4953	Special Studies in Statistics

Total Credit Hours 18

To declare a Minor in Statistics, obtain advice, and seek approval of substitutions for course requirements, students must consult with their academic advisor or the designated statistics faculty member.

- Certificate in Business Analytics (p. 61)
- Certificate in Operations and Supply Chain Management (p. 61)

Certificate in Business Analytics

The Business Analytics certificate is designed to prepare business students with a foundational knowledge in analytics. It certifies to employers that students awarded the certificate have completed coursework that will help them understand different forms of analytics (descriptive, predictive, and prescriptive) and the methods used in each. Moreover, this certificate program will help students learn cutting-edge

techniques to sift through large volumes of data and understand how analytics can help improve decisions throughout an organization.

To earn a Business Analytics certificate, students must earn 15 semester credit hours as follows:

A. Required courses 9

MS 3073	Business Analytics
STA 4133	Introduction to Programming and Data Management in SAS
STA 4233	Introduction to Programming and Data Management in R

B. Select one of the following 3

MS 3063	Decision Support Systems
STA 4143	Data Mining

C. Select one of the following 3

MS 3313	Business Applications of Statistics
STA 3013	Multivariate Analysis for the Life and Social Sciences

Total Credit Hours 15

To apply for the Business Analytics Certificate, students should consult with Department of Management Science and Statistics for specific information about certificate requirements and consult with their academic advisors to verify that they have met all university requirements as specified in chapter 2 (p. 17) of this catalog. All courses used to satisfy the requirements of this undergraduate certificate program must be college-level courses taken at UTSA.

Certificate in Operations and Supply Chain Management

This certificate is designed to prepare business students with a foundational knowledge in operations and supply chain management (OSCM). It certifies to employers that students awarded the certificate have completed coursework that will help them understand a myriad of issues, challenges, problems, and decision tools that relate to the internal and external flow of materials and requisite knowledge. Production/operations management, logistics management, and procurement topics are included to resolve the myriad of complex problems facing organizations. Moreover, this certificate program will help students learn cutting edge techniques and best practices to leverage their operations and supply chain complexities to achieve competitive advantage.

To earn an Operations and Supply Chain Management Certificate (OSCM), students must earn 15 semester credit hours as follows:

A. Required courses 6

MS 3403	Logistics Management
MS 4543	Supply Chain Management

B. Select one of the following 3

MS 4343	Production/Operations Management
MS 4353	Service Operations Management

C. Select one of the following 3

MS 4313	Six Sigma and Lean Operations
MS 4363	Quality Management and Control

D. Select one of the following 3

MS 3413	Purchasing and Inventory Management
MS 4333	Project Management

MS 4383	Predictive Operational Analytics
<hr/>	
Total Credit Hours	15

To apply for the Operations and Supply Chain Management Certificate, students should consult with Department of Management Science and Statistics for specific information about certificate requirements and consult with their academic advisors to verify that they have met all university requirements as specified in chapter 2 (p. 17) of this catalog. All courses used to satisfy the requirements of this undergraduate certificate program must be college-level courses taken at UTSA.

Department of Marketing

The Department of Marketing offers a Bachelor of Business Administration (B.B.A.) degree in Marketing. Within the marketing degree, a track in Sport, Event and Tourism Management may also be pursued.

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 sport, event, and tourism management track 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.

Bachelor of Business Administration Degree in Marketing

The minimum number of semester credit hours required for Bachelor of Business Administration (B.B.A.) degree in Marketing 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 B.B.A. degree in Marketing must fulfill University Core Curriculum requirements in the same manner as other students.

MAT 1053 and MAT 1133 should be used to satisfy the core requirement in Mathematics (020) and the core requirement in the Component Area Option (090). ECO 2023 should be used to satisfy the core requirement in Social and Behavioral Sciences (080).

MAT 1133 and ECO 2023 may be used to satisfy both Core Curriculum requirements and Common Body of Knowledge (CBK) requirements.

All degrees in the College of Business require 120 hours. If students elect to take a course that satisfies both a Core and COB requirement, students may need to take an additional course to meet the 120 hours.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
<hr/>	
Total Credit Hours	42

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	3
ACC 2033	Principles of Accounting II	3
COM 1053	Business and Professional Speech	3
	or COM 1063 Digital Business Communication	
ECO 2013	Introductory Macroeconomics	3
ECO 2023	Introductory Microeconomics (satisfies Social and Behavioral Sciences Core Curriculum requirement)	3
FIN 3013	Principles of Business Finance	3
GBA 2013	Legal, Social and Ethical Issues in Business	3
IS 1403	Business Information Systems Fluency	3
	or IS 1413 Excel for Business Information Systems	
IS 3003	Principles of Information Systems for Management	3
MAT 1133	Calculus for Business (satisfies Mathematics Core Curriculum requirement, Actuarial Science majors must take MAT 1214 in lieu of MAT 1133)	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 3003 in lieu of MS 1023)	3
MS 3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3513 in lieu of MS 3043)	3
MS 3053	Management Science and Operations Technology	3

Note: Students majoring in Accounting, Actuarial Science, Economics, Finance, Management Science, and Statistics and Data Science are strongly encouraged to select IS 1413 Excel for Business Information Systems.

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.

Gateway Course

Students pursuing the B.B.A. degree in Marketing must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1133	Calculus for Business	3
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Degree Requirements (without track)

A. Major Requirements		15
MKT 3063	Personal Selling	
MKT 3083	Marketing Research	
MKT 4073	International Marketing	
MKT 4093	Consumer Behavior	
MKT 4893	Marketing Capstone	
B. Support work in Major		6
6 semester hours of upper-division Marketing electives ¹		
C. Additional Support Work		9
Option 1: Complete a Business Competency (9 semester credit hours in a competency)		
Option 2: Complete 9 semester credit hours of upper-division business courses		
D. Free Electives		3
3 semester credit hours of free electives		
Total Credit Hours		33

¹ The Marketing department recommends MKT 4933 Internship in Marketing

Degree Requirements for Sport, Event and Tourism Management (SET) Track

A. Major requirements		15
MKT 3063	Personal Selling	
MKT 4073	International Marketing	
MKT 3083	Marketing Research	
MKT 4093	Consumer Behavior	
MKT 4893	Marketing Capstone	
B. Support work in major: SET Track		12
Select four of the following courses:		
MKT 4143	Sports Marketing	
SET 3283	Sport and Event Media Relations	
SET 3333	Event Management	
SET 4543	Destination Marketing	
SET 4813	Special Topics in Sport, Event and Tourism Management	
SET 4943	Internship in Sport, Event and Tourism Management	
C. Additional Support Work		6

6 semester credit hours of upper-division business courses	
Total Credit Hours	33

Students who choose the SET track may have the designation indicated on their transcripts. The track designation will not appear on the diploma.

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 their academic advisor 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

First Year		
Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1053	Mathematics for Business (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
Credit Hours		15
Spring		
COM 1053 or COM 1063	Business and Professional Speech (CBK) or Digital Business Communication	3
ECO 2023	Introductory Microeconomics (core and CBK) ¹	3
IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3
MAT 1133	Calculus for Business (core and CBK) ¹	3
WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		15
Second Year		
Fall		
ACC 2013	Principles of Accounting I (CBK)	3
ECO 2013	Introductory Macroeconomics (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
Creative Arts (core)		3
Language, Philosophy & Culture (core)		3
Credit Hours		15
Spring		
ACC 2033	Principles of Accounting II (CBK)	3

MGT 3003	Business Communication and Professional Development (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
Government-Political Science (core)		3
Life & Physical Sciences (core)		3
Credit Hours		15
Third Year		
Fall		
GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
MKT 3013	Principles of Marketing (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
Government-Political Science (core)		3
Credit Hours		15
Spring		
FIN 3013	Principles of Business Finance (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
MKT 3063	Personal Selling (major)	3
MKT 3083	Marketing Research (major)	3
MKT 4093	Consumer Behavior (major)	3
Credit Hours		15
Fourth Year		
Fall		
MKT 4073	International Marketing (major)	3
Business or non-business elective (free elective)		3
American History (core)		3
Upper-division MKT elective (3XXX or 4XXX level) (major)		3
Upper-division business elective or competency course (support work)		3
Credit Hours		15
Spring		
MGT 4893	Management Strategy (CBK)	3
MKT 4893	Marketing Capstone (major)	3
Upper-division business elective or competency course (support work)		3
Upper-division business elective or competency course (support work)		3
Upper-division MKT elective (3XXX or 4XXX level) (major)		3
Credit Hours		15
Total Credit Hours		120

¹ College of Business students should take MAT 1133 and ECO 2023 to satisfy both Core Curriculum and CBK requirements.

Course Sequence Guide for B.B.A. Degree in Marketing with a Sport, Event and Tourism Management Track

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 their academic advisor 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

First Year		
Fall		
		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1053	Mathematics for Business (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
Credit Hours		15
Spring		
COM 1053 or COM 1063	Business and Professional Speech (CBK) or Digital Business Communication	3
ECO 2023	Introductory Microeconomics (core and CBK) ¹	3
IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3
MAT 1133	Calculus for Business (core and CBK) ¹	3
WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		15
Second Year		
Fall		
ACC 2013	Principles of Accounting I (CBK)	3
ECO 2013	Introductory Macroeconomics (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
Creative Arts (core)		3
Language, Philosophy & Culture (core)		3
Credit Hours		15
Spring		
ACC 2033	Principles of Accounting II (CBK)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MKT 3013	Principles of Marketing (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3

Government-Political Science (core)		3
Credit Hours		15
Third Year		
Fall		
GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
MKT 3083	Marketing Research (major)	3
MS 3053	Management Science and Operations Technology (CBK)	3
SET Track Course (support work in major)		3
Government-Political Science (core)		3
Credit Hours		15
Spring		
FIN 3013	Principles of Business Finance (CBK)	3
MKT 3063	Personal Selling (major)	3
MKT 4093	Consumer Behavior (major)	3
SET Track Course (support work in major)		3
Life & Physical Sciences (core)		3
Credit Hours		15
Fourth Year		
Fall		
IS 3003	Principles of Information Systems for Management (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
MKT 4073	International Marketing (major)	3
SET Track Course (support work in major)		3
Upper-division business elective (support work)		3
Credit Hours		15
Spring		
MGT 4893	Management Strategy (CBK)	3
MKT 4893	Marketing Capstone (major)	3
American History (core)		3
SET Track Course (support work in major)		3
Upper-division business elective (support work)		3
Credit Hours		15
Total Credit Hours		120

¹ College of Business students should take MAT 1133 and ECO 2023 to satisfy both Core Curriculum and CBK requirements.

- Minor in Marketing (p. 65)
- Minor in Sport Management (p. 65)

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. Required coursework	3
MKT 3013 Principles of Marketing	
B. Additional courses	15

Select five of 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	
Total Credit Hours		18

To declare a Minor in Marketing, obtain advice, and seek approval of substitutions for course requirements, students must consult their academic advisor.

Minor in Sport Management

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

A. Required Courses	9	
MGT 3013	Introduction to Organization Theory, Behavior, and Management	
SET 3233	Sport Management	
SET 3283	Sport and Event Media Relations	
B. Elective Courses	9	
Select three courses from the list below:		
MKT 4143	Sports Marketing	
or MS 4353	Service Operations Management	
SET 3543	Sports Economics	
SET 4233	Sport Facility and Event Management	
SET 4813	Special Topics in Sport, Event and Tourism Management ¹	
SET 4943	Internship in Sport, Event and Tourism Management ²	
Total Credit Hours		18

¹ Must be related to sports.

² Must be related to sports, but can be cross-listed with other majors.

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; Interdisciplinary Learning and Teaching; and Kinesiology, Health, and Nutrition.

Eight undergraduate degrees are offered within the College: the Bachelor of Arts (B.A.) in Interdisciplinary Studies; the B.A. in Mexican American Studies; the B.A. in Multicultural Early Childhood Development; the B.A. in Women's Studies; the Bachelor of Science (B.S.) in Health; the B.S. in Kinesiology; the B.S. in Public Health with a Health Promotion and Behavioral Science concentration; and the B.S. in Nutrition and Dietetics. Minors are offered in African American Studies, Bicultural Studies, English as a Second Language, Community Health, Wellness, and Women's Studies. A certificate in Athletic Coaching is also offered. For more information related to the College, consult the webpage: <http://education.utsa.edu>.

Advising and Certification Center

Academic Advising

Academic advising services are provided for students admitted to or currently enrolled at UTSA based on their academic pathways.

Health, Kinesiology (except the Physical Education concentration), Nutrition and Dietetics, and Public Health majors are advised in the Life and Health Sciences Advising Center.

Mexican American Studies majors are advised in the Downtown Advising Center.

Interdisciplinary Studies, Multicultural Early Childhood Development, Kinesiology-Physical Education concentration, and Women's Studies majors are advised in the Interdisciplinary Education Advising Center.

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 Interdisciplinary Education Advising and Certification Center.

Criminal History Policy and Acknowledgement

The College of Education and Human Development (COEHD) prepares educators and professionals for fields which require fieldwork, internship, practicum, service-learning and/or clinical teaching. Placements occur in educational, clinical, health care facilities, hospital, and/or medical settings which require a criminal background check. The University of Texas at San Antonio is required to inform students of the requirements set forth by the Texas Occupation Code, Chapter 53, Sections 53.001 through 53.105 (<http://www.texas-statutes.com/occupations-code/chapter-53-consequences-of-criminal-conviction>).

All COEHD prospective students in a licensure or certification program are required to acknowledge that they have been made aware of these requirements and that they have read the COEHD Criminal History Policy (http://education.utsa.edu/certification_program/criminal_history_policy). For more information and for completing the acknowledgement form, please visit the Office of Professional Preparation, Assessment, and Accreditation in the College of Education and Human Development.

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, and people of African descent globally. Literature and research methods drawn from several disciplines enable students to enhance their understanding of African Americans' unique social circumstances, contributions, and heritage. The mission of

the African American Studies program at UTSA is to promote academic and professional excellence. We achieve this goal by enhancing cultural competency skills, enriching the theoretical knowledge base and practical skills set of students related to working with diverse populations, and advancing critical thinking skills related to multiple facets of the African American experience and the African Diaspora.

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. Required courses:

AAS 2013	Introduction to African American Studies	3
AAS 2113	African American Culture, Leadership and Social Issues	3

B. Two African American Studies courses selected from the following: 6

AAS 3013	African American Cultural Experiences	
AAS 3113	African American Studies Research Seminar	
AAS 3123	Civil Rights Movement & African American Education	
AAS 3133	African Americans in Higher Education	
AAS 4013	Topics in African American Studies	

C. Two courses selected from the following: 6

AMS 3343	Studies in Race and Ethnicity	
BBL 2033	Multiculturalism in the Southwest	
BBL 3403	Cultural and Linguistic Equity for Schooling	
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	
ENG 2383	Multiethnic Literatures of the United States	
ENG 3613	African American Literature	
HIS 3113	North American Indian Histories	
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	
MUS 2663	History and Styles of Jazz	
PAL 3113	Minorities and the Law	
POL 1213	Civil Rights in Texas and America (when the topic is Civil Rights)	
POL 3203	African American Political Thought	
POL 3303	Race, Ethnicity and Public Policy	
SOC 4053	Health Care System	

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	

Total Credit Hours 18

To declare a Minor in African American Studies, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

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 Core Subjects Certificate, the Grades 4–8 Bilingual Core Subjects Certificate, the Early Childhood–Grade 6 ESL Core Subjects 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.

Criminal History Policy and Acknowledgement

The College of Education and Human Development (COEHD) prepares educators and professionals for fields which require fieldwork, internship, practicum, service-learning and/or clinical teaching. Placements occur in educational, clinical, health care facilities, hospital, and/or medical settings which require a criminal background check. The University of Texas at San Antonio is required to inform students of the requirements set forth by the Texas Occupation Code, Chapter 53, Sections 53.001

through 53.105 (<http://www.texas-statutes.com/occupations-code/chapter-53-consequences-of-criminal-conviction>).

All COEHD prospective students in a licensure or certification program are required to acknowledge that they have been made aware of these requirements and that they have read the COEHD Criminal History Policy (http://education.utsa.edu/certification_program/criminal_history_policy). For more information and for completing the acknowledgement form, please visit the Office of Professional Preparation, Assessment, and Accreditation in the College of Education and Human Development.

- B.A. degree in Mexican American Studies (p. 68)
- Bilingual Education and ESL Teacher Certification Concentrations
 - B.A. degree in Interdisciplinary Studies (Early Childhood–Grade 6 Bilingual Core Subjects Certification Concentration) (p. 71)
 - B.A. degree in Interdisciplinary Studies (Grades 4–8 Bilingual Core Subjects Certification Concentration) (p. 73)
 - B.A. degree in Interdisciplinary Studies (Early Childhood–Grade 6 ESL Core Subjects Certification Concentration) (p. 75)
 - B.A. degree in Interdisciplinary Studies (Grades 4–8 ESL Certification Concentration) (p. 77)
 - English as a Second Language (ESL) Supplemental Teacher Certification (p. 79)

Bachelor of Arts Degree in Mexican American Studies

The Bachelor of Arts (B.A.) 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 nine concentrations: Anthropology; Communities, Families, and Children; History; Interdisciplinary Studies; 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.

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, English, History, Interdisciplinary Studies, Political Science, Sociology, Spanish).

Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.A. 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.

ANT 2033 is recommended to satisfy a core requirement in Life and Physical Sciences. ENG 2213, ENG 2383, or ENG 2423 is recommended to satisfy a core requirement in Language, Philosophy and Culture.

MAS 2023 is recommended to satisfy the core requirement in Creative Arts. BBL 2003, BBL 2243, or SOC 2013 is recommended to satisfy the core requirement in Social and Behavioral Sciences. ANT 2053 or ANT 2063 is recommended to satisfy the core requirement under the Component Area Option.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. Mexican American studies

1. Required courses:

BBL 2003	Language, Culture, and Society	3
or BBL 3133	Language Development in Bilinguals	
ENG 3513	Mexican American Literature	3
or ENG 4613	Topics in Mexican American Literature	
MAS 2013	Introduction to Chicano(a) Studies	3
MAS 2023	Latino Cultural Expressions	3
MAS 3033	Mexican Americans in the Southwest	3
MAS 4083	Research Seminar in Mexican American Studies	3

2. Select one course from the following:

BBL 3023	Mexican American Culture (required for anthropology concentration)	3
ENG 3613	African American Literature (may substitute for MAS 4953, POL 3093 or SOC 3433 when courses not offered)	3
MAS 3003	Musical Mestizaje	3
MAS 3013	Chicana/o Queer Communities, Identities and Theories	3
MAS 3023	Historical Legacies: Chicanas/os in Education	3
MAS 3043	Social Psychological Considerations in Mexican American Communities	3
MAS 3413	Mexican American Family	3
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.)	3
POL 2403	Mexican American Politics (required for political science concentration)	3
SOC 3433	Mexican Immigration and U.S. Society (recommended for communities, families, and children concentration)	3
SPN 3463	Latin American Literature to Modernism (if not taken for the concentration)	3

SPN 3473	Latin American Literature since Modernism (if not taken for the concentration)
WS 4623	Feminist Theories (may substitute for MAS 4953, POL 3093, or SOC 3433 when courses not offered)

B. Areas of concentration

Select one of the following areas of concentration. Students are encouraged to select their area of concentration as early in their program as possible. 18

Concentration in Anthropology

1. Select three of the following:

ANT 2033	Introduction to Biological Anthropology
ANT 2043	Introduction to Archaeology
ANT 2053	Introduction to Cultural Anthropology
ANT 2063	Language, Thought, and Culture

2. Required upper-division courses:

AHC 3423	Arts of Ancient Mesoamerica
ANT 3363	Indians of Mesoamerica

Select one of the following:

ANT 4123	Archaeology of the American Southwest
SOC 3433	Mexican Immigration and U.S. Society ¹
WS 4623	Feminist Theories ¹

Concentration in Communities, Families, and Children

BBL 3053	Foundations of Bilingual Studies
BBL 3143	Children's Literature for Bilingual Learners
ECE 3143	Child Growth and Development
ESL 3023	Second Language Teaching and Learning in EC-6
MAS 3413	Mexican American Family
SOC 3503	Sociology of Education

Concentration in History

1. Required courses:

HIS 2003	Historical Methods
HIS 3033	The Spanish and Mexican Borderlands
HIS 3303	History of Mexico
HIS 4973	Seminar in History

2. Select two of the following:

HIS 3083	History of the American West
HIS 3333	Mexican American History since 1900
HIS 3423	United States-Mexico Border
HIS 3463	History of Religion in the United States

Concentration in Interdisciplinary Studies

BBL 3143	Children's Literature for Bilingual Learners
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society
IDS 3013	Diversity, Equity, and the Social Sciences
IDS 3123	Culture, Literature, and Fine Arts
MAS 3023	Historical Legacies: Chicanas/os in Education
MAS 3413	Mexican American Family

Concentration in Literary and Cultural Studies

1. Methods. Note: This requirement must be completed before continuing with any other concentration requirements.

ENG 2213	Literary Criticism and Analysis ¹
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2. Select one of the following:

ENG 2383	Multiethnic Literatures of the United States ¹
ENG 2423	Literature of Texas and the Southwest ¹

3. Select one of the following:

ENG 4393	Feminist Theory of Literature
WS 3953	Special Topics in Women Writers

4. Select one of the following:

ENG 3513	Mexican American Literature (if not taken for the major requirement)
ENG 3713	Topics in Multiethnic Literatures of the United States ¹
ENG 4613	Topics in Mexican American Literature (if not taken for the major requirement)

5. Select one of the following:

BBL 3023	Mexican American Culture (if not taken for the major requirement)
ENG 3613	African American Literature
HUM 3103	American Film ¹

6. Select one of the following:

ENG 4953	Special Studies in English ¹
ENG 4973	Seminar for English Majors ¹

Concentration in Nonprofit Management

1. Required courses:

MAS 4933	Internship in Mexican American Studies
PAD 3003	Fundraising in Nonprofit Agencies
PAD 3033	Introduction to Nonprofit Agencies
PAD 3043	Public and Nonprofit Financial Management

2. Select two courses from the following:

COM 3893	Organizational Communication
PAD 3113	Managing Nonprofit Organizations
PAD 3123	Strategic Planning in the Public and Nonprofit Sectors
PAD 4963	Special Topics in Public Administration

Concentration in Political Science

1. Required courses:

POL 1133	Texas Politics and Society (may be used to fulfill a core requirement in Government-Political Science)
POL 2703	Quantitative Methods in Political Science
POL 2403	Mexican American Politics

2. Select one of the following:

POL 2503	Introduction to Political Theory
POL 2533	Introduction to Political Science
POL 2623	Law and Society
POL 2633	Comparative Politics

3. Three upper-division political science courses selected from three of the categories below:

American Politics	
POL 3183	Women in Politics
POL 3203	African American Political Thought
POL 3303	Race, Ethnicity and Public Policy
POL 3413	Urban Development: Politics Planning, and Power
Comparative or International Politics	
Comparative Politics	
POL 3393	Latin American Politics

POL 3453	Politics of Mexico
POL 3463	Politics of the Third World
POL 3553	The Welfare State in Comparative Perspective
International Politics	
GLA 3233	Theories of International Justice
POL 3763	Globalization
Political Theory	
POL 3153	Political Philosophy: Contemporary
Public Administration or Public Law	
Public Administration	
POL 3413	Urban Development: Politics Planning, and Power
Public Law	
POL 3013	The American Legal Process
POL 3173	Justice and Social Policy

Concentration in Sociology

1. Required courses:	
SOC 1013	Introduction to Sociology
SOC 3043	Race and Ethnic Relations
SOC 3353	Sociological Theory
SOC 3373	Qualitative Research Methods
or SOC 3393: Quantitative Research Methods	
2. Select two courses from the following:	
SOC 3013	Social Stratification
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

1. Required courses:	
SPN 3013	Spanish Phonetics and Phonology
or SPN 3113: Linguistic Structures of Spanish	
SPN 3043	Introduction to Literature
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
2. Select one of the following:	
BBL 4003	Spanish for Bilingual Instructional Delivery
ENG 4613	Topics in Mexican American Literature (when content includes Spanish literature and if not taken for the major requirement)
SPN 4123	The Spanish of the United States

C. Electives

Select 39 semester credit hours of electives	39
Total Credit Hours	78

¹ Denotes course substitution accepted when taught by a Mexican American Studies affiliate or focus is on Chicano/Latino content.

B.A. in Mexican American Studies – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
ANT 2033	Introduction to Biological Anthropology (core)	3
BBL 2003	Language, Culture, and Society (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Mathematics core		3
Credit Hours		15

Spring

MAS 2023	Latino Cultural Expressions (core and major)	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
American History core		3
Life & Physical Sciences core		3
Credit Hours		15

Second Year

Fall

ANT 2053	Introduction to Cultural Anthropology (core and major) or Language, Thought, and Culture	3
ECO 2003	Economic Principles and Issues (core)	3
MAS 2013	Introduction to Chicano(a) Studies (core)	3
POL 1133	Texas Politics and Society (core) or POL 1213 or Civil Rights in Texas and America	3
Concentration courses (see Section B)		3
Credit Hours		15

Spring

MAS 3033	Mexican Americans in the Southwest	3
ENG 2213	Literary Criticism and Analysis (core) or ENG 2383 or ENG 2423 or Multiethnic Literatures of the United States or Literature of Texas and the Southwest	3
Concentration courses (see Section B)		3
Concentration courses (see Section B)		3
Elective in MAS (MAS 3043 or MAS 3413)		3
Credit Hours		15

Third Year

Fall

ENG 3513	Mexican American Literature or ENG 4613 or Topics in Mexican American Literature	3
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Concentration courses (see Section B)	6	
Elective in MAS	3	
Upper-division electives (see Section C)	3	
Credit Hours	15	
Spring		
Concentration courses (see Section B)	6	
Upper-division electives (see Section C)	9	
Credit Hours	15	
Fourth Year		
Fall		
Electives (enough upper-division hours to meet required 39, see Section C)	12	
Credit Hours	12	
Spring		
MAS 4083	Research Seminar in Mexican American Studies ¹	3
American History core		3
Electives (enough upper-division hours to meet required 39; see Section C)		12
Credit Hours		18
Total Credit Hours		120

¹ It is recommended that MAS and concentration courses be completed before taking MAS 4083, as this is the capstone course for the major.

Bilingual Education and ESL Teacher Certification Concentrations

Bachelor of Arts Degree in Interdisciplinary Studies (Early Childhood–Grade 6 Bilingual Core Subjects Certification Concentration)

The minimum number of semester credit hours required for the Interdisciplinary Studies (IDS) degree with early childhood–grade 6 bilingual core subjects certification is 128, 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.

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 B.A. 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.

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 Life and Physical Sciences. All

IDS majors must complete AIS 1203, and either AAS 2013 or MAS 2013 is recommended to satisfy the core requirements in Language, Philosophy and Culture. MAS 2023 is recommended to satisfy the core requirement in Creative Arts. HIS 1053 and HIS 2053 are recommended to satisfy the core requirement in American History. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. IDS Core Courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS Support Courses

ECE 3313	Play, Creativity, and Learning	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
IDS 2403 & IDS 3201 or IDS 3234	Physical Science and Inquiry in Physical Science Investigations in Physical Science	4
IDS 2413 & IDS 3211 or IDS 3224	Earth Systems Science and Inquiry in Earth Systems Science Earth Systems Science Investigations	4
MAT 1153	Essential Elements in Mathematics I	3
MAT 1163	Essential Elements in Mathematics II	3
SPE 3603	Introduction to Special Education	3
Total Credit Hours		41

Certification Requirements

Texas Success Initiative (TSI) requirements must be satisfied before enrollment in Certification, Professional Education, and Clinical Teaching coursework.

A. Early Childhood–Grade 6 Bilingual Generalist courses

BBL 3013	Language Analysis and Bilingualism	3
BBL 3023 or BBL 3033	Mexican American Culture Mexican Americans in the Southwest	3
BBL 3053	Foundations of Bilingual Studies (prerequisite to BBL 4033, BBL 4063, BBL 4073, and BBL 4403)	3

BBL 3133	Language Development in Bilinguals	3
BBL 3143	Children's Literature for Bilingual Learners	3
ESL 3023	Second Language Teaching and Learning in EC–6	3
ESL 3053	Literacy in a Second Language	3
LTED 3813	Writing Development and Instruction-EC–6	3

B. Professional Education courses

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 3823	Reading Comprehension in Bilingual Settings	3
BBL 4033	Assessment, Learning, and Motivation in Bicultural-Bilingual Classrooms ¹	3
BBL 4063	Bilingual Approaches to Content-Based Learning ¹	3
BBL 4073	Language Arts in a Bicultural-Bilingual Program ¹	3
BBL 4353	Approaches to Teaching Science EC–6	3
BBL 4403	Approaches to Teaching Mathematics EC–6 ¹	3
C&I 4616	Clinical Teaching: Early Childhood–Grade 6	6
Total Credit Hours		48

¹ Concurrent enrollment.

B.A. in Interdisciplinary Studies, Early Childhood–Grade 6 Bilingual Core Subjects Certification Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1233	Contemporary Biology I (core)	3
HIS 1053	United States History: Civil War Era to Present (core)	3
MAT 1023	College Algebra with Applications (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15

Spring

AST 1033 or PHY 1013	Exploration of the Solar System (core) or Universes	3
HIS 2053	Texas History (core)	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		15

Summer

IDS 2113	Society and Social Issues (core and major)	3
POL 1133	Texas Politics and Society (core)	3
Component Area Option core		3
Credit Hours		9

Second Year

Fall

AAS 2013 or MAS 2013	Introduction to African American Studies (core) or Introduction to Chicano(a) Studies	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
MAS 2023	Latino Cultural Expressions (core)	3
MAT 1153	Essential Elements in Mathematics I	3
Credit Hours		15

Spring

BBL 3053	Foundations of Bilingual Studies	3
IDS 2403	Physical Science	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3201	Inquiry in Physical Science	1
MAT 1163	Essential Elements in Mathematics II	3
Credit Hours		13

Summer

IDS 2413	Earth Systems Science	3
IDS 3211	Inquiry in Earth Systems Science	1
LTED 3813	Writing Development and Instruction-EC–6	3
SPE 3603	Introduction to Special Education	3
Credit Hours		10

Third Year

Fall

Admission to the Teacher Certification Program		
BBL 3013	Language Analysis and Bilingualism	3
BBL 3133	Language Development in Bilinguals	3
ECE 3313	Play, Creativity, and Learning	3
ESL 3023	Second Language Teaching and Learning in EC–6	3
IDS 3003	STEM in Social Contexts	3
Credit Hours		15

Spring

BBL 3023 or BBL 3033	Mexican American Culture or Mexican Americans in the Southwest	3
BBL 3143	Children's Literature for Bilingual Learners	3
BBL 4353	Approaches to Teaching Science EC–6	3
ESL 3053	Literacy in a Second Language	3
BBL 3823	Reading Comprehension in Bilingual Settings	3
Credit Hours		15

Summer

IDS 3713	Interdisciplinary Inquiry	3
Credit Hours		3

Fourth Year**Fall**

BBL 4033	Assessment, Learning, and Motivation in Bicultural-Bilingual Classrooms ¹	3
BBL 4063	Bilingual Approaches to Content-Based Learning ¹	3
BBL 4073	Language Arts in a Bicultural-Bilingual Program ¹	3
BBL 4403	Approaches to Teaching Mathematics EC-6 ¹	3
Credit Hours		12

Spring

C&I 4616	Clinical Teaching: Early Childhood-Grade 6 ²	6
Credit Hours		6
Total Credit Hours		128

¹ Concurrent enrollment. Students may not register for more than these four courses in the BBL Block without permission from the department.

² Students completing clinical teaching may not register for more than 3 semester credit hours beyond clinical teaching during this semester.

Bachelor of Arts Degree in Interdisciplinary Studies (Grades 4-8 Bilingual Core Subjects Certification Concentration)

The minimum number of semester credit hours required for the Interdisciplinary Studies (IDS) degree with grades 4-8 bilingual core subjects certification is 132, 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.

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 B.A. 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.

MAT 1023 should be used to satisfy the core requirement in Mathematics. BIO 1233 should be used to satisfy a core requirement in Life and Physical Sciences. All IDS majors must complete AIS 1203, and either AAS 2013 or MAS 2013 is recommended to satisfy the core requirement in Language, Philosophy and Culture. MAS 2023 is recommended to satisfy the core requirement in Creative Arts. HIS 1053 and HIS 2053 should be used to satisfy the core requirement in American

History. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. IDS Core Courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS Support Courses

1. Required Courses:

BIO 1233	Contemporary Biology I	3
EDP 3303	Learning and Development in the Middle School Context (Grades 4-8)	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
GES 1023	World Regional Geography	3
HIS 1053	United States History: Civil War Era to Present	3
HIS 2053	Texas History	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
IDS 2403 & IDS 3201 or IDS 3234	Physical Science and Inquiry in Physical Science Investigations in Physical Science	4
IDS 2413 & IDS 3211 or IDS 3224	Earth Systems Science and Inquiry in Earth Systems Science Earth Systems Science Investigations	4
MAT 1023	College Algebra with Applications	3
MAT 1093	Precalculus	3
MAT 1153	Essential Elements in Mathematics I	3
MAT 1163	Essential Elements in Mathematics II	3
MAT 1214	Calculus I	4
LTED 3523	Reading for Teachers-Grades 4-8 (see correction below)	3
LTED 3633	Literature and Other Texts Across the Content Areas-Grades 4-8	3
SPE 3603	Introduction to Special Education	3
2. Level One or Level Two Science courses in a different discipline from science courses taken for Core Curriculum requirement.		3
3. Select one of the following: ¹		3

BBL 4003	Spanish for Bilingual Instructional Delivery	
SPN 3063	Grammar and Composition	
SPN 4003	Advanced Language Skills	
Total Credit Hours		75

* **Correction:** LTED 3523 Reading for Teachers-Grades 4–8 must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4626 Clinical Teaching: Grades 4–8.

¹ Students must complete one of the three listed courses with a grade of "C-" or better. Grades of "CR" received from a Challenge Examination of a UTSA course or College Level Examination Program (CLEP) will not be accepted.

Certification Requirements

Texas Success Initiative (TSI) requirements must be satisfied before enrollment in Certification, Professional Education, and Clinical Teaching coursework.

A. Required courses

BBL 3053	Foundations of Bilingual Studies	3
BBL 3133	Language Development in Bilinguals	3
ESL 3053	Literacy in a Second Language	3
ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3

B. Professional Education courses

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 ¹	3
BBL 4063	Bilingual Approaches to Content-Based Learning ¹	3
BBL 4073	Language Arts in a Bicultural-Bilingual Program ¹	3
C&I 4433	Approaches to Teaching Science—Grades 4–8	3
	or C&I 4443 Approaches to Teaching Mathematics—Grades 4–8	
C&I 4603	Classroom Management Strategies—Grades 4–8	3
C&I 4626	Clinical Teaching: Grades 4–8	6
Total Credit Hours		33

¹ Concurrent enrollment.

B.A. in Interdisciplinary Studies, Grades 4–8 Bilingual Core Subjects Certification Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1233	Contemporary Biology I (core and major)	3
HIS 1053	United States History: Civil War Era to Present (core and major)	3
MAT 1023	College Algebra with Applications (core and major)	3

WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15

Spring

HIS 2053	Texas History (core and major)	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
MAS 2023	Latino Cultural Expressions (core)	3
MAT 1093	Precalculus (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		15

Summer

IDS 2113	Society and Social Issues (core and major)	3
POL 1013	Introduction to American Politics (core)	3
Life & Physical Sciences core		3
Credit Hours		9

Second Year

Fall

EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 2413	Earth Systems Science	3
IDS 3211	Inquiry in Earth Systems Science	1
MAS 2013 or AAS 2013	Introduction to Chicano(a) Studies (core) or Introduction to African American Studies	3
MAT 1153	Essential Elements in Mathematics I	3
MAT 1214	Calculus I	4
Credit Hours		17

Spring

IDS 2403	Physical Science	3
IDS 3201	Inquiry in Physical Science	1
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
MAT 1163	Essential Elements in Mathematics II	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Credit Hours		16

Summer

GES 1023	World Regional Geography	3
SPE 3603	Introduction to Special Education	3
Additional Life & Physical Sciences core		3
Credit Hours		9

Third Year

Fall

Admission to the Teacher Certification Program		
BBL 3053	Foundations of Bilingual Studies	3

BBL 4003 or SPN 3063 or SPN 4003	Spanish for Bilingual Instructional Delivery or Grammar and Composition or Advanced Language Skills	3
EDP 3303	Learning and Development in the Middle School Context (Grades 4– 8)	3
ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
IDS 3003	STEM in Social Contexts	3
	Credit Hours	15
Spring		
BBL 3133	Language Development in Bilinguals	3
ESL 3053	Literacy in a Second Language	3
IDS 3713	Interdisciplinary Inquiry	3
LTED 3523	Reading for Teachers-Grades 4–8	3
LTED 3633	Literature and Other Texts Across the Content Areas-Grades 4–8	3
	Credit Hours	15
Fourth Year		
Fall		
BBL 4033	Assessment, Learning, and Motivation in Bicultural-Bilingual Classrooms ¹	3
BBL 4063	Bilingual Approaches to Content- Based Learning ¹	3
BBL 4073	Language Arts in a Bicultural- Bilingual Program ¹	3
C&I 4433 or C&I 4443	Approaches to Teaching Science– Grades 4–8 or Approaches to Teaching Mathematics–Grades 4–8	3
C&I 4603	Classroom Management Strategies–Grades 4–8	3
	Credit Hours	15
Spring		
C&I 4626	Clinical Teaching: Grades 4–8 ²	6
	Credit Hours	6
	Total Credit Hours	132

¹ Concurrent enrollment.

² Students completing clinical teaching may not register for more than 3 semester credit hours beyond clinical teaching during this semester.

Bachelor of Arts Degree in Interdisciplinary Studies (Early Childhood–Grade 6 ESL Core Subjects Certification Concentration)

The minimum number of semester credit hours required for the Interdisciplinary Studies (IDS) degree with early childhood–grade 6 ESL core subjects certification is 125, 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 B.A. 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.

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 Life and Physical Sciences. BBL 2003 is recommended in to satisfy the Component Area Option. MAS 2023 is recommended to satisfy the core requirement in Creative Arts. HIS 1053 and HIS 2053 should be used to satisfy the core requirement in America History. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences. ENG 2013, ENG 2383, or MAS 2013 are recommended to satisfy the core requirement in Language, Philosophy and Culture.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. IDS Core Courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS Support Courses

IDS 2403 & IDS 3201 or IDS 3234	Physical Science and Inquiry in Physical Science Investigations in Physical Science	4
IDS 2413 & IDS 3211 or IDS 3224	Earth Systems Science and Inquiry in Earth Systems Science Earth Systems Science Investigations	4
MAT 1153	Essential Elements in Mathematics I	3
MAT 1163	Essential Elements in Mathematics II	3
Total Credit Hours		29

Certification Requirements

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

ECE 3143	Child Growth and Development	3
ESL 3003	Language and Schooling	3
ESL 3023	Second Language Teaching and Learning in EC–6	3
ESL 3033	Foundations of English as a Second Language	3
ESL 3053	Literacy in a Second Language	3

B. Other Certification Courses

IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
BBL 3403	Cultural and Linguistic Equity for Schooling	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
LTED 3513	Children’s Literature EC–6	3
LTED 3813	Writing Development and Instruction-EC–6	3
SPE 3603	Introduction to Special Education	3

The following course requires an advisor code and is restricted to students who have applied for and been accepted into the Teacher Certification Program.

LTED 3823	Reading Comprehension-EC–6	3
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C. Professional Education Requirements

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	3
C&I 4353	Approaches to Teaching Science EC–6	3
C&I 4403	Approaches to Teaching Mathematics EC–6	3
C&I 4616	Clinical Teaching: Early Childhood–Grade 6	6
ECE 4203	Assessment and Evaluation in EC–6	3
ESL 4003	Approaches to Second Language Teaching	3

Total Credit Hours 57

B.A. in Interdisciplinary Studies, Early Childhood–Grade 6 ESL Core Subjects Certification Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1233	Contemporary Biology I (core)	3
HIS 1053	United States History: Civil War Era to Present (core)	3
MAT 1023	College Algebra with Applications (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15

Spring

AST 1033 or PHY 1013	Exploration of the Solar System (core) or Universes	3
HIS 2053	Texas History (core)	3

IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		15

Summer

BBL 2003	Language, Culture, and Society (core)	3
IDS 2113	Society and Social Issues (core and major)	3
POL 1133	Texas Politics and Society (core)	3
MAS 2023	Latino Cultural Expressions (core)	3
Credit Hours		12

Second Year

Fall

BBL 3403	Cultural and Linguistic Equity for Schooling	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3

ENG 2013 or ENG 2383 or ENG 2423	Introduction to Literature (core) or Multiethnic Literatures of the United States or Literature of Texas and the Southwest	3
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ESL 3003	Language and Schooling	3
MAT 1153	Essential Elements in Mathematics I	3
Credit Hours		15

Spring

ESL 3023	Second Language Teaching and Learning in EC–6	3
ESL 3033	Foundations of English as a Second Language	3

IDS 2403	Physical Science	3
IDS 3201	Inquiry in Physical Science	1
LTED 3513	Children’s Literature EC–6	3
MAT 1163	Essential Elements in Mathematics II	3
Credit Hours		16

Summer

IDS 2413	Earth Systems Science	3
IDS 3211	Inquiry in Earth Systems Science	1
ESL 3053	Literacy in a Second Language	3
LTED 3813	Writing Development and Instruction-EC–6	3
Credit Hours		10

Third Year

Fall

Admission to the Teacher Certification Program		
ECE 3143	Child Growth and Development	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3

SPE 3603	Introduction to Special Education	3
	Credit Hours	12
Spring		
C&I 4353	Approaches to Teaching Science EC-6	3
C&I 4403	Approaches to Teaching Mathematics EC-6	3
ECE 4203	Assessment and Evaluation in EC-6	3
LTED 3823	Reading Comprehension-EC-6	3
	Credit Hours	12
Summer		
IDS 3713	Interdisciplinary Inquiry	3
	Credit Hours	3
Fourth Year		
Fall		
C&I 4303	Approaches to Teaching Social Studies Incorporating Language Arts and Fine Arts EC-6	3
ESL 4003	Approaches to Second Language Teaching	3
IDS 3123	Culture, Literature, and Fine Arts	3
	Credit Hours	9
Spring		
C&I 4616	Clinical Teaching: Early Childhood-Grade 6 ¹	6
	Credit Hours	6
	Total Credit Hours	125

¹ Students completing clinical teaching may not register for more than 3 semester credit hours beyond clinical teaching during this semester.

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 123, 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 B.A. 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.

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 Life and Physical Sciences. BBL 2003 is recommended to satisfy the Component Area Option. MAS 2023 is recommended to satisfy the core requirement in Creative

Arts. HIS 1053 and HIS 2053 should be used to satisfy the core requirement in American History. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences. ENG 2013 or ENG 2383 are recommended to satisfy the core requirement in Language, Philosophy and Culture.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. IDS Core Courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS Support Courses

IDS 2083	Learning with Technology	3
IDS 2403	Physical Science	3
IDS 2413	Earth Systems Science	3
MAT 1023	College Algebra with Applications	3
MAT 1153	Essential Elements in Mathematics I	3
MAT 1163	Essential Elements in Mathematics II	3

Select one of the following:	3	
BBL 2243	Globalizing the Local: Bilingual Families, Communities, and Schools	
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	

Total Credit Hours	36
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Certification Requirements

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

ESL 3003	Language and Schooling	3
ESL 3033	Foundations of English as a Second Language	3
ESL 3053	Literacy in a Second Language	3
ESL 3063	Second Language Teaching and Learning for Grades 4-8 and 7-12	3

B. Other Certification Courses

BBL 3403	Cultural and Linguistic Equity for Schooling	3
EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
LTED 3523	Reading for Teachers-Grades 4–8 (see correction below)	3
LTED 3533	Reading and Writing Across the Disciplines-Grades 4–8	3
or LTED 3633	Literature and Other Texts Across the Content Areas-Grades 4–8	3
LTED 3803	Writing Development, Processes, and Instruction-Grades 4–8	3
SPE 3603	Introduction to Special Education	3

C. Professional Education Courses

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 4543	Approaches to Teaching Social Studies–Grades 4–8	3
C&I 4626	Clinical Teaching: Grades 4–8	6
EDP 4203	Assessment and Evaluation	3
ESL 4003	Approaches to Second Language Teaching	3
Total Credit Hours		51

* **Correction:** LTED 3523 Reading for Teachers-Grades 4–8 must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4626 Clinical Teaching: Grades 4–8/Clinical Teaching: Grades 4–8.

B.A. in Interdisciplinary Studies, Grades 4–8 ESL Certification Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1023	College Algebra with Applications (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History core		3
Life & Physical Sciences core		3
Credit Hours		15

Spring

IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
American History core		3
Life & Physical Sciences core		3
Credit Hours		15

Summer

BBL 2003	Language, Culture, and Society (core)	3
IDS 2113	Society and Social Issues (core and major)	3
IDS 2403	Physical Science	3
Credit Hours		9

Second Year

Fall

EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
ESL 3003	Language and Schooling	3
IDS 2413	Earth Systems Science	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
MAT 1153	Essential Elements in Mathematics I	3
Credit Hours		15

Spring

ENG 2013 or ENG 2383	Introduction to Literature (core) or Multiethnic Literatures of the United States	3
ESL 3033	Foundations of English as a Second Language	3
IDS 2083	Learning with Technology	3
IDS 3003	STEM in Social Contexts	3
MAT 1163	Essential Elements in Mathematics II	3
Credit Hours		15

Summer

ESL 3053	Literacy in a Second Language	3
MAS 2023	Latino Cultural Expressions (core)	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
SPE 3603	Introduction to Special Education	3
Credit Hours		12

Third Year

Fall

Admission to the Teacher Certification Program		
EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
IDS 3713	Interdisciplinary Inquiry	3
LTED 3803	Writing Development, Processes, and Instruction-Grades 4–8	3
Credit Hours		9

Spring

BBL 3403	Cultural and Linguistic Equity for Schooling	3
ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
LTED 3523	Reading for Teachers-Grades 4–8	3
Select one of the following:		3

BBL 2243	Globalizing the Local: Bilingual Families, Communities, and Schools	
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	
Credit Hours		12
Fourth Year		
Fall		
C&I 4543	Approaches to Teaching Social Studies—Grades 4–8	3
EDP 4203	Assessment and Evaluation	3
ESL 4003	Approaches to Second Language Teaching	3
IDS 3123	Culture, Literature, and Fine Arts	3
LTED 3533 or LTED 3633	Reading and Writing Across the Disciplines—Grades 4–8 or Literature and Other Texts Across the Content Areas—Grades 4–8	3
Credit Hours		15
Spring		
C&I 4626	Clinical Teaching: Grades 4–8 ¹	6
Credit Hours		6
Total Credit Hours		123

¹ Students completing clinical teaching may not register for more than 3 semester credit hours beyond clinical teaching during this semester.

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	3
or		
BBL 3403	Cultural and Linguistic Equity for Schooling (required for EC–6 and grades 4–8 teacher certification programs)	
ESL 3003	Language and Schooling	3
ESL 3023	Second Language Teaching and Learning in EC–6 (required for EC–6 teacher certification programs)	3
or		

ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12 (required for grades 4–8 teacher certification programs)	
ESL 3033	Foundations of English as a Second Language	3
ESL 3053	Literacy in a Second Language	3
ESL 4003	Approaches to Second Language Teaching	3

- Minor in Bicultural Studies (p. 79)
- Minor in English as a Second Language (p. 79)

Minor in Bicultural Studies

All students pursuing a Minor in Bicultural Studies must complete 18 semester credit hours.

A. Bicultural Studies

Select two of the following:		6
BBL 2003	Language, Culture, and Society	
BBL 2023	Latino Cultural Expressions	
MAS 2013	Introduction to Chicano(a) Studies	

B. Language

Select two of the following:		6
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. Culture and Society

Select two of the following:		6
BBL 2033	Multiculturalism in the Southwest	
BBL 3023	Mexican American Culture	
BBL 3033	Mexican Americans in the Southwest	
BBL 4953	Special Studies in Bilingual and Bicultural Studies	

Total Credit Hours	18
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To declare a Minor in Bicultural Studies, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

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. Courses in English as a second language

ESL 3003	Language and Schooling	3
ESL 3033	Foundations of English as a Second Language	3
ESL 3053	Literacy in a Second Language	3
Select one of the following:		3
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 Teaching and Learning for Grades 4–8 and 7–12	

B. Culture and society

Select one of the following:		3
BBL 2033	Multiculturalism in the Southwest	

BBL 3023	Mexican American Culture	
BBL 3033	Mexican Americans in the Southwest	
C. Language minority education		
Select one of the following:		3
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	
Total Credit Hours		18

To declare a Minor in English as a Second Language, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Department of Counseling

The Department of Counseling provides support work for undergraduate degrees and offers a Master of Education degree in School Counseling, a Master of Science degree in Clinical Mental Health 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 two graduate degrees: the Master of Arts in Educational Psychology and the Master of Arts in School Psychology. The Department also offers three graduate certificates: Certificate in Applied Behavior Analysis, Certificate in Language Acquisition and Bilingual Psychoeducational Assessment, and Certificate in Program Evaluation. (See the *UTSA Graduate Catalog* for further information.)

Criminal History Policy and Acknowledgement

The College of Education and Human Development (COEHD) prepares educators and professionals for fields which require fieldwork, internship, practicum, service-learning and/or clinical teaching. Placements occur in educational, clinical, health care facilities, hospital, and/or medical settings which require a criminal background check. The University of Texas at San Antonio is required to inform students of the requirements set forth by the Texas Occupation Code, Chapter 53, Sections 53.001 through 53.105 (<http://www.texas-statutes.com/occupations-code/chapter-53-consequences-of-criminal-conviction>).

All COEHD prospective students in a licensure or certification program are required to acknowledge that they have been made aware of these requirements and that they have read the COEHD Criminal History Policy (http://education.utsa.edu/certification_program/criminal_history_policy). For more information and for completing the acknowledgement form, please visit the Office of Professional Preparation, Assessment, and Accreditation in the College of Education and Human Development.

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:

1. 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 five concentrations: early childhood–grade 6 (EC–6) core subjects certification, grades 4–8 core subjects certification, grades 4–8 language arts/reading/social studies certification, grades 4–8 mathematics/science certification, or EC–12 special education certification. 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 their academic advisor for information regarding certification requirements and for information on admission to the Teacher Certification Program.

IDS majors seeking bilingual EC–6 and 4–8 should refer to the section of this catalog entitled Department of Bicultural-Bilingual Studies. IDS majors seeking ESL certification should consider challenging the ESL certification test after completing the EC–6 grade certification test.

Please note that certification programs and requirements are subject to change depending on changes mandated by the state.

2. Bachelor of Arts Degree in Multicultural Early Childhood Development

The Bachelor of Arts degree in Multicultural Early Childhood Development (B.A. MECD) is grounded on principles of child development as well as culturally relevant pedagogy. This program's curriculum is based on five premises that will help early childhood educators develop an in-depth knowledge of cognitive, linguistic, physical and socio-emotional development as well as appropriate teaching and learning practices. Specifically, the B.A. MECD curriculum focuses on early learning experiences for very young children of diverse cultural and linguistic backgrounds and examines the following: (1) quality early learning experiences, (2) collaboration with families, (3) programs for dual language learners, (4) early intervention principles and practices, and (5) leadership and advocacy in early childhood settings. The curriculum for this bachelor's degree aligns with the National Association for the Education of Young Children (NAEYC) Standards for Early Childhood Professional Preparation. The program will accept 60–66 hours of transfer credit hours with approval. The B.A. in Multicultural Early Childhood Development offers students the opportunity to select from two minors that will help them specialize in areas that are currently in high demand: Early Dual Immersion (English language learners) and Early Intervention (children with special needs). Both minors provide students with more in-depth knowledge regarding each population.

3. Secondary Certification

The Department of Interdisciplinary Learning and Teaching offers coursework required for students seeking secondary certification (grades 7–12). 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 their academic advisor 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.

Criminal History Policy and Acknowledgement

The College of Education and Human Development (COEHD) prepares educators and professionals for fields which require fieldwork, internship, practicum, service-learning and/or clinical teaching. Placements occur in educational, clinical, health care facilities, hospital, and/or medical settings which require a criminal background check. The University of Texas at San Antonio is required to inform students of the requirements set forth by the Texas Occupation Code, Chapter 53, Sections 53.001 through 53.105 (<http://www.texas-statutes.com/occupations-code/chapter-53-consequences-of-criminal-conviction>).

All COEHD prospective students in a licensure or certification program are required to acknowledge that they have been made aware of these requirements and that they have read the COEHD Criminal History Policy (http://education.utsa.edu/certification_program/criminal_history_policy). For more information and for completing the acknowledgement form, please visit the Office of Professional Preparation, Assessment, and Accreditation in the College of Education and Human Development.

- B.A. degree in Interdisciplinary Studies (degree-only concentration) (p. 82)
- B.A. degree in Multicultural Early Childhood Development (p. 83)

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. 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 B.A. 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.

MAT 1023 should be used to satisfy the core requirement in Mathematics. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6

Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

IDS Degree Requirements

A. IDS core courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS required courses

IDS 2403	Physical Science	3
IDS 2413	Earth Systems Science	3
IDS 3201	Inquiry in Physical Science	1
IDS 3211	Inquiry in Earth Systems Science	1
MAT 1153	Essential Elements in Mathematics I	3
MAT 1163	Essential Elements in Mathematics II	3

C. Area of specialization 18-24

One area of specialization must be selected by the student seeking the IDS degree-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 IDS required courses. Assistance in selection is available from the Interdisciplinary Education Advising and Certification Center. Students are encouraged to select their area of specialization as early in their program as possible.

D. Electives 28-34

Upper-division courses to complete a minimum total of 120 semester credit hours. Advisors in the Interdisciplinary Education 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
POL 1013	Introduction to American Politics (core)	3
MAT 1023	College Algebra with Applications (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History core		3
Credit Hours		15

Spring

IDS 2113	Society and Social Issues (core and major)	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3

WRC 1023	Freshman Composition II (Q) (core)	3
American History core		3
Life & Physical Sciences core		3
Credit Hours		15
Second Year		
Fall		
IDS 3013	Diversity, Equity, and the Social Sciences	3
MAT 1153	Essential Elements in Mathematics I	3
Creative Arts core		3
Language, Philosophy & Culture core		3
Life & Physical Sciences core		3
Credit Hours		15
Spring		
IDS 2403 or IDS 3234	Physical Science or Investigations in Physical Science	3
IDS 3201 or IDS 3224	Inquiry in Physical Science or Earth Systems Science Investigations	1
MAT 1163	Essential Elements in Mathematics II	3
Area of Specialization course		3
Component Area Option core		3
Upper-division elective		3
Credit Hours		16
Third Year		
Fall		
IDS 2413 or IDS 3224	Earth Systems Science or Earth Systems Science Investigations	3
IDS 3211 or IDS 3224	Inquiry in Earth Systems Science or Earth Systems Science Investigations	1
IDS 3123	Culture, Literature, and Fine Arts	3
Area of Specialization course		3
Area of Specialization course		3
Upper-division elective		3
Credit Hours		16
Spring		
IDS 3003	STEM in Social Contexts	3
Area of Specialization course		3
Upper-division elective		3
Upper-division elective		3
Upper-division elective		3
Credit Hours		15
Fourth Year		
Fall		
IDS 3713	Interdisciplinary Inquiry	3
Upper-division Area of Specialization course		3
Upper-division elective		3
Upper-division elective		3

Upper-division elective	3
Credit 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 (to meet 120 hour minimum)	1
Credit Hours	13
Total Credit Hours	120

Bachelor of Arts Degree in Multicultural Early Childhood Development

The minimum number of semester credit hours required for the Multicultural Early Childhood Development 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 and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.A. degree in Multicultural Early Childhood Development must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements.

MAT 1043 should be used to satisfy the core requirement in Mathematics. AAS 2013 is recommended to satisfy the core requirement in Language, Philosophy, and Culture. MAS 2023 should be used to satisfy the core requirement in Creative Arts. BBL 2003 should be used to satisfy the core requirement in Social and Behavioral Sciences. AAS 2113, MAS 2013, PSY 1013, or SOC 1013 should be used to satisfy the Component Area Option core requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. Early Childhood core

ECE 2013	Introduction to Multicultural Early Childhood Education	3
ECE 2123	Diversity in Early Childhood (Credit cannot be earned for both ECE 2123 and BBL 2123)	3
or BBL 2123	Diversity in Early Childhood	
ECE 3143	Child Growth and Development	3

EDP 2113	Theories of Learning	3
HTH 3013	Survey of Human Nutrition	3
SPE 3603	Introduction to Special Education	3

B. Upper-division coursework

COU 3203	Child Abuse and Domestic Violence	3
ECE 3133	Programs and Policies in Early Childhood Education	3
ECE 3153	Movement, Music and Health in Early Childhood	3
ECE 3313	Play, Creativity, and Learning	3
ECE 3603	Language and Literacy Acquisition	3
ECE 4103	Guidance of Young Children in Groups	3
ECE 4123	Family and Community Resources in Early Childhood	3
ECE 4153	Culturally Appropriate Assessment for Infants and Young Children	3
ECE 4253	STEM in Early Childhood Contexts	3
ECE 4342	Internship in Multicultural Early Childhood Development I - Infants	2
ECE 4412	Internship in Multicultural Early Childhood Development II - Toddlers	2
ECE 4552	Internship in Multicultural Early Childhood Development III - Preschool	2
ECE 4653	Leadership and Management of Early Childhood Settings	3
ESL 3003	Language and Schooling	3
LTED 3643	Children's Literature for Young Diverse Learners - Infants and Toddlers	3

C. Select one of the Minor options below 18

Minor in Early Dual Immersion

BBL 3043	Social Psychological Considerations in Mexican American Communities	
BBL 3053	Foundations of Bilingual Studies	
BBL 3133	Language Development in Bilinguals	
BBL 3143	Children's Literature for Bilingual Learners	
BBL 4043	Dual Language Education in Early Childhood	
ESL 4023	Teaching and Learning Language Development of Young Emergent Bilinguals	

Minor in Early Intervention (with BCaBA certificate option)

SPE 3303	Applied Behavior Analysis in Early Childhood	
SPE 3633	Classroom and Behavior Management for Students with Disabilities	
SPE 3653	Practicum in Special Education (Mild/Moderate Disabilities)	
SPE 3673	Assessment: Students with ASD and Developmental Disabilities	
SPE 4673	Instruction for Students with Autism Spectrum Disorders and Developmental Disabilities	
SPE 4683	Communication and Collaboration in Special Education	

Total Credit Hours 78

New Course: SPE 4681 Ethics in Applied Behavior Analysis Research and Practice. (1-0) 1 Credit hour.

This course provides students with 15 hours of instruction addressing the Behavior Analyst Certification Board's Professional and Ethical

Compliance Code (The CODE). Students will learn how to engage in ethical applied behavior analysis (ABA) research and practice through advanced coverage of The CODE. The objective of this course is to demonstrate sound ethical decision making in response to examples of scenarios commonly encountered in ABA research and practice in clinical and educational settings. Prerequisites for this course are SPE 3303 and SPE 3633. Concurrent enrollment or prior completion of SPE 3673 or SPE 4673, and SPE 4683 is required. Prior completion of SPE 4683 is recommended because the current course will provide coverage of content from SPE 4683. May be repeated once for credit. Possible Course Fees: LRH1 \$10; STSH \$5.

B.A. in Multicultural Early Childhood Development Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1043	Introduction to Mathematics (core)	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History core		3
Credit Hours		15

Spring

BBL 2003	Language, Culture, and Society (core)	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
WRC 1023	Freshman Composition II (Q) (core)	3
American History core		3
Life & Physical Sciences core		3
Credit Hours		15

Second Year

Fall

AAS 2013	Introduction to African American Studies (core)	3
AAS 2113 or MAS 2013 or PSY 1013 or SOC 1013	African American Culture, Leadership and Social Issues (core) or Introduction to Chicano(a) Studies or Introduction to Psychology or Introduction to Sociology	3
ECE 2013	Introduction to Multicultural Early Childhood Education	3
MAS 2023	Latino Cultural Expressions (core)	3
Life & Physical Sciences core		3
Credit Hours		15

Spring

ECE 2123 or BBL 2123	Diversity in Early Childhood or Diversity in Early Childhood	3
EDP 2113	Theories of Learning	3
HTH 3013	Survey of Human Nutrition	3
SPE 3603	Introduction to Special Education	3

Select Intended Minor:

BBL 3053	Foundations of Bilingual Studies ¹	3
or		
SPE 3633	Classroom and Behavior Management for Students with Disabilities ²	3
Credit Hours		15

Third Year

Fall

COU 3203	Child Abuse and Domestic Violence	3
ECE 3143	Child Growth and Development	3
ECE 3313	Play, Creativity, and Learning	3
ECE 3603	Language and Literacy Acquisition	3
ESL 3003	Language and Schooling	3

Minor courses:

BBL 3143	Children's Literature for Bilingual Learners ¹	3
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or

SPE 4673	Instruction for Students with Autism Spectrum Disorders and Developmental Disabilities ²	3
Credit Hours		18

Spring

ECE 3133	Programs and Policies in Early Childhood Education	3
ECE 3153	Movement, Music and Health in Early Childhood	3
LTED 3643	Children's Literature for Young Diverse Learners - Infants and Toddlers	3

Minor courses:

BBL 3043	Social Psychological Considerations in Mexican American Communities ¹	3
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BBL 3133	Language Development in Bilinguals ¹	3
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or

SPE 3303	Applied Behavior Analysis in Early Childhood ²	3
SPE 3653	Practicum in Special Education (Mild/Moderate Disabilities) ²	3
Credit Hours		15

Fourth Year

Fall

ECE 4103	Guidance of Young Children in Groups	3
ECE 4123	Family and Community Resources in Early Childhood	3
ECE 4153	Culturally Appropriate Assessment for Infants and Young Children	3
ECE 4253	STEM in Early Childhood Contexts	3

Minor courses:

BBL 4043	Dual Language Education in Early Childhood ¹	3
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or

SPE 3673	Assessment: Students with ASD and Developmental Disabilities ²	3
Credit Hours		15

Spring

ECE 4653	Leadership and Management of Early Childhood Settings	3
ECE 4342	Internship in Multicultural Early Childhood Development I - Infants	2
ECE 4412	Internship in Multicultural Early Childhood Development II - Toddlers	2
ECE 4552	Internship in Multicultural Early Childhood Development III - Preschool	2

Minor courses:

ESL 4023	Teaching and Learning Language Development of Young Emergent Bilinguals ¹	3
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or

SPE 4683	Communication and Collaboration in Special Education ²	3
Credit Hours		12
Total Credit Hours		120

¹ Minor in Early Dual Immersion

² Minor in Early Intervention (with BCaBA certificate option)

- B.A. degree in Interdisciplinary Studies (Early Childhood–Grade 6 Core Subjects Certification Concentration) (p. 85)
- B.A. degree in Interdisciplinary Studies (Grades 4–8 Core Subjects Certification Concentration) (p. 87)
- B.A. degree in Interdisciplinary Studies (Grades 4–8 Language Arts/Reading/Social Studies Certification Concentration) (p. 89)
- B.A. degree in Interdisciplinary Studies (Grades 4–8 Mathematics/Science Certification Concentration) (p. 91)
- B.A. degree in Interdisciplinary Studies (EC–12 Special Education Certification Concentration) (p. 93)

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 <http://www.tea.state.tx.us>.

Bachelor of Arts Degree in Interdisciplinary Studies (Early Childhood–Grade 6 Core Subjects Certification Concentration)

The minimum number of semester credit hours required for the IDS degree with Early Childhood–Grade 6 core subjects certification is 125, 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 B.A. 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.

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 Life and Natural Sciences. All IDS majors must complete AIS 1203, and either AAS 2013 or MAS 2013 is recommended to satisfy the core requirements in Language, Philosophy and Culture. HIS 2053 is recommended to satisfy a core requirement in American History. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences. MAS 2023 is recommended to satisfy the core requirement in Creative Arts.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

IDS Degree Requirements

A. IDS core courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS support courses

IDS 2403 & IDS 3201 or IDS 3234	Physical Science and Inquiry in Physical Science Investigations in Physical Science	4
IDS 2413 & IDS 3211 or IDS 3224	Earth Systems Science and Inquiry in Earth Systems Science Earth Systems Science Investigations	4
MAT 1153	Essential Elements in Mathematics I	3
MAT 1163	Essential Elements in Mathematics II	3
Total Credit Hours		29

Certification Requirements

BBL 3403	Cultural and Linguistic Equity for Schooling	3
ECE 3143	Child Growth and Development	3
ECE 3313	Play, Creativity, and Learning	3
ECE 3603	Language and Literacy Acquisition	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3

ESL 3023	Second Language Teaching and Learning in EC-6	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
LTED 3513	Children's Literature EC-6	3
LTED 3813	Writing Development and Instruction-EC-6	3
SPE 3603	Introduction to Special Education	3

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

LTED 3823	Reading Comprehension-EC-6	3
LTED 4833	Organizing Literacy Programs for Differentiated Instruction-EC-6	3

Total Credit Hours 36

Professional Education Requirements

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	3
C&I 4353	Approaches to Teaching Science EC-6	3
C&I 4403	Approaches to Teaching Mathematics EC-6	3
C&I 4616	Clinical Teaching: Early Childhood-Grade 6	6
ECE 4143	Principles and Practices of Differentiated Education EC-6	3
ECE 4203	Assessment and Evaluation in EC-6	3

Total Credit Hours 21

B.A. in Interdisciplinary Studies, Early Childhood-Grade 6 Core Subjects Certification Concentration – Recommended Four-Year Academic Plan

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1233	Contemporary Biology I (core)	3
MAT 1023	College Algebra with Applications (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History core		3
	Credit Hours	15

Spring

AST 1033 or PHY 1013	Exploration of the Solar System (core) or Universes	3
HIS 2053	Texas History (core)	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
	Credit Hours	15

Summer		
POL 1133	Texas Politics and Society (core)	3
IDS 2113	Society and Social Issues (core and major)	3
Component Area Option core		3
Credit Hours		9

Second Year		
Fall		
AAS 2013 or MAS 2013	Introduction to African American Studies (core) or Introduction to Chicano(a) Studies	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 3123	Culture, Literature, and Fine Arts	3
MAT 1153	Essential Elements in Mathematics I	3
Creative Arts core (MAS 2023 recommended)		3
Credit Hours		15

Spring		
IDS 2403	Physical Science	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3201	Inquiry in Physical Science	1
MAT 1163	Essential Elements in Mathematics II	3
Credit Hours		10

Summer		
IDS 2413	Earth Systems Science	3
IDS 3211	Inquiry in Earth Systems Science	1
SPE 3603	Introduction to Special Education	3
Credit Hours		7

Third Year		
Fall		
Admission to the Teacher Certification Program		
IDS 3003	STEM in Social Contexts	3
ECE 3143	Child Growth and Development ¹	3
ECE 3313	Play, Creativity, and Learning ¹	3
ECE 3603	Language and Literacy Acquisition ¹	3
LTED 3513	Children’s Literature EC–6 ¹	3
Credit Hours		15

Spring		
(must be taken Fall or Spring semesters)		
C&I 4353	Approaches to Teaching Science EC–6 ²	3
C&I 4403	Approaches to Teaching Mathematics EC–6 ²	3
ECE 4203	Assessment and Evaluation in EC–6 ²	3
LTED 3823	Reading Comprehension-EC–6	3
Credit Hours		12

Summer		
BBL 3403	Cultural and Linguistic Equity for Schooling	3

IDS 3713	Interdisciplinary Inquiry	3
Credit Hours		6

Fourth Year		
Fall		
(must be taken Fall or Spring semesters)		
C&I 4303	Approaches to Teaching Social Studies Incorporating Language Arts and Fine Arts EC–6 ³	3
ECE 4143	Principles and Practices of Differentiated Education EC–6 ³	3
ESL 3023	Second Language Teaching and Learning in EC–6	3
LTED 3813	Writing Development and Instruction-EC–6	3
LTED 4833	Organizing Literacy Programs for Differentiated Instruction-EC–6	3
Credit Hours		15

Spring		
(must be taken Fall or Spring semesters)		
C&I 4616	Clinical Teaching: Early Childhood–Grade 6	6
Credit Hours		6
Total Credit Hours		125

- ¹ Must be taken concurrently.
- ² Must be taken concurrently.
- ³ Must be taken concurrently.

Bachelor of Arts Degree in Interdisciplinary Studies (Grades 4–8 Core Subjects Certification Concentration)

The minimum number of semester credit hours required for the IDS degree with grades 4–8 core subjects certification 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 B.A. 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.

MAT 1023 should be used to satisfy the core requirement in Mathematics. BIO 1233 and BIO 1243 should be used to satisfy the core requirement in Life and Natural Sciences. All IDS majors must complete AIS 1203, and either AAS 2013 or MAS 2013 is recommended to satisfy the core requirements in Language, Philosophy and Culture. HIS 2053 is recommended to satisfy a core requirement in American History. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences. MAS 2023 is recommended to satisfy the core requirement in Creative Arts. GES 1013 is recommended to satisfy the Component Area Option.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

IDS Degree Requirements

A. IDS core courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS support courses

BBL 3403	Cultural and Linguistic Equity for Schooling	3
GES 1013	Fundamentals of Geography	3
IDS 2403	Physical Science	3
IDS 2413	Earth Systems Science	3
MAT 1153	Essential Elements in Mathematics I	3
MAT 1163	Essential Elements in Mathematics II	3
Total Credit Hours		33

Certification Requirements

EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
EDP 4203	Assessment and Evaluation	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
LTED 3523	Reading for Teachers-Grades 4–8 (see correction below)	3
LTED 3633	Literature and Other Texts Across the Content Areas-Grades 4–8	3
LTED 3803	Writing Development, Processes, and Instruction-Grades 4–8	3
SPE 3603	Introduction to Special Education	3
The following course requires an advisor code and is restricted to students who have applied for and been accepted into the Teacher Certification Program.		
LTED 3533	Reading and Writing Across the Disciplines-Grades 4–8	3
Total Credit Hours		30

* **Correction:** LTED 3523 Reading for Teachers-Grades 4–8 must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4626 Clinical Teaching: Grades 4–8.

Professional Education Requirements

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	3
C&I 4443	Approaches to Teaching Mathematics—Grades 4–8	3
C&I 4543	Approaches to Teaching Social Studies—Grades 4–8	3
C&I 4603	Classroom Management Strategies—Grades 4–8	3
C&I 4623	Applied Teaching: Grades 4–8	3
C&I 4626	Clinical Teaching: Grades 4–8	6
Total Credit Hours		21

B.A. in Interdisciplinary Studies, Grades 4–8 Core Subjects Certification Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1023	College Algebra with Applications (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Life & Physical Sciences core (BIO 1233 recommended)		3
American History core (HIS 1053 recommended)		3
Credit Hours		15

Spring

IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
IDS 2113	Society and Social Issues (core and major)	3
WRC 1023	Freshman Composition II (Q) (core)	3
American History core (HIS 2053 recommended)		3
Life & Physical Sciences core (BIO 1243 recommended)		3
Credit Hours		15

Summer

IDS 2403 or IDS 3234	Physical Science or Investigations in Physical Science	3
IDS 2413 or IDS 3224	Earth Systems Science or Earth Systems Science Investigations	3
Credit Hours		6

Second Year

Fall		
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 3003	STEM in Social Contexts	3
MAT 1153	Essential Elements in Mathematics I	3

POL 1013	Introduction to American Politics (core)	3
Language, Philosophy & Culture core (AAS 2013 or MAS 2013 recommended)		3
Credit Hours		15

Spring

GES 1013	Fundamentals of Geography (core and major)	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
MAT 1163	Essential Elements in Mathematics II	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Creative Arts core (MAS 2023 recommended)		3
Credit Hours		15

Third Year

Fall

Admission to the Teacher Certification Program		
BBL 3403	Cultural and Linguistic Equity for Schooling	3
EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
LTED 3523	Reading for Teachers-Grades 4–8	3
LTED 3803	Writing Development, Processes, and Instruction-Grades 4–8	3
Credit Hours		15

Spring

EDP 4203	Assessment and Evaluation ¹	3
IDS 3123	Culture, Literature, and Fine Arts	3
LTED 3533	Reading and Writing Across the Disciplines-Grades 4–8	3
LTED 3633	Literature and Other Texts Across the Content Areas-Grades 4–8	3
SPE 3603	Introduction to Special Education	3
Credit Hours		15

Summer

IDS 3713	Interdisciplinary Inquiry	3
Credit Hours		3

Fourth Year

Fall

C&I 4433	Approaches to Teaching Science–Grades 4–8 ^{1,2}	3
C&I 4443	Approaches to Teaching Mathematics–Grades 4–8 ^{1,2}	3
C&I 4543	Approaches to Teaching Social Studies–Grades 4–8 ^{1,2}	3
C&I 4603	Classroom Management Strategies–Grades 4–8 ^{1,2}	3
C&I 4623	Applied Teaching: Grades 4–8 ^{1,2}	3
Credit Hours		15

Spring

C&I 4626	Clinical Teaching: Grades 4–8 ³	6
Credit Hours		6
Total Credit Hours		120

- ¹ Admission to the Teacher Certification Program is required.
- ² Must be taken concurrently.
- ³ A grade of "C-" or better is required to be recommended for the Teacher Certificate.

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 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 B.A. 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.

MAT 1023 should be used to satisfy the core requirement in Mathematics. BIO 1233 and BIO 1243 should be used to satisfy the core requirement in Life and Natural Sciences. All IDS majors must complete AIS 1203, and either AAS 2013 or MAS 2013 is recommended to satisfy the core requirements in Language, Philosophy and Culture. HIS 2053 is recommended to satisfy a core requirement in American History. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences. MAS 2023 is recommended to satisfy the core requirement in Creative Arts. COM 2113 is recommended to satisfy the Component Area Option.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

IDS Degree Requirements

A. IDS core courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3

IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS support courses

BBL 3403	Cultural and Linguistic Equity for Schooling	3
GES 1013	Fundamentals of Geography	3
HIS 1043	United States History: Pre-Columbus to Civil War Era (3 hours in addition to the History courses used to satisfy the core requirements)	3
or HIS 1053	United States History: Civil War Era to Present	
or HIS 2053	Texas History	
HIS 3623	History of the Civil Rights Movement	3
or HIS 3843	Migration and History	
HIS 3123	Colonial Texas under Spanish and Mexican Rule to 1836	3
or GES 3153	Geography of Texas	
ENG 3303	Theory and Practice of Composition	3
Total Credit Hours		33

Certification Requirements

EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
EDP 4203	Assessment and Evaluation	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
LTED 3523	Reading for Teachers-Grades 4–8 (see correction below)	3
LTED 3633	Literature and Other Texts Across the Content Areas-Grades 4–8	3
LTED 3803	Writing Development, Processes, and Instruction-Grades 4–8	3
SPE 3603	Introduction to Special Education	3
The following course requires an advisor code and is restricted to students who have applied for and been accepted into the Teacher Certification Program.		
LTED 3533	Reading and Writing Across the Disciplines-Grades 4–8	3
Total Credit Hours		30

* **Correction:** LTED 3523 Reading for Teachers-Grades 4–8 must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4626 Clinical Teaching: Grades 4–8.

Professional Education Requirements

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 4543	Approaches to Teaching Social Studies–Grades 4–8	3
C&I 4553	Approaches to Service-Learning in Social Studies–Grades 4–8	3

C&I 4603	Classroom Management Strategies–Grades 4–8	3
C&I 4623	Applied Teaching: Grades 4–8	3
C&I 4626	Clinical Teaching: Grades 4–8	6
Total Credit Hours		18

B.A. in Interdisciplinary Studies, Grades 4–8 Language Arts/Reading/Social Studies Certification Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043	United States History: Pre-Columbus to Civil War Era (core and major)	3
MAT 1023	College Algebra with Applications (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Life & Physical Sciences core (BIO 1233 recommended)		3
Credit Hours		15

Spring

HIS 1053	United States History: Civil War Era to Present (core and major)	3
IDS 2113	Society and Social Issues (core and major)	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
WRC 1023	Freshman Composition II (Q) (core)	3
Life & Physical Sciences core (BIO 1243 recommended)		3
Credit Hours		15

Summer

HIS 2053	Texas History	3
Component Area Option core (COM 2113 recommended)		3
Credit Hours		6

Second Year

Fall		Credit Hours
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
HIS 3623	History of the Civil Rights Movement	3
or HIS 3843	Migration and History	
IDS 3003	STEM in Social Contexts	3
POL 1013	Introduction to American Politics (core)	3
Language, Philosophy & Culture core (AAS 2013 or MAS 2013 recommended)		3
Credit Hours		15

Spring

ENG 3303	Theory and Practice of Composition	3
HIS 3123	Colonial Texas under Spanish and Mexican Rule to 1836	3
or GES 3153	Geography of Texas	

IDS 3013	Diversity, Equity, and the Social Sciences	3
POL 1133	Texas Politics and Society (core)	3
MAS 2023	Latino Cultural Expressions (core)	3
Credit Hours		15

Third Year

Fall

ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
GES 1013	Fundamentals of Geography	3
IDS 3713	Interdisciplinary Inquiry	3
IDS 3123	Culture, Literature, and Fine Arts	3
LTED 3803	Writing Development, Processes, and Instruction-Grades 4–8	3
Credit Hours		15

Spring

BBL 3403	Cultural and Linguistic Equity for Schooling	3
EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
LTED 3523	Reading for Teachers-Grades 4–8	3
LTED 3633	Literature and Other Texts Across the Content Areas-Grades 4–8	3
SPE 3603	Introduction to Special Education	3
Credit Hours		15

Summer

EDP 4203	Assessment and Evaluation	3
Credit Hours		3

Fourth Year

Fall

C&I 4543	Approaches to Teaching Social Studies–Grades 4–8 ¹	3
C&I 4553	Approaches to Service-Learning in Social Studies–Grades 4–8 ¹	3
C&I 4603	Classroom Management Strategies–Grades 4–8 ¹	3
C&I 4623	Applied Teaching: Grades 4–8 ¹	3
LTED 3533	Reading and Writing Across the Disciplines-Grades 4–8	3
Credit Hours		15

Spring

C&I 4626	Clinical Teaching: Grades 4–8 ²	6
Credit Hours		6
Total Credit Hours		120

¹ Admission to the Teacher Certification Program is required. Courses must be taken concurrently.

² A grade of "C-" or better is required to be recommended for the Teacher Certificate.

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 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 B.A. 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.

MAT 1023 should be used to satisfy the core requirement in Mathematics. BIO 1233 and AST 1013 or AST 1033 should be used to satisfy the core requirement in Life and Natural Sciences. All IDS majors must complete AIS 1203, and either AAS 2013 or MAS 2013 is recommended to satisfy the core requirements in Language, Philosophy and Culture. HIS 2053 is recommended to satisfy a core requirement in American History. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences. MAS 2023 is recommended to satisfy the core requirement in Creative Arts. COM 2113 is recommended to satisfy the Component Area Option.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

IDS Degree Requirements

A. IDS core courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS support courses

AST 1013	Introduction to Astronomy	3
or AST 1033	Exploration of the Solar System	
IDS 2403	Physical Science	3
IDS 2413	Earth Systems Science	3
IDS 3201	Inquiry in Physical Science	1
IDS 3211	Inquiry in Earth Systems Science	1

MAT 1093	Precalculus	3
MAT 2113	Functions and Modeling	3
MAT 3103	Data Analysis and Interpretation	3
MAT 3123	Fundamentals of Geometry	3
PHY 1603	Algebra-based Physics I	3
PHY 1611	Algebra-based Physics I Laboratory	1
Total Credit Hours		42

Certification Requirements

EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
EDP 4203	Assessment and Evaluation	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
SPE 3603	Introduction to Special Education	3
LTED 3523	Reading for Teachers-Grades 4–8 (see correction below)	3
The following course requires an advisor code and is restricted to students who have applied for and been accepted into the Teacher Certification Program.		
LTED 3533	Reading and Writing Across the Disciplines-Grades 4–8	3
Total Credit Hours		24

* **Correction:** LTED 3523 Reading for Teachers-Grades 4–8 must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4626 Clinical Teaching: Grades 4–8.

Professional Education Requirements

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	3
C&I 4443	Approaches to Teaching Mathematics—Grades 4–8	3
C&I 4603	Classroom Management Strategies—Grades 4–8	3
C&I 4623	Applied Teaching: Grades 4–8	3
C&I 4626	Clinical Teaching: Grades 4–8	6
Total Credit Hours		18

B.A. in Interdisciplinary Studies, Grades 4–8 Mathematics/Science Certification Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1023	College Algebra with Applications (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History core (HIS 1053 recommended)		3

Life & Physical Sciences core (BIO 1233 recommended)	3	
Credit Hours		15

Spring

AST 1013 or AST 1033	Introduction to Astronomy (core and major) or Exploration of the Solar System	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
MAT 1093	Precalculus	3
WRC 1023	Freshman Composition II (Q) (core)	3
American History core (HIS 2053 recommended)		3
Credit Hours		15

Summer

IDS 2403 & IDS 3211	Physical Science and Inquiry in Earth Systems Science	4
or		
IDS 3224	Earth Systems Science Investigations	
Component Area Option core (COM 2113 recommended)		3
Credit Hours		7

Second Year

Fall

EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 2113	Society and Social Issues (core and major)	3
MAT 2113	Functions and Modeling	3
POL 1013	Introduction to American Politics (core)	3
Language, Philosophy & Culture core (AAS 2013 or MAS 2013 recommended)		3
Credit Hours		15

Spring

IDS 3013	Diversity, Equity, and the Social Sciences	3
MAT 3123	Fundamentals of Geometry	3
PHY 1603	Algebra-based Physics I	3
PHY 1611	Algebra-based Physics I Laboratory	1
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Creative Arts core (MAS 2023 recommended)		3
Credit Hours		16

Summer

IDS 2413 & IDS 3201	Earth Systems Science and Inquiry in Physical Science	4
IDS 3234	Investigations in Physical Science	
Credit Hours		4

Third Year

Fall

Admission to the Teacher Certification Program

EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
IDS 3003	STEM in Social Contexts	3
IDS 3123	Culture, Literature, and Fine Arts	3
MAT 3103	Data Analysis and Interpretation	3
Credit Hours		12
Spring		
EDP 4203	Assessment and Evaluation ¹	3
ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
IDS 3713	Interdisciplinary Inquiry	3
LTED 3523	Reading for Teachers-Grades 4–8	3
SPE 3603	Introduction to Special Education	3
Credit Hours		15
Fourth Year		
Fall		
C&I 4433	Approaches to Teaching Science–Grades 4–8 ^{1, 2}	3
C&I 4443	Approaches to Teaching Mathematics–Grades 4–8 ^{1, 2}	3
C&I 4603	Classroom Management Strategies–Grades 4–8 ^{1, 2}	3
C&I 4623	Applied Teaching: Grades 4–8 ^{1, 2}	3
LTED 3533	Reading and Writing Across the Disciplines-Grades 4–8	3
Credit Hours		15
Spring		
C&I 4626	Clinical Teaching: Grades 4–8 ³	6
Credit Hours		6
Total Credit Hours		120

¹ Admission to the Teacher Certification Program is required.

² Must be taken concurrently.

³ A grade of "C-" or better is required to be recommended for the Teacher Certificate.

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. All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below. The following courses have been approved by the Behavior Analyst Certification Board to align with the Board Certified Assistant Behavior Analyst task list: SPE 3303, SPE 3633, SPE 3673, SPE 4673, and SPE 4683.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.A. 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.

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 Life and Physical Sciences. AAS 2013 or MAS 2013 is recommended to satisfy the core requirement in Language, Philosophy, and Culture. MAS 2023 should be used to satisfy the core requirement in Creative Arts. HIS 2053 is recommended to satisfy a core requirement in American History. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

IDS Degree Requirements

A. IDS core courses

IDS 2113	Society and Social Issues	3
IDS 3003	STEM in Social Contexts	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
IDS 3123	Culture, Literature, and Fine Arts	3
IDS 3713	Interdisciplinary Inquiry	3

B. IDS support courses

MAT 1153	Essential Elements in Mathematics I	3
MAT 1163	Essential Elements in Mathematics II	3
Total Credit Hours		21

Certification Requirements

ECE 3603	Language and Literacy Acquisition	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
LTED 3523	Reading for Teachers-Grades 4–8	3
LTED 3803	Writing Development, Processes, and Instruction-Grades 4–8	3
SPE 3603	Introduction to Special Education	3
SPE 3693	Special Education Law	3

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 of Students with Mild/Moderate Disabilities	3
SPE 3633	Classroom and Behavior Management for Students with Disabilities	3

SPE 3673	Assessment: Students with ASD and Developmental Disabilities	3
SPE 3683	Special Education Across the Lifespan	3
SPE 4683	Communication and Collaboration in Special Education	3
SPE 4693	Assistive Technology	3
Total Credit Hours		39

POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15

Spring

AST 1033 or PHY 1013	Exploration of the Solar System (core) or Universes	3
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HIS 2053	Texas History (core)	3
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IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
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IDS 2113	Society and Social Issues (core and major)	3
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WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		15

Summer

AAS 2013 or MAS 2013	Introduction to African American Studies (core) or Introduction to Chicano(a) Studies	3
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MAS 2023	Latino Cultural Expressions (core)	3
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POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
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Component Area Option core		3
Credit Hours		12

Second Year

Fall

EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
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IDS 3123	Culture, Literature, and Fine Arts	3
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MAT 1153	Essential Elements in Mathematics I	3
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LTED 3803	Writing Development, Processes, and Instruction-Grades 4–8	3
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American History core		3
Credit Hours		15

Spring

ECE 3603	Language and Literacy Acquisition	3
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IDS 3013	Diversity, Equity, and the Social Sciences	3
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MAT 1163	Essential Elements in Mathematics II	3
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SPE 3603	Introduction to Special Education	3
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SPE 3693	Special Education Law	3
Credit Hours		15

Third Year

Fall

Admission to the Teacher Certification Program		
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LTED 3523	Reading for Teachers-Grades 4–8	3
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SPE 3623	Assessment of Students with Mild/Moderate Disabilities ¹	3
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SPE 3653	Practicum in Special Education (Mild/Moderate Disabilities) ¹	3
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Professional Education Requirements

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 (Mild/Moderate Disabilities)	3
SPE 4623	Mathematics Instruction for Students with Disabilities	3
SPE 4643	Instruction for Students with Mild/Moderate Disabilities	3
SPE 4653	Practicum in Special Education (Moderate/Severe Disabilities)	3
SPE 4673	Instruction for Students with Autism Spectrum Disorders and Developmental Disabilities	3

Clinical Teaching:

C&I 4716	Clinical Teaching: All Level EC–12	6
Total Credit Hours		21

New Course

SPE 4681. Ethics in Applied Behavior Analysis Research and Practice. (1-0) 1 Credit hour.

This course provides students with 15 hours of instruction addressing the Behavior Analyst Certification Board's Professional and Ethical Compliance Code (The CODE). Students will learn how to engage in ethical applied behavior analysis (ABA) research and practice through advanced coverage of The CODE. The objective of this course is to demonstrate sound ethical decision making in response to examples of scenarios commonly encountered in ABA research and practice in clinical and educational settings. Prerequisites for this course are SPE 3303 and SPE 3633. Concurrent enrollment or prior completion of SPE 3673 or SPE 4673, and SPE 4683 is required. Prior completion of SPE 4683 is recommended because the current course will provide coverage of content from SPE 4683. May be repeated once for credit. Possible Course Fees: LRH1 \$10; STSH \$5.

B.A. in Interdisciplinary Studies, EC–12 Special Education Certification Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1233	Contemporary Biology I (core)	3
MAT 1023	College Algebra with Applications (core)	3

SPE 4623	Mathematics Instruction for Students with Disabilities ¹	3
SPE 4643	Instruction for Students with Mild/Moderate Disabilities ¹	3
Credit Hours		15
Spring		
IDS 3003	STEM in Social Contexts	3
SPE 3633	Classroom and Behavior Management for Students with Disabilities ²	3
SPE 3673	Assessment: Students with ASD and Developmental Disabilities ²	3
SPE 3683	Special Education Across the Lifespan ²	3
SPE 4673	Instruction for Students with Autism Spectrum Disorders and Developmental Disabilities ²	3
Credit Hours		15
Fourth Year		
Fall		
IDS 3713	Interdisciplinary Inquiry	3
SPE 4653	Practicum in Special Education (Moderate/Severe Disabilities) ³	3
SPE 4683	Communication and Collaboration in Special Education ³	3
SPE 4693	Assistive Technology ³	3
Credit Hours		12
Spring		
C&I 4716	Clinical Teaching: All Level EC–12	6
Credit Hours		6
Total Credit Hours		120

- ¹ Must be taken concurrently.
- ² Must be taken concurrently.
- ³ Must be taken concurrently.

Secondary Certification Programs

Students seeking certification to teach at the secondary level (grades 7–12) 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 their academic advisor 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 33. 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

(For proper sequencing of these courses, students should consult a certification advisor.)

BBL 3403	Cultural and Linguistic Equity for Schooling	3
EDP 3203	Learning and Development in the Secondary School Adolescent	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
SPE 3603	Introduction to Special Education	3

Professional Education and Reading Coursework

Students must be admitted to the Teacher Certification Program before enrolling in Professional Education and Clinical Teaching coursework.

C&I 4203	Models of Teaching in the Content Areas of the Secondary School	3
EDP 4203	Assessment and Evaluation	3
LTED 3773	Reading and Writing Across the Disciplines- Grades 7–12	3

C&I 4203, EDP 4203, and LTED 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 during the Summer semester.

Clinical Teaching Component

C&I 4646	Clinical Teaching: Grades 7–12	6
Total Credit Hours		33

Department of Kinesiology, Health, and Nutrition

The Department of Kinesiology, Health, and Nutrition offers Bachelor of Science degrees for students majoring in Health, Kinesiology, and Public Health with a concentration in Health Promotion and Behavioral Science. Minors in Community Health, Wellness, and a Certificate in Athletic Coaching are also offered. The Department also offers a dual degree leading to a Bachelor of Science in Nutrition and Dietetics and a Master of Dietetics Studies within the Coordinated Program in Dietetics.

The Health degree and the Public Health degree with a concentration in Health Promotion and Behavioral Science provide 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 degrees require both academic coursework and practical experience via an internship and help to prepare students for admission to graduate programs in public health and health promotion. Students interested in pursuing a major or minor in Health or Public Health are required to consult with their academic advisor.

Students pursuing a Bachelor of Science degree in Kinesiology may select a concentration in athletic training, kinesiology and health science, exercise physiology or physical education. Students with a concentration

in athletic training are prepared to pursue state licensure in athletic training careers. The student must be admitted into the Athletic Training Apprenticeship Program within the UTSA Athletic Department in order to pursue this concentration. National certification in athletic training requires additional academic training in an accredited graduate program. Students with a concentration in kinesiology and health science are prepared to pursue careers in health care such as physical therapy and/or occupational therapy. Physical and/or occupational therapy licensure requires additional academic training in an accredited graduate program. Students with a concentration in exercise physiology are trained for careers in exercise science, clinical exercise, and fitness programming in corporate, commercial, medical 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.

The overall mission of the Coordinated Program in Dietetics (CPD) is to prepare entry-level dietitians who positively impact the nutritional status and health of individuals and the community, particularly those living in South Texas, through a solid academic education, service, and scholarship. The CPD offers a rigorous didactic curriculum that is integrated with over 1200 clock hours of supervised experiences, aimed at preparing entry level practitioners. Students who successfully complete all of the CPD requirements receive a verification of eligibility to take the national exam administered by the Commission of Dietetics Registration to become a Registered Dietitian (RD). Dietetics professionals are instrumental in assessing the nutritional needs of individuals, interpreting the science of food and nutrition to promote health, prevent diseases, and implement medical nutrition therapy for various diseases and illnesses. Registered dietitians are employed by healthcare facilities such as hospitals, long-term care facilities, and clinics; sports, wellness and fitness centers; food service operations, industry, pharmaceutical and food companies; community programs and public health; government agencies, private practice, and professional health organizations.

Department Honors

The Department of Kinesiology, Health, and Nutrition 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.

Criminal History Policy and Acknowledgement

The College of Education and Human Development (COEHD) prepares educators and professionals for fields which require fieldwork, internship, practicum, service-learning and/or clinical teaching. Placements occur in educational, clinical, health care facilities, hospital, and/or medical settings which require a criminal background check. The University of Texas at San Antonio is required to inform students of the requirements set forth by the Texas Occupation Code, Chapter 53, Sections 53.001 through 53.105 (<http://www.texas-statutes.com/occupations-code/chapter-53-consequences-of-criminal-conviction>).

All COEHD prospective students in a licensure or certification program are required to acknowledge that they have been made aware of these requirements and that they have read the COEHD Criminal History Policy (http://education.utsa.edu/certification_program/criminal_history_policy). For more information and for completing the acknowledgement form, please visit the Office of Professional Preparation, Assessment, and Accreditation in the College of Education and Human Development.

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- B.S. degree in Health (Community Health and Preventive Services Specialization) (p. 96)
 - B.S. degree in Public Health (Health Promotion and Behavioral Science Concentration) (p. 99)

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 (B.S.) 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 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.

Applicants admitted to UTSA under this catalog beginning Fall 2019 will be directly admitted to the Health major if they:

- meet all UTSA undergraduate admission requirements, and
- are ranked in the top 10 percent of their high school class, or
- are ranked in the top 15 percent of their high school class and have a minimum 1350 SAT* or 29 ACT score.

* *New SAT scores combine Evidence-Based Reading and Writing and Math.*

Applicants admitted to UTSA under this catalog beginning Fall 2019 who do not meet the criteria for direct admission stated above will be admitted to University College under "Life and Health Sciences Studies." All applicants for admission to the Health degree prior to Fall 2019 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 or Life and Health Science Studies 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 (Q)	3
WRC 1023	Freshman Composition II (Q)	3
HTH 2413	Introduction to Community and Public Health	3

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, and
- have completed 30 semester credit hours.

A pre-health or Life and Health Science Studies 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 or Life and Health Science Studies student and their major will be changed 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 Life and Health Sciences Advising Center.

The minimum number of semester credit hours 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.

Internship Policy

Experiential learning is a valuable element for health 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 education activities carried out in a health-oriented organization. All Health majors are expected to complete an internship (6 semester credit hours, 300 hours of time on site).

Internship Eligibility

Health 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 2.5
- are within 13 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 program coordinator 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 enrolling in the internship. 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. Students must bring a signed degree plan from their advisor to the mandatory internship meeting.

Students who miss the meeting may be ineligible for the internship in the following semester. Extenuating circumstances must be documented and will be considered on a case-by-case basis by the internship coordinator.

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 from the academic advisor, with written documentation to a three-member review committee. Prior work experience is defined as a minimum of one year of 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 appeal 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.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. degree in Health must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and 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.

STA 1053 should be used to satisfy the core requirement in Mathematics. BIO 1233 should be used to satisfy one of the Life and Physical Sciences core requirements. HTH 2413 should be used to satisfy the core requirement in Social and Behavioral Sciences. COM 2113 should be used to satisfy the core requirement in the Component Area Option.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3

Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

All candidates for the degree must complete the following degree requirements in addition to the Core Curriculum requirements.

Gateway Courses

Students pursuing the B.S. degree in Health must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

HTH 2413	Introduction to Community and Public Health
HTH 3503	Theories of Health Behavior

Degree Requirements

A. Degree core requirements

HTH 2413	Introduction to Community and Public Health	3
HTH 2601	Field-Based Skills in Community Health and Preventive Services	1
HTH 2623	Database Management in Community and Public Health	3
HTH 3503	Theories of Health Behavior	3
HTH 3513	Community Health	3
HTH 3663	Program Planning and Evaluation	3
HTH 4503	Human Disease and Epidemiology	3
HTH 4513	Consumer Health	3
HTH 4543	Environmental Health and Safety	3
HTH 4921	Capstone for Community Health and Preventive Services	1
HTH 4936	Internship in Health	6

B. Support work

BIO 1233	Contemporary Biology I	3
BIO 2053 & BIO 2051	Human Anatomy and Physiology I and Human Anatomy and Physiology Laboratory I	4
BIO 2063 & BIO 2061	Human Anatomy and Physiology II and Human Anatomy and Physiology Laboratory II	4
COM 2113	Public Speaking	3
MAT 1023	College Algebra with Applications	3
STA 1053	Basic Statistics	3

C. Designated electives

Select 15 semester credit hours of the following: 15

Select at least two of the following four courses:

HTH 3303	Physical Activity and Health
HTH 3533	Drugs and Health
HTH 4523	Understanding Human Sexuality
HTH 4533	Nutrition and Health

Additional designated electives can be taken from the following courses:

HTH 2133	School Health
HTH 2513	Personal Health
HTH 3003	Survey of Drugs and Health
HTH 3013	Survey of Human Nutrition
HTH 3023	Survey of Human Sexuality
HTH 3043	Principles of Weight Management
HTH 3523	Worksite Health Promotion
HTH 3543	Growth and Development
HTH 3553	Emotional Wellness
HTH 3563	Child and Adolescent Health Promotion
HTH 4953	Special Studies in Health
MGT 3013	Introduction to Organization Theory, Behavior, and Management
or MGT 4953	Special Studies in Management

D. Free electives 23

All candidates for this degree must complete up to 23 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.

Total Credit Hours	90
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B.S. in Health – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1023	College Algebra with Applications	3
WRC 1013	Freshman Composition I (Q) (core)	3
University core course		3
University core course		3
Credit Hours		15

Spring

BIO 1233	Contemporary Biology I (core)	3
HTH 2413	Introduction to Community and Public Health (core and major)	3
STA 1053	Basic Statistics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
University core course		3
Credit Hours		15

Second Year

Fall		
University core course		3
University core course		3
University core course		3
University core course		3
Free elective		2
Credit Hours		14

Spring

BIO 2053	Human Anatomy and Physiology I	3
BIO 2051	Human Anatomy and Physiology Laboratory I	1
COM 2113	Public Speaking ((core))	3

HTH 2601	Field-Based Skills in Community Health and Preventive Services	1
HTH 3503	Theories of Health Behavior	3
Free elective		3
Free elective		3
Credit Hours		17

Third Year**Fall**

BIO 2063	Human Anatomy and Physiology II	3
BIO 2061	Human Anatomy and Physiology Laboratory II	1
HTH 2623	Database Management in Community and Public Health	3
HTH 3513	Community Health	3
HTH 3663	Program Planning and Evaluation	3
Free elective		3
Credit Hours		16

Spring

HTH 4503	Human Disease and Epidemiology	3
Designated elective		3
Designated elective		3
Designated elective		3
Free elective		3
Credit Hours		15

Fourth Year**Fall**

HTH 4513	Consumer Health	3
HTH 4543	Environmental Health and Safety	3
Designated elective		3
Designated elective		3
Free elective		3
Credit Hours		15

Spring

HTH 4936	Internship in Health	6
HTH 4921	Capstone for Community Health and Preventive Services	1
Free elective		3
Free elective		3
Credit Hours		13
Total Credit Hours		120

Bachelor of Science Degree in Public Health (Health Promotion and Behavioral Science Concentration)

The Bachelor of Science (B.S.) 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 (p. 225) of the College of Liberal and Fine Arts (COLFA) and the Health Promotion and Behavioral Science concentration is offered by the Department of Kinesiology, Health, and Nutrition of the College of Education and Human Development (COEHD). Bachelor of Science in Public Health majors will be advised by the Life and Health Sciences Advising Center.

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

Admission Policy

The goal of admission requirements for the Public Health degree with a Health Promotion and Behavioral Science concentration is to provide 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.

Applicants admitted to UTSA under this catalog beginning Fall 2019 will be directly admitted to the Public Health major (Health Promotion and Behavioral Science concentration) if they:

- meet all UTSA undergraduate admission requirements, and
- are ranked in the top 10 percent of their high school class, or
- are ranked in the top 15 percent of their high school class and have a minimum 1350 SAT* or 29 ACT score.

* New SAT scores combine Evidence-Based Reading and Writing and Math.

Freshmen who do not meet the above requirements, but meet UTSA's general admission requirements will be part of "Life and Health Science Studies" where students will be able to work towards meeting the prerequisites needed to declare Public Health as their major.

Internship Policy

Experiential learning is a valuable element for health 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 education activities carried out in a health-oriented organization. All Public Health majors are expected to complete an internship (6 semester credit hours, 300 hours of time on site).

Internship Eligibility

Public Health 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 2.5
- are within 13 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 program coordinator 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 enrolling in the internship. 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. Students must bring a signed degree plan from their advisor to the mandatory internship meeting.

Students who miss the meeting may be ineligible for the internship in the following semester. Extenuating circumstances must be documented and will be considered on a case-by-case basis by the internship coordinator.

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 from the academic advisor, with written documentation to a three-member review committee. Prior work experience is defined as a minimum of one year of 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 appeal 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.

Core Curriculum requirements (42 semester credit hours)

Students seeking the B.S. degree in Public Health with a concentration in Health Promotion and Behavioral 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.

STA 1053 may be used to satisfy the core requirement in Mathematics as well as a major requirement. BIO 1404 and BIO 1414 may be used to satisfy the core requirement in Life and Physical Sciences as well as major requirements. SOC 1013 may be used to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Course

Students pursuing the B.S. degree in Public Health with a concentration in Health Promotion and Behavioral Science must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

HTH 3503 Theories of Health Behavior

Degree Requirements

All candidates for the B.S. degree in Public Health with a concentration in Health Promotion and Behavioral Science 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 38 semester credit hours of coursework:		
BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
HTH 3503	Theories of Health Behavior	3
HTH 4503	Human Disease and Epidemiology	3
HTH 4543	Environmental Health and Safety	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
PUB 1113	Introduction to Public Health	3
PUB 2113	Data Management in Public Health	3
SOC 3223	Population Dynamics and Demographic Techniques	3
SOC 4043	Global Health	3
SOC 4053	Health Care System	3

STA 1053 Basic Statistics 3

B. Health Promotion and Behavioral Science Concentration

All candidates for the degree in Public Health with a Health Promotion and Behavioral Science Concentration must complete the following 18 semester credit hours of coursework: 18

HTH 3663	Program Planning and Evaluation	
Select at least 15 semester credit hours from the following list of courses:		
ANT 3523	Medical Anthropology	
BIO 2003	Biology of Human Reproduction	
BIO 2043	Nutrition	
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 of Health	
SOC 2023	Social Context of Drug Use	
SOC 3213	Medical Sociology	

C. Advanced Public Health Requirement

All candidates for this degree must complete 6 hours of an internship in public health.

PUB 4933 Public Health Internship (repeated once) 6

D. Foreign Language

All candidates for this degree must complete 6 hours of coursework in a single foreign language. 6

E. Free electives

All candidates for this degree must complete up to 19 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. 19

Total Credit Hours 87

Course Sequence Guide for B.S. Degree in Public Health (Health Promotion and Behavioral Science Concentration)

This course sequence guide is designed to assist students in completing the requirements for their UTSA undergraduate Public Health degree with a concentration in Health Promotion and Behavioral Science.

This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor 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, Health Promotion and Behavioral Science Concentration – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
PUB 1113	Introduction to Public Health	3
SOC 1013	Introduction to Sociology (core)	3
STA 1053	Basic Statistics (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15

Spring

BIO 1404	Biosciences I (core and major)	4
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Language, Philosophy & Culture core		3
Credit Hours		16

Second Year

Fall

BIO 1414	Biosciences II (core and major)	4
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
HTH 3503	Theories of Health Behavior	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Creative Arts core		3
Credit Hours		16

Spring

PUB 2113	Data Management in Public Health	3
SOC 3223	Population Dynamics and Demographic Techniques	3
Component Area Option core		3
Free elective		3
Free elective		3
Credit Hours		15

Third Year

Fall

MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
SOC 4043	Global Health	3
Free elective		3
Free elective		3

Foreign language (semester I)		3
	Credit Hours	15
Spring		
HTH 3663	Program Planning and Evaluation (Concentration course)	3
HTH 4503	Human Disease and Epidemiology	3
HTH 4543	Environmental Health and Safety	3
SOC 4053	Health Care System	3
Foreign language (semester II)		3
	Credit Hours	15
Fourth Year		
Fall		
Concentration course		3
Concentration course		3
Concentration course		3
Free elective (upper-division)		3
Free elective (upper-division)		3
	Credit Hours	15
Spring		
PUB 4933	Public Health Internship (repeated)	6
Concentration course (upper-division)		3
Concentration course (upper-division)		3
Free elective (to meet 120 hour minimum)		1
	Credit Hours	13
	Total Credit Hours	120

Master of Public Health: 4+1 Program for Public Health Majors

This is a collaborative program between The University of Texas at San Antonio and UTHealth Houston - School of Public Health.

Program Description

The 4+1 program provides a direct line for Health and Public Health students to enroll in and complete their master's coursework over the course of five years, as opposed to the traditional four years of undergraduate work and two years of graduate work. The 4+1 degree between The University of Texas at San Antonio (UTSA) and UTHealth Houston - School of Public Health (UTHealth Houston SPH) allows undergraduate health and public health majors to streamline and advance their education efficiently.

The student will graduate with a baccalaureate degree in health or public health while earning a certificate in public health from UTHealth Houston SPH. Additionally, they will have the opportunity to complete a Master of Public Health (MPH) degree program in one additional year instead of the customary two years. Upon graduation from UTSA, students can immediately transition to master's status and continue on to complete the remaining degree requirements at UTHealth Houston SPH. Students who do not wish to continue with the master's degree will graduate with a certificate in public health from UTHealth Houston SPH.

Graduates will be expected to acquire the education, skill-set and experience needed to enter the professional work force in any of the varied fields of public health, or be well prepared to continue with their education through doctoral studies or in professional degrees such as medicine, dentistry and pharmacy.

Requirements

Students in good standing in the Bachelor of Science in Health or the Bachelor of Science in Public Health program who have a minimum cumulative grade point average of a 3.2 or higher and ideally have completed select degree foundation courses can apply for acceptance into the 4+1 program during their third full year of study. Students who are accepted into the 4+1 program will then complete selected online or in person graduate courses during their last year of study at the UTHealth San Antonio Regional Campus. This coursework will simultaneously satisfy remaining undergraduate requirements, as well as the core courses for the Master of Public Health (MPH) degree. After satisfying the undergraduate degree requirements students will then apply for and finish the graduate program.

- B.S. degree in Kinesiology (p. 102)
- B.S. degree in Kinesiology (Athletic Training Concentration) (p. 104)
- B.S. degree in Kinesiology (Exercise Physiology Concentration) (p. 106)
- B.S. degree in Kinesiology (Kinesiology and Health Science Concentration) (p. 109)
- B.S. degree in Kinesiology (Physical Education Concentration) (p. 111)

Bachelor of Science Degree in Kinesiology

This program provides students with the opportunity to pursue a Bachelor of Science (B.S.) degree in Kinesiology. Students may apply for admission into one of the concentrations within the Kinesiology major if they wish to specialize in athletic training, exercise physiology, kinesiology and health science, or physical education. Students may also pursue the major without a concentration. This also applies to students who are unable to complete one of the concentrations. All required Kinesiology (KIN) courses and support work must be completed with a grade of "C-" or better.

Applicants admitted to UTSA under this catalog beginning Fall 2019 will be directly admitted to the Kinesiology major (no concentration) if they:

- meet all UTSA undergraduate admission requirements, and
- are ranked in the top 10 percent of their high school class, or
- are ranked in the top 15 percent of their high school class and have a minimum 1350 SAT* or 29 ACT score.

* New SAT scores combine Evidence-Based Reading and Writing and Math.

Freshmen who do not meet the above requirements, but meet UTSA's general admission requirements will be part of "Life and Health Science Studies" where students will be able to work towards meeting the prerequisites needed to declare Kinesiology as their major.

Academic advising for students seeking the Kinesiology degree is available in the Life and Health Sciences Advising Center. Students who wish to pursue teacher certification will be advised in the Interdisciplinary Education Advising 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. All candidates seeking this degree must fulfill the

Core Curriculum requirements and the degree requirements, which are listed below.

Internship Policy

Experiential learning is a valuable element for 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 kinesiology activities carried out in a kinesiology-oriented organization. An internship is *optional* for the students in the Kinesiology major with no concentration.

Internship Eligibility

Kinesiology majors with no concentration 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 2.5
- are within 13 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.

Mandatory meetings are held in the semester prior to the student enrolling in the internship. 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. Students must bring a signed degree plan from their advisor to the mandatory internship meeting.

Students who miss the meeting may be ineligible for the internship in the following semester. Extenuating circumstances must be documented and will be considered on a case-by-case basis by the internship coordinator.

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 site when the work plan for the internship is submitted.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. degree in Kinesiology 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.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3

Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Course

Students pursuing the B.S. degree in Kinesiology must successfully complete the following Gateway Course with a grade of “C-” or better in no more than two attempts. A student who is unable to successfully complete this courses within two attempts, including dropping the course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

KIN 2303	Foundations of Kinesiology
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Degree Requirements

Students in the Kinesiology major are required to successfully complete all required KIN courses, and select elective courses based on their post-graduate goals.

A. Required KIN courses

KIN 2123	Fitness and Wellness Concepts	3
KIN 2303	Foundations of Kinesiology	3
KIN 3103	Motor Development	3
KIN 3323	Biomechanics	3
KIN 3433	Exercise Physiology	3
KIN 4023	Exercise Psychology	3
KIN 4113	Evaluation	3
KIN 4123	Introduction to Sport Psychology	3
KIN 4403	Motor Learning	3
KIN 4423	Developmental/Adapted Physical Activity	3

B. Support courses

BIO 1233	Contemporary Biology I	3-4
or BIO 1404	Biosciences I	
BIO 2043/ HTH 3013/ KIN 4253	Nutrition	3
or NDT 2043	Introduction to Nutritional Sciences	
BIO 2053	Human Anatomy and Physiology I	3
or KIN 3313	Anatomy and Physiology for Kinesiology	
COM 1053	Business and Professional Speech	3
or COM 2113	Public Speaking	
MAT 1023	College Algebra with Applications	3
or MAT 1073	Algebra for Scientists and Engineers	
STA 1053	Basic Statistics	3
or STA 1403	Probability and Statistics for the Biosciences	

C. Electives

All candidates for this degree must complete up to 28 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.	28
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KIN 4936	Internship in Kinesiology	6
Total Credit Hours		82-83

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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
KIN 2303	Foundations of Kinesiology	3
WRC 1013	Freshman Composition I (Q) (core)	3
Life & Physical Sciences core		3
Mathematics core		3
Credit Hours		15

Spring

BIO 1233 or BIO 1404	Contemporary Biology I (core and major) or Biosciences I	3-4
KIN 2123	Fitness and Wellness Concepts	3
WRC 1023	Freshman Composition II (Q) (core)	3
University core course		3
University core course		3
Credit Hours		15-16

Second Year

Fall		
BIO 2053 or KIN 3113	Human Anatomy and Physiology I or Scientific Principles of Physical Activity	3
STA 1053 or STA 1403	Basic Statistics or Probability and Statistics for the Biosciences	3
University core course		3
University core course		3
University core course		3
Credit Hours		15

Spring

MAT 1073 or MAT 1023	Algebra for Scientists and Engineers or College Algebra with Applications	3
Nutrition course (BIO 2043, HTH 3013, or KIN 4253)		3
University core course		3
University core course		3
University core course		3
Credit Hours		15

Third Year

Fall		
COM 1053 or COM 2113	Business and Professional Speech or Public Speaking	3
KIN 3103	Motor Development	3
KIN 4423	Developmental/Adapted Physical Activity	3
Free elective		3

Free elective		3
Credit Hours		15

Spring

KIN 3323	Biomechanics	3
KIN 3433	Exercise Physiology	3
KIN 4123	Introduction to Sport Psychology	3
Free elective		3
Free elective		3
Credit Hours		15

Fourth Year

Fall

KIN 4023	Exercise Psychology	3
KIN 4113	Evaluation	3
KIN 4403	Motor Learning	3
Free elective		3
Free elective		3
Free elective (to meet 120 hour minimum)		2-3
Credit Hours		18-17

Spring

KIN 4936	Internship in Kinesiology	6
Free elective		3
Free elective		3
Credit Hours		12
Total Credit Hours		120

Bachelor of Science Degree in Kinesiology (Athletic Training Concentration)

This program provides students with the opportunity to pursue a Bachelor of Science (B.S.) degree in Kinesiology with a concentration in Athletic Training. Students become eligible to apply for the Texas state licensure upon completion of this concentration. Students must be accepted into the Athletic Training Apprenticeship Program to pursue this concentration. The apprenticeship program involves 1800 hours of clinical internship over a minimum of five semesters. All kinesiology degree core and support work must be completed with a grade of "C-" or better.

Admission Policy

The goal of admission requirements for the Athletic Training concentration is to provide 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 athletic training. All applicants for admission to the Athletic Training concentration will be initially admitted to the Kinesiology program without a concentration (see admission requirements above). In order for a student to declare the Athletic Training concentration, a student must be admitted to the Athletic Training Apprenticeship Program, and meet the following academic criteria.

To declare an Athletic Training concentration, a Kinesiology major must have:

- completed 30 semester credit hours with a cumulative grade point average of 2.50
- successfully completed the following or equivalent courses with a grade of "C-" or better:

BIO 1233	Contemporary Biology I	3
KIN 2303	Foundations of Kinesiology	3
MAT 1073	Algebra for Scientists and Engineers	3
WRC 1013	Freshman Composition I (Q)	3

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 an Athletic Training concentration if they:

- meet all UTSA undergraduate admission requirements
- have completed 30 semester credit hours
- are admitted into the Athletic Training Apprenticeship Program

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. 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 B.S. degree in Kinesiology with a concentration in Athletic Training 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. 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.

STA 1053 should be used to satisfy the core requirement in Mathematics. BIO 1233 should be used to satisfy one of the core requirements in Life and Physical Sciences. PSY 1013 or SOC 1013 is recommended to satisfy the core requirement in Social and Behavioral Sciences. COM 2113 is recommended to satisfy the core requirement in the Component Area Option.

For a complete listing of courses that satisfy the Core Curriculum requirements, see Core Curriculum Component Area Requirements above.

Gateway Course

Students pursuing the Bachelor of Science degree in Kinesiology must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

KIN 2303	Foundations of Kinesiology
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Degree Requirements

Students in the Athletic Training concentration are required to successfully complete all required HTH and KIN courses, and select designated elective courses based on their post-graduate goals.

A. Required HTH and KIN courses

HTH 3003	Survey of Drugs and Health	3
KIN 2141	Medical Terminology	1
KIN 2211	First Aid and CPR	1

KIN 2303	Foundations of Kinesiology	3
KIN 3071	Musculoskeletal Fitness Instruction	1
KIN 3303	Care and Prevention of Athletic Injuries	3
KIN 3323	Biomechanics	3
KIN 3433	Exercise Physiology	3
KIN 3453	Fitness Programming and Exercise Prescription	3
KIN 3463	Musculoskeletal Anatomy	3
KIN 4043	Therapeutic Modalities	3
KIN 4123	Introduction to Sport Psychology	3
KIN 4143	Evaluation of Athletic Injuries	3
KIN 4243	Musculoskeletal Rehabilitation	3
KIN 4253	Exercise Nutrition	3
KIN 4403	Motor Learning	3
KIN 4931	Clinical Applications of Athletic Injuries (repeated for 6 semester credit hours)	6

B. Support courses

BIO 1233	Contemporary Biology I	3
BIO 2053 & BIO 2051	Human Anatomy and Physiology I and Human Anatomy and Physiology Laboratory I	4
BIO 2063 & BIO 2061	Human Anatomy and Physiology II and Human Anatomy and Physiology Laboratory II	4
CHE 1103	General Chemistry I	3
COM 2113	Public Speaking	3
or COM 1053	Business and Professional Speech	
MAT 1073	Algebra for Scientists and Engineers	3
PHY 1603	Algebra-based Physics I	3
PSY 1013	Introduction to Psychology	3
or SOC 1013	Introduction to Sociology	
STA 1053	Basic Statistics	3

C. Designated electives

Select 13 semester credit hours from the following courses:	13
BIO 1033	Drugs and Society
CHE 1113	General Chemistry II
CHE 1121	General Chemistry I Laboratory
CHE 1131	General Chemistry II Laboratory
HTH 3013	Survey of Human Nutrition
or BIO 2043	Nutrition
HTH 4503	Human Disease and Epidemiology
KIN 2123	Fitness and Wellness Concepts
KIN 3103	Motor Development
KIN 3313	Anatomy and Physiology for Kinesiology
KIN 4023	Exercise Psychology
KIN 4113	Evaluation
KIN 4413	Coaching Athletics
PHY 1611	Algebra-based Physics I Laboratory
PHY 1623	Algebra-based Physics II
PHY 1631	Algebra-based Physics II Laboratory
PSY 2503	Developmental Psychology

Total Credit Hours

90

B.S. in Kinesiology, Athletic Training Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1233	Contemporary Biology I (core and major)	3
KIN 2303	Foundations of Kinesiology	3
MAT 1073	Algebra for Scientists and Engineers	3
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15

Spring

COM 2113 or COM 1053	Public Speaking or Business and Professional Speech	3
KIN 2141	Medical Terminology	1
PSY 1013 or SOC 1013	Introduction to Psychology (core and major) or Introduction to Sociology	3
STA 1053	Basic Statistics (core and major)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Life & Physical Sciences core		3
Credit Hours		16

Second Year

Fall		Credit Hours
BIO 2053	Human Anatomy and Physiology I	3
BIO 2051	Human Anatomy and Physiology Laboratory I	1
CHE 1103	General Chemistry I	3
KIN 2211	First Aid and CPR	1
KIN 4931	Clinical Applications of Athletic Injuries	1
Designated elective or University core course		3
Designated elective or University core course		3
Credit Hours		15

Spring

BIO 2063	Human Anatomy and Physiology II	3
BIO 2061	Human Anatomy and Physiology Laboratory II	1
KIN 3303	Care and Prevention of Athletic Injuries	3
KIN 4931	Clinical Applications of Athletic Injuries	1
PHY 1603	Algebra-based Physics I	3
Designated elective or University core course		3
Credit Hours		14

Third Year

Fall		Credit Hours
KIN 3071	Musculoskeletal Fitness Instruction	1
KIN 3323	Biomechanics	3
KIN 3433	Exercise Physiology	3

KIN 3463	Musculoskeletal Anatomy	3
KIN 4931	Clinical Applications of Athletic Injuries	1
Designated elective or University core course		3
Credit Hours		14

Spring

HTH 3003	Survey of Drugs and Health	3
KIN 3453	Fitness Programming and Exercise Prescription	3
KIN 4143	Evaluation of Athletic Injuries	3
KIN 4931	Clinical Applications of Athletic Injuries	1
Designated elective or University core course		3
Designated elective or University core course		3
Credit Hours		16

Fourth Year

Fall		Credit Hours
KIN 4123	Introduction to Sport Psychology	3
KIN 4243	Musculoskeletal Rehabilitation	3
KIN 4253	Exercise Nutrition	3
KIN 4931	Clinical Applications of Athletic Injuries	1
Designated elective or University core course		3
Designated elective or University core course		3
Credit Hours		16

Spring

KIN 4043	Therapeutic Modalities	3
KIN 4403	Motor Learning	3
KIN 4931	Clinical Applications of Athletic Injuries	1
Designated elective or University core course		3
Designated elective or University core course		3
Designated elective		1
Credit Hours		14
Total Credit Hours		120

Bachelor of Science Degree in Kinesiology (Exercise Physiology Concentration)

This program provides students with the opportunity to pursue a Bachelor of Science (B.S.) degree in Kinesiology with a concentration in Exercise Physiology. 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.

Admission Policy

The goal of admission requirements for the Exercise Physiology concentration is to provide 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 kinesiology education. All applicants for admission to the Exercise Physiology concentration will be initially admitted to the Kinesiology program without a concentration (see admission requirements above). Academic performance for declaration of the

Exercise Physiology concentration will be evaluated after the following criteria has been met:

- completed 30 semester credit hours with a cumulative grade point average of 2.5
- successfully completed the following or equivalent courses with a grade of "C-" or better:

BIO 1233	Contemporary Biology I	3
or BIO 1404	Biosciences I	
KIN 2303	Foundations of Kinesiology	3
MAT 1023	College Algebra with Applications	3
or MAT 1073	Algebra for Scientists and Engineers	
WRC 1013	Freshman Composition I (Q)	3

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 an Exercise Physiology concentration if they:

- meet all UTSA undergraduate admission requirements
- have completed 30 semester credit hours

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

Internship Eligibility

Kinesiology majors with Exercise Physiology concentration 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 2.5
- are within 13 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 program coordinator 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 enrolling in the internship. 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. Students must bring a signed degree plan from their advisor to the mandatory internship meeting.

Students who miss the meeting may be ineligible for the internship in the following semester. Extenuating circumstances must be documented and will be considered on a case-by-case basis by the internship coordinator.

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 from the academic advisor, with written documentation to a three-member review committee. Prior work experience is defined as an experience that is at least equivalent to what students will earn in a 300-hour internship. Both the length and quality of the experience will be evaluated. 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 appeal 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.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. degree in Kinesiology with a concentration in Exercise Physiology 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. 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.

MAT 1023 should be used to satisfy the core requirement in Mathematics. BIO 1233 or BIO 1404 should be used to satisfy one of the Life and Physical Sciences core requirements. COM 2113 should be used to satisfy the Component Area Option requirement.

For a complete listing of courses that satisfy the Core Curriculum requirements, see Core Curriculum Component Area Requirements above.

Gateway Course

Students pursuing the B.S. degree in Kinesiology must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

KIN 2303 Foundations of Kinesiology

Degree Requirements

A. Required KIN courses

KIN 2111	Lifetime Fitness Activity Instruction	1
KIN 2211	First Aid and CPR	1
KIN 2303	Foundations of Kinesiology	3
KIN 2441	Management in Kinesiology	1
KIN 3051	Group Fitness Instruction	1

KIN 3071	Musculoskeletal Fitness Instruction	1
KIN 3321	Biomechanics Laboratory	1
KIN 3323	Biomechanics	3
KIN 3431	Exercise Physiology Laboratory	1
KIN 3433	Exercise Physiology	3
KIN 3441	Health Related Fitness Assessment Laboratory	1
KIN 3443	Health Related Fitness Assessment	3
KIN 3453	Fitness Programming and Exercise Prescription	3
KIN 4023	Exercise Psychology	3
KIN 4233	Advanced Exercise Physiology	3
or KIN 4263	Clinical Exercise Physiology	
KIN 4253	Exercise Nutrition	3
KIN 4936	Internship in Kinesiology	6

B. Support courses

BIO 1233	Contemporary Biology I	3
or BIO 1404	Biosciences I	
BIO 2053	Human Anatomy and Physiology I	4
& BIO 2051	and Human Anatomy and Physiology Laboratory I	
BIO 2063	Human Anatomy and Physiology II	4
& BIO 2061	and Human Anatomy and Physiology Laboratory II	
COM 2113	Public Speaking	3
MAT 1023	College Algebra with Applications	3
STA 1053	Basic Statistics	3

C. Minor Required (Recommended: Biology, Business, Community Health, or Wellness) 18-21

D. Electives

All candidates for this degree must complete enough hours of 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. 11-14

Total Credit Hours 90

B.S. in Kinesiology, Exercise Physiology Concentration – Recommended Four-Year Academic Plan

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1233	Contemporary Biology I (core and major)	3
or BIO 1404	or Biosciences I	
KIN 2303	Foundations of Kinesiology	3
MAT 1023	College Algebra with Applications (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15

Spring

BIO 2053	Human Anatomy and Physiology I	3
BIO 2051	Human Anatomy and Physiology Laboratory I	1
STA 1053	Basic Statistics (core and major)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Life & Physical Sciences core		3

University core course	3
Credit Hours	16

Second Year

Fall

BIO 2063	Human Anatomy and Physiology II	3
BIO 2061	Human Anatomy and Physiology Laboratory II	1
KIN 2111	Lifetime Fitness Activity Instruction	1
KIN 2211	First Aid and CPR	1
Minor course		3
University core course		3
University core course		3

Credit Hours 15

Spring

COM 2113	Public Speaking (core and major)	3
KIN 2441	Management in Kinesiology	1
KIN 3051	Group Fitness Instruction	1
Elective course		3
Minor course		3
University core course		3

Credit Hours 14

Third Year

Fall

KIN 3071	Musculoskeletal Fitness Instruction	1
KIN 3323	Biomechanics	3
KIN 3321	Biomechanics Laboratory	1
KIN 3433	Exercise Physiology	3
KIN 3431	Exercise Physiology Laboratory	1
Minor course		3
University core course		3

Credit Hours 15

Spring

KIN 3443	Health Related Fitness Assessment	3
KIN 3441	Health Related Fitness Assessment Laboratory	1
KIN 3453	Fitness Programming and Exercise Prescription	3
KIN 4023	Exercise Psychology	3
Minor course		3
University core course		3

Credit Hours 16

Summer

Elective course	2
Credit Hours	2

Fourth Year

Fall

KIN 4233	Advanced Exercise Physiology	3
or KIN 4263	or Clinical Exercise Physiology	
KIN 4253	Exercise Nutrition	3
Minor course		3
Elective course		3

University core course	3
Credit Hours	15
Spring	
KIN 4936 Internship in Kinesiology	6
Minor course	3
Elective course	3
Credit Hours	12
Total Credit Hours	120

Bachelor of Science Degree in Kinesiology (Kinesiology and Health Science Concentration)

This program provides students with the opportunity to pursue a Bachelor of Science (B.S.) degree in Kinesiology with a concentration in Kinesiology and Health Science. All kinesiology degree core and support work must be completed with a grade of "C-" or better. This concentration is suited for students who are taking prerequisite courses for medical schools or graduate programs in health professions (e.g., Physical Therapy, Occupational Therapy, and Physician Assistant). Students who are interested in applying to these programs are encouraged to meet with their academic advisor and consult with the UTSA Health Professions Office.

Admission Policy

The goal of admission requirements for the Kinesiology and Health Science concentration is to provide undergraduate students with a program of study with the highest possible standards. All applicants for admission to the Kinesiology and Health Science concentration will be initially admitted to the Kinesiology program without a concentration (see admission requirements above). In order for a student to declare the Kinesiology and Health Science concentration must meet the following academic criteria.

To declare an Kinesiology and Health Science concentration, a Kinesiology major must have:

- completed 30 semester credit hours with a cumulative grade point average (GPA) of 2.75
- successfully completed the following or equivalent courses with a grade of "C-" or better:

BIO 1404	Biosciences I	4
KIN 2303	Foundations of Kinesiology	3
MAT 1073	Algebra for Scientists and Engineers	3
WRC 1013	Freshman Composition I (Q)	3

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 Kinesiology and Health Science concentration if they:

- meet all UTSA undergraduate admission requirements
- have completed 30 semester credit hours
- have a cumulative GPA of 2.75

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. All candidates seeking this degree must fulfill the

Core Curriculum requirements and the degree requirements, which are listed below.

Internship Policy

Experiential learning is a valuable element for 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 kinesiology activities carried out in a kinesiology-oriented organization. An internship is *optional* for the students in the Kinesiology major with a concentration in Kinesiology and Health Science.

Internship Eligibility

Kinesiology majors with a concentration in Kinesiology and Health Science 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 2.75
- are within 13 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.

Mandatory meetings are held in the semester prior to the student enrolling in the internship. 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. Students must bring a signed degree plan from their advisor to the mandatory internship meeting.

Students who miss the meeting may be ineligible for the internship in the following semester. Extenuating circumstances must be documented and will be considered on a case-by-case basis by the internship coordinator.

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 site when the work plan for the internship is submitted.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. degree in Kinesiology with a concentration in Kinesiology and Health 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. 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.

STA 1053 should be used to satisfy the core requirement in Mathematics. BIO 1404 and BIO 1414 should be used to satisfy the core requirement in Life and Physical Sciences. PSY 1013 or SOC 1013 is recommended to satisfy the core requirement in Social and Behavioral Sciences.

COM 2113 is recommended to satisfy the core requirement in the Component Area Option.

For a complete listing of courses that satisfy the Core Curriculum requirements, see Core Curriculum Component Area Requirements above.

Gateway Course

Students pursuing the B.S. degree in Kinesiology must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

KIN 2303 Foundations of Kinesiology

Degree Requirements

Students in the Kinesiology and Health Science concentration are required to successfully complete all required KIN courses, and select designated elective courses based on their post-graduate goals. Students interested in applying to Physical Therapy, Occupational Therapy, and Physician's Assistant programs are encouraged to meet with the academic advisor and consult with the UTSA Health Professions Office.

A. Required KIN courses

KIN 2141	Medical Terminology	1
KIN 2303	Foundations of Kinesiology	3
KIN 3071	Musculoskeletal Fitness Instruction	1
KIN 3303	Care and Prevention of Athletic Injuries	3
KIN 3323	Biomechanics	3
KIN 3433	Exercise Physiology	3
KIN 3453	Fitness Programming and Exercise Prescription	3
KIN 3463	Musculoskeletal Anatomy	3
KIN 4043	Therapeutic Modalities	3
KIN 4143	Evaluation of Athletic Injuries	3
KIN 4243	Musculoskeletal Rehabilitation	3
KIN 4253	Exercise Nutrition	3
KIN 4403	Motor Learning	3

B. Support courses

BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
BIO 2053 & BIO 2051	Human Anatomy and Physiology I and Human Anatomy and Physiology Laboratory I	4
BIO 2063 & BIO 2061	Human Anatomy and Physiology II and Human Anatomy and Physiology Laboratory II	4
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	4
COM 1053 or COM 2113	Business and Professional Speech or Public Speaking	3
MAT 1073	Algebra for Scientists and Engineers	3
PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory	4
PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory	4

PSY 1013	Introduction to Psychology	3
SOC 1013	Introduction to Sociology	3
STA 1053	Basic Statistics	3

C. Electives

All candidates for this degree must complete enough hours of 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.		5
KIN 4936	Internship in Kinesiology	6
Total Credit Hours		93

B.S. in Kinesiology, Kinesiology and Health Science Concentration – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
KIN 2303	Foundations of Kinesiology	3
MAT 1073	Algebra for Scientists and Engineers	3
PSY 1013	Introduction to Psychology (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15

Spring

BIO 1404	Biosciences I (core and major)	4
CHE 1103	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory	1
SOC 1013	Introduction to Sociology (core and major)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Elective		2
Credit Hours		16

Second Year

Fall		
BIO 1414	Biosciences II (core and major)	4
CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory	1
KIN 2141	Medical Terminology	1
PHY 1603	Algebra-based Physics I	3
PHY 1611	Algebra-based Physics I Laboratory	1
University core course		3
Credit Hours		16

Spring

BIO 2053	Human Anatomy and Physiology I	3
BIO 2051	Human Anatomy and Physiology Laboratory I	1
PHY 1623	Algebra-based Physics II	3
PHY 1631	Algebra-based Physics II Laboratory	1
STA 1053	Basic Statistics (core and major)	3

Elective course		3
	Credit Hours	14
Third Year		
Fall		
BIO 2063	Human Anatomy and Physiology II	3
BIO 2061	Human Anatomy and Physiology Laboratory II	1
KIN 3071	Musculoskeletal Fitness Instruction	1
KIN 3303	Care and Prevention of Athletic Injuries	3
KIN 3433	Exercise Physiology	3
KIN 3463	Musculoskeletal Anatomy	3
	Credit Hours	14
Spring		
KIN 3323	Biomechanics	3
KIN 4143	Evaluation of Athletic Injuries	3
KIN 4253	Exercise Nutrition	3
University core course		3
University core course		3
	Credit Hours	15
Summer		
University core course		3
	Credit Hours	3
Fourth Year		
Fall		
COM 1053 or COM 2113	Business and Professional Speech or Public Speaking	3
KIN 3453	Fitness Programming and Exercise Prescription	3
KIN 4043	Therapeutic Modalities	3
KIN 4243	Musculoskeletal Rehabilitation	3
University core course		3
	Credit Hours	15
Spring		
KIN 4403	Motor Learning	3
KIN 4936	Internship in Kinesiology	6
University core course		3
	Credit Hours	12
	Total Credit Hours	120

Bachelor of Science Degree in Kinesiology (Physical Education Concentration)

This program provides students with the opportunity to pursue a Bachelor of Science (B.S.) degree in Kinesiology with a concentration in Physical Education. Students are prepared for careers in teaching physical education (pre-kindergarten–grade 12). All kinesiology degree core and support work must be completed with a grade of “C-” or better. All applicants for admission to the Physical Education concentration will be initially admitted to the Kinesiology program without a concentration (see admission requirements above).

Academic advising for students seeking the Kinesiology degree is available in the Interdisciplinary Education Advising 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. 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 B.S. degree in Kinesiology with a concentration in Physical Education 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. 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.

STA 1053 should be used to satisfy the core requirement in Mathematics. BIO 1233 should be used to satisfy one of the core requirements in Life and Physical Sciences. SOC 1013 is recommended to satisfy the core requirement in Social and Behavioral Sciences.

For a complete listing of courses that satisfy the Core Curriculum requirements, see Core Curriculum Component Area Requirements above.

Gateway Courses

Students pursuing the B.S. degree in Kinesiology must successfully complete each of the following Gateway Courses with a grade of “C-” or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

KIN 2303	Foundations of Kinesiology
KIN 3313	Anatomy and Physiology for Kinesiology

Degree Requirements

A. Required KIN courses

KIN 2123	Fitness and Wellness Concepts	3
KIN 2211	First Aid and CPR	1
KIN 2303	Foundations of Kinesiology	3
KIN 2421	Outdoor Activities and Innovative Games	1
KIN 3001	Skill Analysis in Physical Activity: Individual Activities	1
KIN 3011	Skill Analysis in Physical Activity: Team Sports I	1
KIN 3021	Skill Analysis in Physical Activity: Team Sports II	1
KIN 3031	Skill Analysis in Physical Activity: Dual Sports	1
KIN 3103	Motor Development	3
KIN 3113	Scientific Principles of Physical Activity	3
KIN 3313	Anatomy and Physiology for Kinesiology	3
KIN 3413	Tactics	3
KIN 4113	Evaluation	3
KIN 4123	Introduction to Sport Psychology	3
KIN 4343	Movement Awareness	3

KIN 4403	Motor Learning	3
KIN 4423	Developmental/Adapted Physical Activity	3
B. Support courses		
BIO 1233	Contemporary Biology I	3
EDP 3203	Learning and Development in the Secondary School Adolescent	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
STA 1053	Basic Statistics	3
C. Second Teaching Field or Coaching Certificate		
D. Professional Education courses		
C&I 4716	Clinical Teaching: All Level EC–12 ¹	6
KIN 4203	Teaching Secondary Physical Education ¹	3
KIN 4303	Teaching Elementary Physical Education ¹	3
LTED 3773	Reading and Writing Across the Disciplines-Grades 7–12 ¹	3
Total Credit Hours		84

¹ These courses 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043	United States History: Pre-Columbus to Civil War Era (core)	3
KIN 2303	Foundations of Kinesiology	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15

Spring

BIO 1233	Contemporary Biology I (core and major)	3
HIS 1053 or HIS 2053	United States History: Civil War Era to Present (core) or Texas History	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3

POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		15

Summer

University core course		3
Credit Hours		3

Second Year

Fall

KIN 2123	Fitness and Wellness Concepts	3
KIN 2211	First Aid and CPR	1
KIN 2421	Outdoor Activities and Innovative Games	1
SOC 1013	Introduction to Sociology (core)	3
STA 1053	Basic Statistics (core and major)	3
University core course		3
Credit Hours		14

Spring

EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
KIN 3001	Skill Analysis in Physical Activity: Individual Activities	1
KIN 3011	Skill Analysis in Physical Activity: Team Sports I	1
KIN 3103	Motor Development	3
Second Teaching Field or Coaching Certificate		3
University core course		3
Credit Hours		14

Summer

University core course		3
Credit Hours		3

Third Year

Fall

EDP 3203	Learning and Development in the Secondary School Adolescent	3
KIN 3021	Skill Analysis in Physical Activity: Team Sports II	1
KIN 3313	Anatomy and Physiology for Kinesiology	3
KIN 3413	Tactics	3
KIN 4123	Introduction to Sport Psychology	3
Second Teaching Field or Coaching Certificate		3
Credit Hours		16

Spring

KIN 3031	Skill Analysis in Physical Activity: Dual Sports	1
KIN 3113	Scientific Principles of Physical Activity	3
KIN 4343	Movement Awareness	3
KIN 4423	Developmental/Adapted Physical Activity	3
LTED 3773	Reading and Writing Across the Disciplines-Grades 7–12	3

Second Teaching Field or Coaching Certificate		3
	Credit Hours	16
Summer		
KIN 4403	Motor Learning	3
	Credit Hours	3
Fourth Year		
Fall		
KIN 4113	Evaluation	3
KIN 4203	Teaching Secondary Physical Education	3
KIN 4303	Teaching Elementary Physical Education	3
Second Teaching Field or Coaching Certificate		3
Second Teaching Field or Coaching Certificate		3
	Credit Hours	15
Spring		
C&I 4716	Clinical Teaching: All Level EC-12	6
	Credit Hours	6
	Total Credit Hours	120

Bachelor of Science Degree in Nutrition and Dietetics

The Bachelor of Science (B.S.) in Nutrition and Dietetics offers the initial phase of a professional program known as the Coordinated Program in Dietetics (CPD). Didactic and introductory supervised experiences are part of the curriculum and serve as a foundation for the Master of Dietetics Studies (MDS). Students must meet all admission requirements to seek the dual B.S. in Nutrition and Dietetics and the Master of Dietetics Studies. Successful completion of both degrees certifies the student as eligible to take the national exam to become a Registered Dietitian (RD). Students admitted into the undergraduate program are not guaranteed placement into the MDS unless they maintain a 3.0 grade point average and have completed all degree core, support courses and Texas core with a grade of "C-" or better. Students on the B.S. in Nutrition and Dietetics track who are not able to complete the Master of Dietetics Studies, may earn the Bachelor of Science degree if they meet the University graduation requirements, but are not eligible for the verification statement to take the RD exam.

Academic advising for students seeking the degree is available in the Life and Health Sciences Advising Center.

The minimum number of semester credit hours 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.

Admission Policy

The admission requirements into the Nutrition and Dietetics degree are intended to offer a program with high standards for success. Some of the requirements are known to be a good predictor of achievement in the graduate professional phase of the Coordinated Program in Dietetics. Students interested in Nutrition and Dietetics will not be able to be admitted directly into the major because this major cannot be declared as a freshman. Students interested in Nutrition and Dietetics must meet UTSA's general admission requirements and will be admitted into the

"Life and Health Science Studies" until all requirements can be met at UTSA.

While students can declare a nutrition/dietetics track within Life and Health Science Studies, there is a restricted placement in the advanced practicum courses, which limits the capacity for admission into the Coordinated Program in Dietetics. Admission into the major as part of a cohort group occurs in the Fall Semester. In order to declare a major in Nutrition and Dietetics, a student must meet the following criteria:

- Must complete all support courses and most of the Texas Core requirements with a minimum cumulative grade point average (GPA) of 3.0 (on a 4.0 scale) and be in good standing with the University.
- Must complete all prerequisite courses with a grade of "C-" or better. Detailed information about the courses, including the Texas common course numbers may be obtained from the Undergraduate Catalog.
- Must complete NDT 2043 Introduction to Nutritional Sciences or BIO 2043 Nutrition or equivalent course with a grade of "B-" or better.
- May not repeat a prerequisite course more than twice to meet the grade criteria.
- Must complete all support courses (prerequisite courses) by the end of the summer semester prior to entering the program in the Fall Semester.
- Must submit a program application, two completed reference forms (program specific) preferably by faculty members and a statement indicating personal career goals, knowledge of the profession, commitment, interests, and motivation.
- Must have a personal interview with the program faculty (by invitation).

Transfer students must meet all the above criteria and meet all the UTSA undergraduate admission requirements. Official transcripts from all institutions attended must be submitted.

Criminal Record Check

A criminal background check is required during the semesters in which a student enrolls in field-based practicums. Students will be required to complete a Criminal Record Check for practicums associated with schools, healthcare facilities, hospitals and clinics. It is the responsibility of the student to determine if his or her criminal history background will present a problem before applying for admission to the program. Students with problematic criminal history will not be able to complete most of the field experiences that are required by the program.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. degree in Nutrition and Dietetics 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. 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.

MAT 1073 should be used to satisfy the core requirement in Mathematics. BIO 1233 or BIO 1404 and BIO 1243 or BIO 1414 should be used to satisfy the Life and Physical Sciences requirements. ANT 1013 or SOC 1013 or PSY 1013 should be used to satisfy the Social and Behavioral Sciences requirement. STA 1053 may be used to satisfy the Component Area Option.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Course

Students pursuing the Bachelor of Science degree in Nutrition and Dietetics must successfully complete the following Gateway Course with a grade of “C-” or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

NDT 3413 Advanced Human Nutrition

Degree Requirements

A. Degree core requirements

NDT 3191	Applied Food Science Practicum	1
NDT 3203	Introduction to Nutrition and Dietetics Careers	3
NDT 3292	Food Production Practicum	2
NDT 3313	Applied Food Science	3
NDT 3323	Nutrition and Health Assessment	3
NDT 3333	Nutrition Counseling and Education	3
NDT 3343	Nutrition in the Life Span	3
NDT 3353	Production and Foodservice System Management I	3
NDT 3413	Advanced Human Nutrition	3
NDT 4091	Community Service Practicum	1
NDT 4191	Nutrition Care Process Practicum	1
NDT 4313	Production and Food Service System Management II	3
NDT 4323	Medical Nutrition Therapy I	3
NDT 4333	Community Nutrition	3
NDT 4343	Nutrition in Disease Prevention and Health Promotion	3
NDT 4353	Medical Nutrition Therapy II	3
NDT 4363	Current Issues in Nutrition	3

B. Support courses

BIO 1053 & BIO 1061	Introductory Microbiology and Introductory Microbiology Laboratory	4
BIO 2053 & BIO 2051	Human Anatomy and Physiology I and Human Anatomy and Physiology Laboratory I	4
BIO 2063 & BIO 2061	Human Anatomy and Physiology II and Human Anatomy and Physiology Laboratory II	4
BIO 3513	Biochemistry	3

CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	4
CHE 2603 & CHE 2612	Organic Chemistry I and Organic Chemistry I Laboratory	5
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
NDT 2043	Introduction to Nutritional Sciences	3
PSY 1013	Introduction to Psychology	3
or SOC 1013	Introduction to Sociology	
or ANT 1013	Introduction to Anthropology	
STA 1053	Basic Statistics	3
Total Credit Hours		84

Course Sequence Guide for B.S. Degree in Nutrition and Dietetics

This course sequence guide is designed to assist students in completing their UTSA undergraduate degree requirements that are part of the Coordinated Program in Dietetics. *This is merely a guide and students must satisfy other admission requirements for the Coordinated Program in Dietetics; and meet with their advisor 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 core and support courses during Summer terms to reduce course loads during long semesters. Courses in the Nutrition and Dietetics Program are only offered once a year, according to the guide below.

B.S. in Nutrition and Dietetics – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1233 or BIO 1404	Contemporary Biology I (core) or Biosciences I	3
CHE 1103	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory	1
MAT 1073	Algebra for Scientists and Engineers (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
	Credit Hours	16

Spring

BIO 1243 or BIO 1414	Contemporary Biology II (core) or Biosciences II	3
CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory	1
WRC 1023	Freshman Composition II (Q) (core)	3
	American History core	3
	Government-Political Science core	3
	Credit Hours	16

Second Year

Fall

BIO 1053	Introductory Microbiology	3
BIO 1061	Introductory Microbiology Laboratory	1
BIO 2053	Human Anatomy and Physiology I	3
BIO 2051	Human Anatomy and Physiology Laboratory I	1
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory	2
American History core		3
Credit Hours		16

Spring

BIO 2063	Human Anatomy and Physiology II	3
BIO 2061	Human Anatomy and Physiology Laboratory II	1
BIO 3513	Biochemistry	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
NDT 2043 or BIO 2043	Introduction to Nutritional Sciences or Nutrition	3
PSY 1013 or SOC 1013 or ANT 1013	Introduction to Psychology (core and major) or Introduction to Sociology or Introduction to Anthropology	3
Credit Hours		16

Third Year

Fall

NDT 3191	Applied Food Science Practicum	1
NDT 3203	Introduction to Nutrition and Dietetics Careers	3
NDT 3313	Applied Food Science	3
NDT 3413	Advanced Human Nutrition	3
STA 1053	Basic Statistics (core and major)	3
Credit Hours		13

Spring

NDT 3292	Food Production Practicum ¹	2
NDT 3323	Nutrition and Health Assessment	3
NDT 3333	Nutrition Counseling and Education	3
NDT 3343	Nutrition in the Life Span	3
NDT 3353	Production and Foodservice System Management I	3
Credit Hours		14

Fourth Year

Fall

NDT 4091	Community Service Practicum ¹	1
NDT 4313	Production and Food Service System Management II	3
NDT 4323	Medical Nutrition Therapy I	3
NDT 4333	Community Nutrition	3
Government-Political Science core		3
Language, Philosophy & Culture core		3
Credit Hours		16

Spring

NDT 4191	Nutrition Care Process Practicum ¹	1
NDT 4343	Nutrition in Disease Prevention and Health Promotion	3
NDT 4353	Medical Nutrition Therapy II	3
NDT 4363	Current Issues in Nutrition	3
Creative Arts core		3
Credit Hours		13
Total Credit Hours		120

¹ The practicum courses involve traveling off campus to affiliation sites. Check the University Schedule of Classes or with the instructor to plan the rest of the course schedule accordingly.

Note: NDT courses are only offered once a year; Fall or Spring semester based on the plan above.

- Minor in Community Health (p. 115)
- Minor in Wellness (p. 115)

Minor in Community Health

All students pursuing the Minor in Community Health must complete the following 18 semester credit hours:

HTH 2413	Introduction to Community and Public Health	3
HTH 2623	Database Management in Community and Public Health	3
HTH 3503	Theories of Health Behavior	3
HTH 3513	Community Health	3
HTH 3663	Program Planning and Evaluation	3
HTH 4503	Human Disease and Epidemiology	3
Total Credit Hours		18

Minor in Wellness

All students pursuing the Minor in Wellness must complete the following 18 semester credit hours:

HTH 3003	Survey of Drugs and Health	3
HTH 3013	Survey of Human Nutrition	3
HTH 3023	Survey of Human Sexuality	3
HTH 3553	Emotional Wellness	3
KIN 2123	Fitness and Wellness Concepts	3
One additional Health course selected from the following:		3
HTH 2513	Personal Health	
HTH 3043	Principles of Weight Management	
HTH 3543	Growth and Development or HTH 4513 Consumer Health	
Total Credit Hours		18

To declare a Minor in Community Health or Wellness or to obtain advice, students should consult their academic advisor.

Certificate in Athletic Coaching

All students pursuing a Certificate in Athletic Coaching must complete the following 15 semester credit hours:

KIN 3013	Theory of Coaching	3
KIN 3113	Scientific Principles of Physical Activity	3
KIN 4123	Introduction to Sport Psychology	3
KIN 4413	Coaching Athletics	3
KIN 4943	Athletic Coaching Practicum	3
Total Credit Hours		15

Teacher Certification Programs

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 through sixth grades** will declare a major in Interdisciplinary Studies (IDS) with teacher certification in EC–6 Core Subjects. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (Early Childhood–Grade 6 Core Subjects concentration). Degree and certification advising for this program is conducted by Interdisciplinary Education 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, Mathematics/Science, or Core Subjects. 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 Interdisciplinary Education Advising and Certification Center advisors.
- Undergraduate students interested in teaching **bilingual pre-kindergarten through sixth grades** will declare a major in Interdisciplinary Studies (IDS) with teacher certification in EC–6 Bilingual Core Subjects. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (Early Childhood–Grade 6 Bilingual Core Subjects concentration). Degree and certification advising for this program is conducted by Interdisciplinary Education 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 Core Subjects. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (Grades 4–8 Bilingual Core Subjects concentration). Degree and certification advising for this program is conducted by Interdisciplinary Education 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 Core Subjects 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 Core Subjects concentration). Degree and certification advising for this program is conducted by Interdisciplinary Education 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 Core Subjects 4–8. 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 Interdisciplinary Education 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 Interdisciplinary Education Advising and Certification Center advisors.

- Undergraduate students interested in teaching **seventh 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 Interdisciplinary Education 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 Interdisciplinary Education 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 Interdisciplinary Education 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 Interdisciplinary Education 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 Interdisciplinary Education 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 website (<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 website (<http://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 Interdisciplinary Education 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 COEHD website (<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.

Criminal History Policy and Acknowledgement

The College of Education and Human Development (COEHD) prepares educators and professionals for fields which require fieldwork, internship, practicum, service-learning and/or clinical teaching. Placements occur in educational, clinical, health care facilities, hospital, and/or medical settings which require a criminal background check. The University of Texas at San Antonio is required to inform students of the requirements set forth by the Texas Occupation Code, Chapter 53, Sections 53.001 through 53.105 (<http://www.texas-statutes.com/occupations-code/chapter-53-consequences-of-criminal-conviction>).

All COEHD prospective students in a licensure or certification program are required to acknowledge that they have been made aware of these requirements and that they have read the COEHD Criminal History Policy (http://education.utsa.edu/certification_program/criminal_history_policy). For more information and for completing the acknowledgement form, please visit the Office of Professional Preparation, Assessment, and Accreditation in the College of Education and Human Development.

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 website at www.nasdtec.net (<http://www.nasdtec.net>) 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 Interdisciplinary Education 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

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 Interdisciplinary Education 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 Interdisciplinary Education

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 Interdisciplinary Education 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 Interdisciplinary Education 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 *UTSA Student Policies* and the COEHD website (<http://education.utsa.edu>) for additional admission requirements to the UTSA Teacher Certification Program.

Clinical Teaching (formerly Student Teaching)

The Clinical Teaching experience is an extremely important component of the certification program. The primary purpose of clinical 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 clinical teaching component of the certification program will be completed through UTSA.

Admission to Clinical Teaching

Admission to the professional semester of clinical teaching must be requested by formal application during the semester before the student plans to clinical teach. A meeting will be held early in the semester to disseminate application information. The deadline for the application for students who plan to do clinical teaching in the Fall Semester is February 15. For students planning to do clinical teaching in the Spring Semester, the deadline for the application is October 1. Acceptance into the clinical teaching program is contingent upon completion of the following requirements:

1. Admission to the UTSA Teacher Certification Program; consult the current *UTSA Student Policies* for admission requirements.
2. A 2.50 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 clinical 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 clinical teaching.
6. Approval of the Director of Clinical Teaching.
7. Students seeking admission to Clinical Teaching must have completed one attempt on the Content TExES exam for their certification area.

NOTE: The Professional Semester is a full-time commitment. The clinical teaching semester is 15 weeks with time divided between school

campuses and UTSA. A clinical 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 clinical teaching; therefore, it is not possible to register for other courses that meet in the daytime hours. Since performance in the clinical 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 clinical teaching semester. There is no special provision for financial support of clinical 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. Teacher certification candidates may only take the same state exam for a total of five times. The five attempts include the first attempt to pass the exam and four retakes. All attempts to pass the exam taken before September 1, 2015, will count as one attempt regardless of how many times the exam was taken prior to this date.

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.

Further information on required TExES tests can be obtained in the Interdisciplinary Education Advising and Certification Center, the Office of the TExES Coordinator, or from the UTSA COEHD website (<http://education.utsa.edu>).

Women's Studies Program

The College of Education and Human Development and the Women's Studies Institute offer a Bachelor of Arts (B.A.) degree and a minor in Women's Studies.

Honors in Women's Studies

Students whose grade point average in Women's Studies major coursework before the start of their final year at UTSA is 3.25 or above, and whose overall grade point average is 3.00, may earn Honors in Women's Studies. Students must complete 6 semester credit hours of WS 4993 Honors Thesis, complete a substantial research paper approved by the Women's Studies Program 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. Students are advised to consult with the Undergraduate Advisor of Record for the Women's Studies Program regarding requirements and appropriate deadlines.

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 B.A. degree in Women's Studies must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree 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.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3

Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. Major courses

1. Required courses		
WS 2013	Introduction to Women's Studies	3
WS 3613	Feminist Research Methodologies	3
WS 4623	Feminist Theories	3
WS 4933	Internship in Women's Studies	3
WS 4973	Seminar in Women's Studies	3
2. Select 1 course from the Globalization and Borderlands group below		
3. Select 1 course from the Culture and Society group below		

B. Groups

Select eight courses from at least two of the following groups: 24

Theory and Methods

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

Globalization and Borderlands

BBL 2023	Latino Cultural Expressions
GES 3653	Gender and Cities: An Introduction to Feminist Geography
WS 4863	Feminism and Globalization

Culture and Society

AMS 3443	Studies in Gender and Sexuality
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
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
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
WS 2023	Introduction to LGBTQ Studies
WS 4913	Independent Study
WS 4993	Honors Thesis

C. Electives

Select 33 semester credit hours of free electives, some of which may need be upper-division, depending on the student's course selections in Section B. Students are advised to consult with their Major Advisor to verify that they will meet the 39 upper-division hours required for the B.A. degree in Women's Studies.

Total Credit Hours 78

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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Mathematics core		3
Credit Hours		15

Spring

HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
WRC 1023	Freshman Composition II (Q) (core)	3
Free elective		3
Life & Physical Sciences core		3
Credit Hours		15

Second Year

Fall		Credit Hours
WS 2013	Introduction to Women's Studies	3
Free elective		3
Free elective		3
Language, Philosophy & Culture core		3
Life & Physical Sciences core		3
Credit Hours		15

Spring

Culture and Society group		3
Free elective		3
Globalization and Borderlands group		3
Social & Behavioral Sciences core		3
Component Area Option core		3
Credit Hours		15

Third Year

Fall		Credit Hours
WS 3613	Feminist Research Methodologies	3

Free elective		3
Subject Group elective		3
Subject Group elective		3
Creative Arts core		3
Credit Hours		15

Spring

WS 4623	Feminist Theories	3
Free elective		3
Subject Group elective		3
Subject Group elective		3
Upper-division free elective		3
Credit Hours		15

Fourth Year

Fall		Credit Hours
WS 4973	Seminar in Women's Studies	3
Free elective		3
Free elective		3
Subject Group elective		3
Subject Group elective		3
Credit Hours		15

Spring

WS 4933	Internship in Women's Studies	3
Free elective		3
Subject Group elective		3
Subject Group elective		3
Upper-division free elective		3
Credit Hours		15
Total Credit Hours		120

Minor in Women's Studies

All students pursuing a Minor in Women's Studies (WS) are required to complete 18 semester credit hours (6 of which must be upper division, 3000-4000 level).

A. Required Courses

WS 2013	Introduction to Women's Studies	3
WS 4623	Feminist Theories	3

B. Additional coursework

Select four of the following, in at least two disciplines other than the student's major: 12

AMS 3443	Studies in Gender and Sexuality	
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	
ENG 3133	Women and Literature	
ENG 4393	Feminist Theory of Literature	

Women's Studies Program

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 4523	Understanding Human Sexuality
IDS 2113	Society and Social Issues
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 3283	Poverty
SOC 3293	Sociology of Gender
SOC 3413	Sociology of the Mexican American Community
WS 2023	Introduction to LGBTQ Studies
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
<hr/>	
Total Credit Hours	18

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 their academic advisor.

College of Engineering

The College of Engineering offers six Bachelor of Science (B.S.) degree programs in: Biomedical Engineering (BME); Chemical Engineering (CME), Civil Engineering (CE); Computer Engineering (CPE); Electrical Engineering (EE); and Mechanical Engineering (ME). The College of Engineering programs in Biomedical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, and Mechanical Engineering are accredited by the Engineering Accreditation Commission of ABET (<http://www.abet.org>). Chemical Engineering is a newly established program and will seek accreditation following graduation of their first class per ABET policy.

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.

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

Admission Policy for Students Admitted Under this Catalog Prior to Fall 2019

Freshmen and Freshman Transfer Students

Students must complete the following admission requirements for freshmen or freshman transfer students (freshman transfers are transfer students who have earned fewer than 30 hours):

- qualify for enrollment in MAT 1214 Calculus I, or a higher level mathematics course, and
- qualify for enrollment in WRC 1013 Freshman Composition I (Q) or higher, or
- if a freshman transfer student, must have completed MAT 1214 Calculus I and WRC 1013 Freshman Composition I (Q) with grades of "C-" or better and have at least a 2.50 overall and STEM (math, science, and engineering) grade point average.

Admission to the College of Engineering is competitive and not guaranteed.

Transfer Students

The following are the transfer requirements for direct admission to the College of Engineering for transfer students who have earned 30 or more credit hours:

- completed MAT 1214 Calculus I, or the equivalent with a grade of "C-" or better, and
- meet grade point average requirements:
 - a. 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
 - b. Have a transfer grade point average of at least 2.25 and a grade point average of at least 2.25 in all mathematics, sciences, and engineering coursework, and be granted admission to the College of Engineering major by holistic review by the College.

Transfer students not admitted directly into the College of Engineering will be changed to Undeclared (UND) and must choose another major outside of engineering. Additional admission requirements are needed for the biomedical and chemical engineering majors and are listed under their respective program requirements.

Admission Policy for Students Admitted Under this Catalog Beginning Fall 2019

Freshmen

Freshman applicants must complete the following admission requirements for direct admission to the College of Engineering:

- meet all UTSA undergraduate admission requirements, and
- are ranked in the top 10 percent of their high school class, qualify for enrollment in MAT 1214 Calculus I, or a higher level mathematics course, and have successfully completed evaluation under the Texas Success Initiative (TSI) for unencumbered registration for courses, or
- are ranked in the top 50 percent of their high school class, have a minimum 1170 SAT* or 24 ACT score, and qualify for enrollment in MAT 1214 Calculus I, or a higher level mathematics course.

* *New SAT scores combine Evidence-Based Reading and Writing and Math.*

Admission to the College of Engineering is competitive and not guaranteed. Freshmen who do not meet the above requirements, but meet UTSA's general admission requirements will be part of "Engineering, Math and Sciences Studies" where students will be able to work towards meeting the prerequisites needed to declare Civil, Computer, Electrical or Mechanical Engineering as their major.

Transfer Students

The following are the transfer requirements for direct admission to the College of Engineering:

- completed MAT 1214 Calculus I, or the equivalent with a grade of "C-" or better, and
- completed WRC 1013 Freshman Composition I (Q) with a grade of "C-" or better, and
- 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.

The following are the transfer requirements for admission by committee review to the College of Engineering:

- completed MAT 1214 Calculus I, or the equivalent with a grade of “C-” or better, and
- completed WRC 1013 Freshman Composition I (Q) with a grade of “C-” or better, and
- have a transfer grade point average of at least 2.25 and a grade point average of at least 2.25 in all mathematics, sciences, and engineering coursework.

Transfer students not admitted directly into the College of Engineering will be changed to Undeclared (UND) and must choose another major outside of engineering. Additional admission requirements are needed for the biomedical and chemical engineering majors and are listed under their respective program requirements.

“C-” Grade Rule

A grade of “C-” or better in any science, engineering or mathematics course required for an engineering degree or any other course that is a prerequisite to a required Biomedical Engineering (BME), Chemical Engineering (CME), Civil Engineering (CE), Computer Engineering (CPE), Electrical Engineering (EE), Mechanical Engineering (ME), or Engineering (EGR) course indicates satisfactory preparation for further engineering education. Any course assigned a grade below a “C-” must be repeated before enrolling in any course for which it is a prerequisite. This requirement is subject to both the Gateway Course and Three-Attempt Limit rules.

Gateway Course

Students pursuing a degree in the College of Engineering must successfully complete MAT 1214 Calculus I, the Gateway Course, with a grade of “C-” or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major outside of engineering.

Three-Attempt Limit for the College of Engineering

A student unable to achieve the “C-” Grade Rule within three enrollments (attempts) shall be required to change his or her major to a field outside of the College of Engineering. Dropping a course with a grade of “W” is considered an attempt.

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 3-semester-credit-hour EGR 3303 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.

To qualify for the Cooperative Education in Engineering Program, a student must have declared a major in the College of Engineering 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 UTSA.

For more information and to apply to the Cooperative Education in Engineering Program, students should contact their faculty mentor.

Degree Requirements Common to All Engineering Programs

During their first semester, students should specify their interest in a specific engineering program by selecting biomedical, chemical, 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 their academic advisor or a faculty advisor in the appropriate department.

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. All students admitted to the College of Engineering must complete at least 42 semester credit hours from their required major courses at UTSA before graduation.

Course 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.

MAT 1214 Calculus I, PHY 1943 Physics for Scientists and Engineers I, and PHY 1963 Physics for Scientists and Engineers II (also listed under section II, General Engineering requirements) may be used to satisfy the Core Curriculum requirements for Mathematics and Life and Physical Sciences.

II. General Engineering requirements

All degree-seeking candidates in engineering must complete the following:

CHE 1103	General Chemistry I	3
EGR 2323	Applied Engineering Analysis I	3
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
or EGR 1324	Calculus II for Engineers	
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4

PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
Total Credit Hours		22

Certificate in Data Center Design

The certificate program in Data Center Design is designed so that students in mechanical, civil, and electrical engineering disciplines will take all the required courses in their disciplines, then, take additional courses from other majors (options A, B and C shown below). For instance, in order to be certified, a mechanical engineering student not only has to satisfy the mechanical engineering degree requirements, but also needs to complete courses in option A, shown below. All students must satisfy the prerequisites for courses in the option before registering for courses. Regardless of the option, all participating students must complete a 3 semester credit hour data center design project. The following exhibits the description of the project:

EGR 4953 Special Studies in Engineering: Overview of Data Center Design and Operation

The goal of this course is to provide the student with a broad overview of the application of technical course material and to utilize that knowledge in completion of an approved data center project. The scope of the project encompasses all of the requisite phases in planning for a system deployment into a data center. The phases are: planning, requirement analysis, facility design and installation, system deployment, check out and transitioning to operations. Students should propose the projects, an advisor will be assigned (either from UTSA or industry), and the project will be evaluated as the principal element of the student's grade. Additionally, the course will include field trips to data centers, and guest lecturers to be provided. Some examples of the lecture topics include: Information Technology set up considerations, PSC management and systems monitoring, fire protection/detection at room and cabinet level, future power projections for servers and high performance computers, future cooling applications, physical security measures, etc. Successful course completion includes completing a class project and project presentation.

Option A. Mechanical Engineering Students

Requires 15 semester credit hours in addition to the B.S. in Mechanical Engineering degree requirements. Mechanical Engineering students pursuing a certificate in Data Center Design must complete the following courses:

CE 3113	Structural Analysis	3
CE 3213	Reinforced Concrete Design	3
EE 3413	Analysis and Design of Control Systems	3
EE 4953	Special Studies in Electrical and Computer Engineering (Power Electronics)	3
EGR 4953	Special Studies in Engineering (Overview of Data Center Design and Operation)	3
Total Credit Hours		15

Option B. Civil Engineering Students

Requires 21 semester credit hours in addition to the B.S. in Civil Engineering degree requirements. Civil Engineering students pursuing a certificate in Data Center Design must complete the following courses:

EE 2213	Electric Circuits and Electronics	3
EE 3413	Analysis and Design of Control Systems	3
EE 4953	Special Studies in Electrical and Computer Engineering (Power Electronics)	3
EGR 4953	Special Studies in Engineering (Overview of Data Center Design and Operation)	3
ME 3293	Thermodynamics I	3
ME 4293	Thermodynamics II	3
ME 4313	Heat Transfer	3
Total Credit Hours		21

Option C. Electrical Engineering Students

Requires 18 semester credit hours in addition to the B.S. in Electrical Engineering degree requirements. Electrical Engineering students pursuing a certificate in Data Center Design must complete the following courses:

EE 4953	Special Studies in Electrical and Computer Engineering (Power Electronics)	3
EGR 4953	Special Studies in Engineering (Overview of Data Center Design and Operation)	3
ME 3293	Thermodynamics I	3
ME 3663	Fluid Mechanics	3
ME 4293	Thermodynamics II	3
ME 4313	Heat Transfer	3
Total Credit Hours		18

Department of Biomedical Engineering

The Department of Biomedical Engineering offers a Bachelor of Science degree in Biomedical Engineering (BME) and a Bachelor of Science degree in Chemical Engineering (CME). The BME degree is accredited by the Accreditation Board for Engineering and Technology (ABET, <http://www.abet.org>).

Individuals enrolled in the BME degree program are given opportunities to develop a strong background in the engineering, technology and physical and biological sciences to learn the analysis, design, and synthesis tools necessary to function successfully as active participants in new and emerging areas of biosciences, medical devices and healthcare technologies. The Biomedical Engineering department continues to be recognized locally and nationally for the quality of its undergraduate program. BME graduates continue to find positions in industry and are accepted into graduate schools and professional training programs (medicine and dentistry) nationwide.

The BME degree 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 are trained in the fundamentals of science and engineering and expected 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. Students develop a degree of depth by selecting courses in three areas of concentration:

1) Biomechanics; 2) Biomaterials and Tissue Engineering; and 3) Biomedical Imaging and Nanotechnology. 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 Chemical Engineering (CME) program provides high-quality education and training in chemical engineering through rigorous course and state-of-the-art lab works. By selecting technical elective courses, students can also develop a degree of depth in one of the four specialized areas of study: 1) Petroleum and Energy Systems, the sector with burgeoning industry demand for well-trained individuals; 2) Materials Engineering, the enabling technical field for microelectronics, energy conversion, and process controls; 3) Bioengineering, the emerging area that biochemistry interfaces with bio-systems and healthcare; and 4) Environmental Engineering, the strategic growth area finding resources and environmental solutions for manufacturers and for consumers.

- B.S. degree in Biomedical Engineering (p. 126)
- B.S. degree in Chemical Engineering (p. 129)

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 Bachelor's Degree Regulations (p. 6)).

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 (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 combined SAT critical reading and mathematics score of at least 1170 with a minimum mathematics score of 550, or an ACT composite score of at least 24, 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 them 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 3.0 or better.

Admission to the biomedical engineering program is 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 a 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 have 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 program educational objectives of the UTSA Biomedical Engineering program are to prepare graduates who will be able to:

- contribute positively to the biomedical industries and/or other sectors such as hospitals, government agencies, and academia;
- enhance competence in biomedical engineering by pursuing an advanced or a professional degree; and
- work successfully as a member in a team environment to facilitate biomedical engineering practice.

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 B.S. 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.

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 1943 may be used to satisfy the core requirement in Life and Physical Sciences, as well as one of the General Engineering Requirements.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

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	3
EGR 2323	Applied Engineering Analysis I	3
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
or EGR 1324	Calculus II for Engineers	

PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
Total Credit Hours		22

Gateway Courses

Students pursuing the B.S. degree in Biomedical Engineering must successfully complete the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

EGR 2323	Applied Engineering Analysis I
MAT 1214	Calculus I

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	2
BME 2103	Physiology for Biomedical Engineering	3
BME 2203	Biomechanics I	3
BME 3003	Biomaterials I	3
BME 3013	Clinical Internship in Biomedical Engineering	3
BME 3023	Biomedical Engineering Technology and Product Development	3
BME 3114	Cellular Biology for Biomedical Engineering	4
BME 3211	Biomedical Engineering Laboratory I	1
BME 3303	Bioinstrumentation	3
BME 3311	Biomedical Engineering Laboratory II	1
BME 3703	Biotransport Phenomena	3
BME 3711	Biomedical Engineering Laboratory III	1
BME 4903	Senior BME Design I	3
BME 4913	Senior BME Design II	3

B. Other Required Courses

All students majoring in Biomedical Engineering are required to complete 6 semester credit hours in the following:

CHE 1113	General Chemistry II	3
STA 1403	Probability and Statistics for the Biosciences	3
or STA 2303	Applied Probability and Statistics for Engineers	

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 three concentrations. The remaining semester credit hours must be selected from other biomedical engineering concentrations to satisfy the Biomedical Engineering electives. 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 3033	Biomedical Engineering Internship
BME 3043	Biomedical Engineering Research
BME 3203	Biomechanics II: Cardiovascular
BME 4203	Biomechanics III
BME 4213	Tissue Mechanics
BME 4293	Topics in Biomechanics
BME 4703	Biomedical Engineering Thermodynamics
BME 4803	Fundamental Computational Bioengineering

Biomaterials, Cellular, and Tissue Engineering Concentration

BME 3033	Biomedical Engineering Internship
BME 3043	Biomedical Engineering Research
BME 3403	Biomaterials II
BME 3413	Biocompatibility of Materials: Tissue-Biomaterial Interaction
BME 3503	Nanomaterials and Nanobiotechnology
BME 4213	Tissue Mechanics
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 3033	Biomedical Engineering Internship
BME 3043	Biomedical Engineering Research
BME 3503	Nanomaterials and Nanobiotechnology
BME 4503	Biosensors
BME 4603	Biophotonics
BME 4613	Biomedical Imaging
BME 4623	Biomedical Optics

D. Technical Electives

A minimum of 9 semester credit hours of Technical Electives must be completed by all students, with at least 6 semester credit hours chosen from one of the three engineering tracks and the remaining 3 semester credit hours chosen from any of the engineering tracks or from the list of science courses below.

Engineering Track 1

EE 2213	Electric Circuits and Electronics
EGR 3323	Applied Engineering Analysis II
EGR 4993	Honors Research

Engineering Track 2

EGR 2103	Statics
EGR 4993	Honors Research
ME 3293	Thermodynamics I
ME 3813	Mechanics of Solids

Engineering Track 3

EGR 2213	Statics and Dynamics
EGR 3323	Applied Engineering Analysis II
EGR 3713	Engineering Economic Analysis
EGR 4993	Honors Research

Science Courses

BIO 1414	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
MAT 2214	Calculus III

Total Credit Hours 66

B.S. in Biomedical Engineering – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1404	Biosciences I (core)	4
CHE 1103	General Chemistry I	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		17

Spring

BME 1002	Introduction to Biomedical Engineering	2
CHE 1113	General Chemistry II	3
MAT 1224	Calculus II	4
PHY 1943	Physics for Scientists and Engineers I (core and major)	3
PHY 1951	Physics for Scientists and Engineers I Laboratory	1
WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		16

Second Year

Fall

BME 2103	Physiology for Biomedical Engineering	3
EGR 2323	Applied Engineering Analysis I	3
STA 1403 or STA 2303	Probability and Statistics for the Biosciences or Applied Probability and Statistics for Engineers	3
PHY 1963	Physics for Scientists and Engineers II	3
PHY 1971	Physics for Scientists and Engineers II Laboratory	1
Technical elective		3
Credit Hours		16

Spring

BME 2203	Biomechanics I	3
BME 3003	Biomaterials I	3
BME 3114	Cellular Biology for Biomedical Engineering	4
BME 3211	Biomedical Engineering Laboratory I	1

Technical elective		3
	Credit Hours	14
Summer		
BME 3013	Clinical Internship in Biomedical Engineering	3
	Credit Hours	3
Third Year		
Fall		
BME 3303	Bioinstrumentation	3
BME 3311	Biomedical Engineering Laboratory II	1
	Government-Political Science core	3
	Technical elective	3
	Upper-division BME elective	3
	Credit Hours	13
Spring		
BME 3023	Biomedical Engineering Technology and Product Development	3
BME 3703	Biotransport Phenomena	3
BME 3711	Biomedical Engineering Laboratory III	1
	Government-Political Science core	3
	Upper-division BME elective	3
	Credit Hours	13
Summer		
BME 3033	Biomedical Engineering Internship (BME Elective)	3
	Credit Hours	3
Fourth Year		
Fall		
BME 4903	Senior BME Design I	3
	Upper-division BME elective	3
	Upper-division BME elective	3
	American History core	3
	Creative Arts core	3
	Credit Hours	15
Spring		
BME 4913	Senior BME Design II	3
	American History core	3
	Component Area Option core	3
	Language, Philosophy and Culture core	3
	Social and Behavioral Sciences core	3
	Credit Hours	15
	Total Credit Hours	125

Bachelor of Science Degree in Chemical Engineering

A Bachelor of Science (B.S.) degree in Chemical Engineering (CME) is the newest addition to the College of Engineering at The University of Texas at San Antonio. The program began welcoming incoming freshman students in fall 2017 and will provide an exceptional learning environment and opportunities for discovery at UTSA.

Chemical engineering is unique, as it educates students to use chemistry, physics, biology and mathematics to solve engineering problems related to production, transformation, and utilization of chemicals, materials and energy.

The Chemical Engineering program will provide high-quality education and training in chemical engineering through rigorous course and state-of-the-art lab works. By selecting technical elective courses, students can also develop a degree of depth in one of the four specialized areas of study: 1) Petroleum/Energy Engineering, the sector with burgeoning industry demand for well-trained individuals; 2) Materials Engineering, the enabling technical field for microelectronics, energy conversion, and process controls; 3) Bioengineering, the emerging area that biochemistry interfaces with bio-systems and healthcare; and 4) Environmental Engineering, the strategic growth area finding resources and environmental solutions for manufactures and for consumers.

The chemical engineering program will prepare graduates with the knowledge and skill sets to capture career opportunities – together, we will make the industry more efficient and our world cleaner and healthier.

Focus Areas

- Bioengineering
- Environmental Engineering
- Materials Engineering
- Petroleum/Energy Engineering

The regulations for this degree comply with the general University regulations (refer to Bachelor's Degree Regulations (p. 6)).

Admission Requirements

A first-time, full-time freshman admitted as a chemical 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 (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 combined SAT critical reading and mathematics score of at least 1170 with a minimum mathematics score of 550, or an ACT composite score of at least 24, 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 Chemical Engineering program must submit the following supplemental documents:

- two (2) letters of recommendation,
- a copy of the transcript, and
- a statement of their interests, professional career goals and how the Chemical Engineering program will help them achieve those goals.

Admission to the chemical engineering program is 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 a Chemical Engineering Major

All students must be in good academic standing in order to remain in the Chemical Engineering program. The minimum requirements that a student must satisfy in order to remain in good standing as a chemical 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 have a cumulative GPA below 2.5 will be deemed to be not in good academic standing as a chemical engineering major and will be removed from the program.

Education Objectives

The Chemical Engineering program is preparing graduates to achieve the following Educational Objectives:

- To have the depth that is necessary to apply chemical engineering principles to practice;
- To have the breadth to pursue a productive career in diverse fields of chemical engineering in a globally competitive economy, and
- To instill professional values such that they will be successful leaders in their profession.

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 Chemical Engineering requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. degree in Chemical 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.

MAT 1214 may be used to satisfy the core requirement in Mathematics, as well as one of the General Engineering Requirements. PHY 1943 and PHY 1963 may be used to satisfy the core requirement in Life and Physical Sciences, as well as one of the General Engineering Requirements. ECO 2023 may be used to satisfy the core requirement in Social and Behavioral Sciences. EGR 1343 may be used to satisfy the Component Area Option requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

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	3
EGR 2323	Applied Engineering Analysis I	3
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
	or EGR 1324	Calculus II for Engineers
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
Total Credit Hours		22

Gateway Courses

Students pursuing the B.S. degree in Chemical Engineering must successfully complete the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

EGR 2323	Applied Engineering Analysis I
MAT 1214	Calculus I

Degree Requirements

Students seeking the B.S. degree in Chemical Engineering must complete the following semester credit hours, as well as the Core Curriculum requirements and General Engineering requirements:

A. Required Chemical Engineering courses

CME 1201	Introduction to Chemical Engineering	1
CME 2103	Chemical Process Principles	3
CME 2203	Computational Methods in Chemical Engineering	3
CME 3003	Introduction to Materials Science and Engineering	3
CME 3103	Thermodynamics I	3
CME 3303	Transport Phenomena	3
CME 3403	Unit Operations–Transport Processes	3

CME 3503	Kinetics and Reactor Design	3
CME 3601	Chemical Engineering Laboratory I	1
CME 3703	Transport Phenomena II	3
CME 4001	Chemical Process Safety and Risk Management	1
CME 4103	Process Dynamics and Control	3
CME 4163	Thermodynamics II	3
CME 4201	Chemical Engineering Laboratory II	1
CME 4264	Product and Process Design	4

B. Other required courses

CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory (CHE 1103 also satisfies a General Engineering Requirement)	4
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	4
CHE 2603 & CHE 2612	Organic Chemistry I and Organic Chemistry I Laboratory	5
CHE 3643	Organic Chemistry II	3
CHE 3804	Physical Chemistry I and Laboratory	4
EGR 3323	Applied Engineering Analysis II	3
EGR 3713	Engineering Economic Analysis	3
STA 2303	Applied Probability and Statistics for Engineers	3

C. Prescribed electives

A minimum of 9 semester credit hours is required to fulfill this requirement. Elective courses must be selected from one of the following specializations:

Bioengineering

Specialization Electives: Select three courses from the following:

BME 2103	Physiology for Biomedical Engineering
BME 2203	Biomechanics I
BME 3003	Biomaterials I
BME 3114	Cellular Biology for Biomedical Engineering
BME 3303	Bioinstrumentation
BME 3503	Nanomaterials and Nanobiotechnology
BIO 3513	Biochemistry
CME 4513	Selected Topics in Bioengineering

Environmental Engineering

Specialization electives. Select three courses from the following:

CE 2633	Environmental Engineering
CE 4633	Water and Wastewater Treatment
CE 4603	Water Resources Engineering
CE 4613	Environmental Chemistry
CE 5213	Biological Phenomena in Environmental Engineering (with approval)
CE 5623	Advanced Treatment Processes for Water Quality Control (with approval)
CHE 3464	Descriptive Inorganic Chemistry
CME 4543	Selected Topics in Environmental Engineering

Materials Engineering

Specialization electives. Select three courses from the following:

CME 3433	Crystal Chemistry of Structure and Properties
CME 4533	Selected Topics in Materials Science and Engineering
EE 2423	Network Theory
EE 3213	Electromagnetic Engineering

EE 3323	Electronic Devices or PHY 3313 Materials Physics
EE 4323	Dielectric and Optoelectronic Engineering Laboratory
EE 4523	Introduction to Micro and Nanotechnology or PHY 4653 Introduction to Micro and Nanotechnology
EGR 2103	Statics
ME 3243	Materials Engineering
ME 4683	Corrosion Engineering
PHY 2103	Modern Physics
PHY 3423	Electricity and Magnetism
PHY 4603	Crystallography and Materials Characterization
PHY 4623	Nanotechnology

Petroleum/Energy Engineering

Specialization Electives. Select three courses from the following:

CME 4423	Selected Topics in Petroleum/Energy Engineering I
CME 4523	Selected Topics in Petroleum/Energy Engineering II
EGR 2213	Statics and Dynamics
ME 4593	Alternative Energy Sources
ME 4653	Oil and Gas Engineering and Reservoir Geomechanics
PHY 2103	Modern Physics
PHY 4703	Renewable Energy: Solar Energy Convertors

Common Electives

CME 4601	Independent Study
CME 4602	Independent Study
CME 4603	Independent Study

Total Credit Hours

76

B.S. in Chemical Engineering – Recommended Four-Year Academic Plan**First Year**

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory	1
EGR 1343	The Impact of Modern Technologies on Society (core)	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
	Credit Hours	17

Spring

CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory	1
CME 1201	Introduction to Chemical Engineering	1
MAT 1224	Calculus II	4
PHY 1943	Physics for Scientists and Engineers I (core and major)	3
PHY 1951	Physics for Scientists and Engineers I Laboratory	1

WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		16

Second Year

Fall

CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory	2
CME 2103	Chemical Process Principles	3
EGR 2323	Applied Engineering Analysis I	3
PHY 1963	Physics for Scientists and Engineers II (core and major)	3
PHY 1971	Physics for Scientists and Engineers II Laboratory	1
Credit Hours		15

Spring

CHE 3643	Organic Chemistry II	3
CHE 3804	Physical Chemistry I and Laboratory	4
CME 4001	Chemical Process Safety and Risk Management	1
ECO 2023	Introductory Microeconomics (core)	3
EGR 3323	Applied Engineering Analysis II	3
STA 2303	Applied Probability and Statistics for Engineers	3
Credit Hours		17

Third Year

Fall

CME 2203	Computational Methods in Chemical Engineering	3
CME 3003	Introduction to Materials Science and Engineering	3
CME 3103	Thermodynamics I	3
CME 3303	Transport Phenomena	3
Specialization Elective I		3
Credit Hours		15

Spring

CME 3403	Unit Operations—Transport Processes	3
CME 3503	Kinetics and Reactor Design	3
CME 3601	Chemical Engineering Laboratory I	1
CME 3703	Transport Phenomena II	3
Creative Arts core		3
American History core		3
Credit Hours		16

Fourth Year

Fall

CME 4103	Process Dynamics and Control	3
CME 4163	Thermodynamics II	3
CME 4201	Chemical Engineering Laboratory II	1
Specialization Elective II		3
American History core		3
Government-Political Science core		3
Credit Hours		16

Spring

CME 4264	Product and Process Design	4
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EGR 3713	Engineering Economic Analysis	3
Specialization Elective III		3
Government-Political Science core		3
Language, Philosophy and Culture core		3
Credit Hours		16
Total Credit Hours		128

Department of Civil and Environmental Engineering

The Department of Civil Engineering offers a Bachelor of Science degree in Civil Engineering.

Description of Program

The Civil and Environmental Engineering (CEE) Department is one of the four College of Engineering departments. It is housed in the Biosciences and Engineering Building (BSE). The (B.S.) degree in Civil Engineering (CE) was first offered in 1982. The Civil Engineering B.S. program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org (<http://www.abet.org>).

Mission Statement

The faculty of the Department of Civil and Environmental Engineering are committed to excellence in teaching, research, and service to the community and the engineering profession. The Civil and Environmental Engineering Department’s mission is to provide our students an education that integrates fundamental science and engineering skills with design principles to solve engineering problems. Our programs provide students opportunities for graduate education, to acquire life-long learning skills, and to participate in research that advances the discipline and benefits society. Students will be prepared to become professional engineers and leaders in the Civil and Environmental Engineering profession.

Bachelor of Science Degree in Civil Engineering

The Department of Civil and Environmental Engineering offers an ABET-accredited bachelor’s degree that, in terms of graduating class size, ranks in the 80th percentile nation-wide. The Department is committed to excellence in teaching, research, and service to the community and the engineering profession. The Civil and Environmental Engineering department’s mission is to provide our students an education that integrates fundamental science and engineering skills with design principles to solve engineering problems. Our programs provide students opportunities for graduate education, to acquire life-long learning skills, and to participate in research that advances the discipline and benefits society. Students will be prepared to become professional engineers and leaders in the Civil and Environmental Engineering profession.

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). Civil Engineering Bachelor of Science graduates are expected to attain the following program educational objectives (PEOs):

- meet the expectations of their employers,
- will endeavor to become licensed professional engineers, and
- are able to pursue graduate studies, if so desired.

The minimum number of semester credit hours required for the Bachelor of Science (B.S.) in Civil Engineering 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. Each is explained in detail.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. degree in Civil Engineering must fulfill the 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.

MAT 1214 may be used to satisfy the core requirement in Mathematics, as well as one of the General Engineering requirements. PHY 1943 and PHY 1963 may be used to satisfy the core requirement in Life and Physical Sciences, as well as two of the General Engineering requirements. ECO 2023 may be used to satisfy the core requirement in Social and Behavioral Sciences. CS 1173 may be used to satisfy the core requirement in the Component Area Option.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

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	3
EGR 2323	Applied Engineering Analysis I	3
EGR 3713	Engineering Economic Analysis	3

MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
	or EGR 1324	Calculus II for Engineers
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
Total Credit Hours		25

Gateway Courses

Students pursuing the B.S. degree in Civil Engineering must successfully complete each of the following Gateway Courses with a grade of “C-” or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

EGR 2323	Applied Engineering Analysis I
MAT 1214	Calculus I

Civil Engineering Degree Requirements

In addition to Core Curriculum and General Engineering requirements, students seeking a B.S. degree in Civil Engineering are required to take 70 semester credit hours of Civil Engineering courses. Of these 70 credit hours, 64 are from required courses, while 3 can be satisfied from CE elective courses and while the remaining 3 can be satisfied with Life and Physical Science courses.

A. Required courses

CE 1301	Introduction to Civil Engineering	1
CE 2103	Civil Engineering Measurements	3
CE 2313	Computer-Aided Design in Civil Engineering	3
CE 2633	Environmental Engineering	3
CE 3103	Mechanics of Solids	3
CE 3113	Structural Analysis	3
CE 3173	Numerical Methods	3
CE 3213	Reinforced Concrete Design	3
CE 3223	Highway Engineering	3
CE 3233	Steel Design	3
CE 3243	Properties and Behavior of Engineering Materials	3
CE 3413	Geotechnical Engineering and Applications	3
CE 3603	Fluid Mechanics	3
CE 4463	Foundation Engineering	3
CE 4543	Project Design and Construction Management	3
CE 4603	Water Resources Engineering	3
CE 4633	Water and Wastewater Treatment	3
CE 4813	Civil Engineering Design	3
EGR 1403	Technical Communication	3
EGR 2103	Statics	3
EGR 2513	Dynamics	3
STA 2303	Applied Probability and Statistics for Engineers	3

B. Civil Engineering technical electives

Select one of the following courses. 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 (Department Chair approval required).

CE 4103	Advanced Steel Design
CE 4133	Advanced Reinforced Concrete
CE 4143	Introduction to Timber Design
CE 4153	Prestressed Concrete
CE 4163	Advanced Structural Analysis
CE 4173	Dynamics and Vibrations
CE 4183	Experimental Stress Analysis
CE 4223	Introduction to Masonry Design
CE 4283	Design of Buildings for Lateral Loads
CE 4293	Geographic Information Systems (GIS)
CE 4303	Hydrometeorology
CE 4403	Advanced Characterization of Highway Materials
CE 4453	Transportation Engineering
CE 4613	Environmental Chemistry
CE 4723	Hydraulic Systems Design
CE 4733	Applied Hydrology
GEO 4023	Engineering Geology

C. Life and Physical Sciences

Select one of the following courses: 3

AST 1013	Introduction to Astronomy
AST 1033	Exploration of the Solar System
BIO 1233	Contemporary Biology I
BIO 1243	Contemporary Biology II
BIO 1404	Biosciences I
BIO 1414	Biosciences II
ES 1213	Environmental Geology
ES 2013	Introduction to Environmental Science I
ES 2023	Introduction to Environmental Science II
ES 3103	Environmental Microbiology
GEO 1013	The Third Planet
GEO 1103	Physical Geology
GEO 4023	Engineering Geology

Total Credit Hours 70

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 strongly encouraged to take the Fundamentals of Engineering (FE) Examination as administered by the National Council of Examiners for Engineering and Surveying (<http://ncees.org>). Graduates are expected to pursue life-long learning and obtain their Professional Engineering license.

This curriculum is designed to meet the student learning outcomes defined by the Accreditation Board of Engineering and Technology and the American Society of Civil Engineers. More specifically, it integrates design throughout the curriculum starting with the 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 Civil Engineering courses, such as CE 3213 Reinforced Concrete Design, CE 3233 Steel Design,

CE 3413 Geotechnical Engineering and Applications, CE 4633 Water and Wastewater Treatment, CE 3223 Highway Engineering, and CE 4603 Water Resources Engineering. Design elements are also included in many technical elective courses. The design experience culminates in the senior capstone design course, CE 4813 Civil Engineering Design. In this course, students work in multidisciplinary teams involving three or more civil engineering areas and solve practical civil engineering problems drawing upon most of their prior coursework experience. These projects culminate in formal presentations evaluated by professional engineers.

The following provides a summary table of the recommended courses by semester for the B.S. degree in Civil Engineering.

B.S. in Civil Engineering – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
CE 1301	Introduction to Civil Engineering	1
CHE 1103	General Chemistry I	3
CS 1173	Data Analysis and Visualization (core)	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		17

Spring

CE 2103	Civil Engineering Measurements	3
EGR 1403	Technical Communication	3
MAT 1224	Calculus II	4
PHY 1943	Physics for Scientists and Engineers I (core and major)	3
PHY 1951	Physics for Scientists and Engineers I Laboratory	1
WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		17

Second Year

Fall

CE 2633	Environmental Engineering	3
EGR 2103	Statics	3
EGR 2323	Applied Engineering Analysis I	3
PHY 1963	Physics for Scientists and Engineers II (core and major)	3
PHY 1971	Physics for Scientists and Engineers II Laboratory	1
American History core		3
Credit Hours		16

Spring

CE 2313	Computer-Aided Design in Civil Engineering	3
CE 3103	Mechanics of Solids	3
ECO 2023	Introductory Microeconomics (core)	3
EGR 2513	Dynamics	3
STA 2303	Applied Probability and Statistics for Engineers	3

Life & Physical Sciences elective		3
	Credit Hours	18
Third Year		
Fall		
CE 3113	Structural Analysis	3
CE 3173	Numerical Methods	3
CE 3233	Steel Design	3
CE 3243	Properties and Behavior of Engineering Materials	3
CE 3603	Fluid Mechanics	3
	Credit Hours	15
Spring		
CE 3213	Reinforced Concrete Design	3
CE 3223	Highway Engineering	3
CE 3413	Geotechnical Engineering and Applications	3
EGR 3713	Engineering Economic Analysis	3
POL 1013	Introduction to American Politics (core)	3
	Credit Hours	15
Fourth Year		
Fall		
CE 4463	Foundation Engineering	3
CE 4543	Project Design and Construction Management	3
CE 4603	Water Resources Engineering	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
American History core		3
	Credit Hours	15
Spring		
CE 4633	Water and Wastewater Treatment	3
CE 4813	Civil Engineering Design	3
CE Technical elective		3
Creative Arts core		3
Language, Philosophy & Culture core		3
	Credit Hours	15
	Total Credit Hours	128

Department of Electrical and Computer Engineering

The Department of Electrical and Computer Engineering (ECE) offers two ABET-accredited bachelors degrees: a Bachelor of Science degree in Electrical Engineering (B.S. EE) and a Bachelor of Science degree in Computer Engineering (B.S. CpE). Individuals enrolled in these degree programs are given opportunities to develop a strong background in the engineering sciences and to learn the analysis, design, and synthesis tools necessary to function successfully as active participants in traditional, new, and emerging areas of electrical and computer engineering related technologies. 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 Engineering program are that our graduates will:

1. contribute their technical knowledge to better their lives and society.
2. assume positions of leadership and responsibility in their electrical engineering related careers.
3. pursue graduate and professional studies.
4. conduct themselves in a professional manner that meets or exceeds the expectations of their employers.

The educational objectives of the Computer Engineering program are that our graduates will:

1. engage in life-long learning, remaining current and becoming leaders in their profession.
2. advance and expand in their computer engineering related careers by applying their engineering knowledge and skills.
3. contribute productively to the workforce in state, regional, national and international industries and government organizations.
4. communicate effectively, provide enabling solutions to societal challenges, and respond to technical, business, social, ethical, and human needs of the society through their professional endeavors.

Meeting Program Objectives

To meet the program objectives, the curriculum for the Bachelor of Science (B.S.) 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 B.S. degree in Computer Engineering, the selection of technical electives are from areas of digital system design, computer architecture, VLSI design, engineering programming languages and embedded systems.

Department faculty of outstanding quality work in concert to provide the two degree programs that are challenging to students, with depth in engineering sciences, design orientation, and modern laboratory experience. The program 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 fundamental courses 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 (5 semester credit hours). Students in the technical elective courses have ample opportunities to learn and use 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 two technical electives (6 semester credit hours) from the chosen area. The remaining three technical electives (9 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 the co-op course for 3 credit hours 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 programs 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 and Computer Engineering Laboratory II, where they must design complex 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

and Computer Engineering Laboratory I and EE 4113 Electrical and Computer Engineering Laboratory II emphasize hands-on experiments using basic to advanced capability instruments and formal written, as well as oral, reports. In EE 4812 Electrical Engineering Design I, CPE 4812 Computer Engineering Design I, EE 4813 Electrical Engineering Design II, and CPE 4813 Computer Engineering Design II, students are required to design, implement, test, demonstrate and make an oral presentation on an electronic or computer system.

Other courses with design emphasis that electrical engineering students take include: EE 3213 Electromagnetic Engineering, 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.

- B.S. degree in Electrical Engineering (p. 136)
- B.S. degree in Computer Engineering (p. 139)
- Integrated B.S./M.S. Program (p. 141)

Bachelor of Science Degree in Electrical Engineering

The Bachelor of Science (B.S.) degree in Electrical Engineering has concentrations in Communications; 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 ABET, <http://www.abet.org>. The B.S. 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 technology areas. 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 B.S. 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.

MAT 1214 may be used to satisfy the core requirement in Mathematics, as well as one of the General Engineering requirements. PHY 1943 and PHY 1963 may be used to satisfy the core requirement in Life and Physical Sciences, as well as two of the General Engineering requirements.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

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	3
EGR 2323	Applied Engineering Analysis I	3
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
or EGR 1324	Calculus II for Engineers	
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
Total Credit Hours		22

Gateway Courses

Students pursuing the B.S. degree in Electrical Engineering must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

EE 1322	Introduction to Electrical and Computer Engineering
EGR 2323	Applied Engineering Analysis I
MAT 1214	Calculus I

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. Required Courses

1. Electrical Engineering courses		
EE 1322	Introduction to Electrical and Computer Engineering	2
EE 2423	Network Theory	3
EE 2511	Logic Design Laboratory	1
EE 2513	Logic Design	3
EE 3113	Electrical and Computer Engineering Laboratory I	3
EE 3213	Electromagnetic Engineering	3
EE 3313	Electronic Circuits I	3
EE 3323	Electronic Devices	3
EE 3413	Analysis and Design of Control Systems	3
EE 3423	Mathematics in Signals and Systems	3
EE 3463	Microcomputer Systems I	3
EE 4113	Electrical and Computer Engineering Laboratory II	3
EE 4313	Electronic Circuits II	3
EE 4812	Electrical Engineering Design I	2
EE 4813	Electrical Engineering Design II	3
EGR 2213	Statics and Dynamics	3
EGR 3323	Applied Engineering Analysis II	3

2. Supporting courses

CPE 2073	Introduction to Computer Programming for Engineers	3
EE 3533	Probability and Stochastic Processes	3
Mathematics and Science Supporting Course: Select one from the following courses:		

BIO 1233	Contemporary Biology I
CHE 1113	General Chemistry II
MAT 2233	Linear Algebra
MAT 3013	Foundations of Mathematics
STA 3523	Mathematical Statistics

B. Electrical engineering elective courses

Select at least two courses from a single one of the following concentrations. The other three courses may be selected from any of the concentration areas. Topics offered under EE 4953 Special Studies in Electrical Engineering may be approved as technical electives in the relevant concentration.

Communication Concentration

EE 3523	Discrete Signals and Systems
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
EE 3233	Systems Programming for Engineers
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 3523	Discrete Signals and Systems	
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 4513	Introduction to VLSI Design	
EE 4523	Introduction to Micro and Nanotechnology	
EE 4543	Advanced Topics in Micro and Nanotechnology	
Systems and Control Concentration		
EE 3523	Discrete Signals and Systems	
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	
Total Credit Hours		71

B.S. in Electrical Engineering – Recommended Four-Year Academic Plan

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103	General Chemistry I	3
EE 1322	Introduction to Electrical and Computer Engineering	2
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15
Spring		
EE 2511	Logic Design Laboratory	1
EE 2513	Logic Design	3
MAT 1224	Calculus II	4
PHY 1943	Physics for Scientists and Engineers I (core and major)	3
PHY 1951	Physics for Scientists and Engineers I Laboratory	1
WRC 1023	Freshman Composition II (Q) (core)	3

CPE 2073	Introduction to Computer Programming for Engineers	3
Credit Hours		18

Second Year

Fall

EE 2423	Network Theory	3
EGR 2213	Statics and Dynamics	3
EGR 2323	Applied Engineering Analysis I	3
PHY 1963	Physics for Scientists and Engineers II (core and major)	3
PHY 1971	Physics for Scientists and Engineers II Laboratory	1

American History core		3
Credit Hours		16

Spring

EE 3313	Electronic Circuits I	3
EE 3423	Mathematics in Signals and Systems	3
EE 3463	Microcomputer Systems I	3
EGR 3323	Applied Engineering Analysis II	3
American History core		3

Credit Hours		15
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Third Year

Fall

EE 3113	Electrical and Computer Engineering Laboratory I	3
EE 3323	Electronic Devices	3
EE 4313	Electronic Circuits II	3

Mathematics and Science Supporting Course		3
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Language, Philosophy & Culture core		3
Credit Hours		15

Spring

EE 3213	Electromagnetic Engineering	3
EE 3413	Analysis and Design of Control Systems	3
EE 3533	Probability and Stochastic Processes	3

EE Technical elective		3
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POL 1013	Introduction to American Politics (core)	3
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Credit Hours		15
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Fourth Year

Fall

EE 4113	Electrical and Computer Engineering Laboratory II	3
EE 4812	Electrical Engineering Design I	2

EE Technical elective		3
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EE Technical elective		3
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POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
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Creative Arts core		3
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Credit Hours		17
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Spring

ECO 2023	Introductory Microeconomics (core)	3
EE 4813	Electrical Engineering Design II	3
EE Technical elective		3
EE Technical elective		3
Component Area Option core		3
Credit Hours		15
Total Credit Hours		126

Bachelor of Science Degree in Computer Engineering

The Bachelor of Science (B.S.) 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. The program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

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 B.S. 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.

MAT 1214 may be used to satisfy the core requirement in Mathematics, as well as one of the General Engineering requirements. PHY 1943 and PHY 1963 may be used to satisfy the core requirement in Life and Physical Sciences, as well as two of the General Engineering requirements.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3

Component Area Option	3
Total Credit Hours	42

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	3
EGR 2323	Applied Engineering Analysis I	3
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
or EGR 1324	Calculus II for Engineers	
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
Total Credit Hours		22

Gateway Courses

Students pursuing the B.S. degree in Computer Engineering must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

EE 1322	Introduction to Electrical and Computer Engineering
EE 2513	Logic Design
MAT 1214	Calculus I

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. Required courses

1. Electrical and Computer engineering courses:		
EE 1322	Introduction to Electrical and Computer Engineering	2
EE 2423	Network Theory	3
EE 2511	Logic Design Laboratory	1
EE 2513	Logic Design	3
EE 3113	Electrical and Computer Engineering Laboratory I	3
EE 3223	C++ and Data Structures	3
EE 3233	Systems Programming for Engineers	3
EE 3313	Electronic Circuits I	3
EE 3323	Electronic Devices	3
EE 3423	Mathematics in Signals and Systems	3
EE 3463	Microcomputer Systems I	3
EE 3563	Digital Systems Design	3
EE 4113	Electrical and Computer Engineering Laboratory II	3
EE 4243	Computer Organization and Architecture	3

CPE 4812	Computer Engineering Design I	2
CPE 4813	Computer Engineering Design II	3
EGR 3323	Applied Engineering Analysis II	3
2. Supporting courses		
CPE 2073	Introduction to Computer Programming for Engineers	3
or CS 2073	Computer Programming with Engineering Applications	
CS 2233	Discrete Mathematical Structures	3
EE 3533	Probability and Stochastic Processes	3
B. Computer engineering electives		
Select five courses including one Mathematics from the following:		15
EE 4513	Introduction to VLSI Design	
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 and Computer Engineering (Computer Engineering related topics only)	
MAT 2233	Linear Algebra	
MAT 3013	Foundations of Mathematics	
MAT 3123	Fundamentals of Geometry	
Total Credit Hours		71

B.S. in Computer Engineering – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
EE 1322	Introduction to Electrical and Computer Engineering	2
CHE 1103	General Chemistry I	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15
Spring		
EE 2511	Logic Design Laboratory	1
EE 2513	Logic Design	3
MAT 1224	Calculus II	4
PHY 1943	Physics for Scientists and Engineers I (core and major)	3
PHY 1951	Physics for Scientists and Engineers I Laboratory	1
WRC 1023	Freshman Composition II (Q) (core)	3
CPE 2073	Introduction to Computer Programming for Engineers	3
or CS 2073	Computer Programming with Engineering Applications	
Credit Hours		18

Second Year

Fall		
CS 2233	Discrete Mathematical Structures	3
EE 2423	Network Theory	3
EGR 2323	Applied Engineering Analysis I	3
PHY 1963	Physics for Scientists and Engineers II (core and major)	3
PHY 1971	Physics for Scientists and Engineers II Laboratory	1
American History core		3
Credit Hours		16

Spring

EE 3313	Electronic Circuits I	3
EE 3423	Mathematics in Signals and Systems	3
EE 3463	Microcomputer Systems I	3
EGR 3323	Applied Engineering Analysis II	3
American History core		3
Credit Hours		15

Third Year

Fall		
EE 3113	Electrical and Computer Engineering Laboratory I	3
EE 3223	C++ and Data Structures	3
EE 3323	Electronic Devices	3
EE 3563	Digital Systems Design	3
Language, Philosophy & Culture core		3
Credit Hours		15

Spring

EE 3233	Systems Programming for Engineers	3
EE 3533	Probability and Stochastic Processes	3
EE 4243	Computer Organization and Architecture	3
POL 1013	Introduction to American Politics (core)	3
Technical elective		3
Credit Hours		15

Fourth Year

Fall		
CPE 4812	Computer Engineering Design I	2
EE 4113	Electrical and Computer Engineering Laboratory II	3
POL 1133	Texas Politics and Society (core)	3
or POL 1213	or Civil Rights in Texas and America	
Technical elective		3
Technical elective		3
Creative Arts core		3
Credit Hours		17
Spring		
CPE 4813	Computer Engineering Design II	3
ECO 2023	Introductory Microeconomics (core)	3

Technical elective	3
Technical elective	3
Component Area Option core	3
Credit Hours	15
Total Credit Hours	126

Integrated Bachelor of Science/Master of Science Program

The integrated B.S./M.S. (Bachelor of Science and Master of Science) program administered by the Department of Electrical and Computer Engineering is designed to make possible for highly motivated and qualified B.S. students to obtain both an undergraduate degree and an advanced degree within an accelerated timeline. Through this program, motivated B.S. students can start working with the faculty advisors on research projects as early as in their senior year.

Program Admission Requirements

Applications to the B.S./M.S. program must be submitted after the completion of 75 but before 90 semester credit hours of coursework, usually when a student is enrolled in his or her junior year or in the sixth semester of the B.S. program.

The B.S./M.S. program applicants must have a minimum of 3.3 for both cumulative and major grade point averages. For qualified applicants, the department will waive the GRE examination requirement. To apply for the program, students need to:

- Apply online under the category of Integrated B.S./M.S. (B.S. in Electrical Engineering, or Computer Engineering, and M.S. in Electrical Engineering, Computer Engineering, or Advanced Materials Engineering); and
- Submit an official UTSA transcript and a Proposed Program of Study with an approval from B.S./M.S. advisors.

Submission of both recommendation letters and a personal statement is optional but highly recommended for consideration of scholarships.

Degree Requirements

B.S. Degree requirement: The current undergraduate degree programs in Electrical Engineering and Computer Engineering require 126 semester credit hours for completion with fifteen of these hours (five, 3-hour courses) as technical electives. Students accepted into the Integrated B.S./M.S. program will be required to complete 117 undergraduate credit hours and 9 graduate credit hours to replace three of the five undergraduate technical elective courses toward the B.S. degree, provided that students pass the corresponding challenge exams for the three undergraduate elective courses. The graduate courses include one of the required core graduate courses and two technical electives from the same concentration area. Students may enroll in a cross-listed course and take a challenge examination following UTSA's challenge examination procedure (see Footnote 1) to earn undergraduate credits for the graduate course taken. Credits earned by challenging UTSA undergraduate courses by examination apply to Bachelor's degree requirements as though the courses had been completed in the normal manner. Since a grade of "CR" is awarded, such courses are not included in the UTSA grade point average calculation.

A graduate core course taken as an undergraduate must be completed with a grade of "B" or better. If a grade lower than "B" is received, it can be counted as an undergraduate technical elective, but in order to

stay in the Integrated B.S./M.S. program, a student must pass one of the graduate core courses with a grade of "B" or better. Undergraduate students not able to satisfy this requirement, or simply wishing to voluntarily withdraw from the Integrated B.S./M.S. program, must use a combination of five undergraduate technical electives and graduate courses to satisfy the original 126-hour regular degree program requirement in order to receive their B.S. degree. Students continuing on in the Integrated B.S./M.S. program will receive their B.S. degrees once they have earned 117 undergraduate credit hours and 9 credit hours of technical elective courses by passing the challenge examinations. The 9 graduate credit hours taken as an undergraduate will be counted toward the M.S. degree requirement.

M.S. Degree requirement: A student enrolled in the Integrated B.S./M.S. program can graduate by completing requirements for a thesis or nonthesis (project) option.

(i) Thesis Option: Students must complete 30 credit hours including 6 hours of thesis work.

(ii) Nonthesis Option: Students must complete 33 credit hours including 3 hours of project work.

B.S./M.S. Classification

Once admitted to the Integrated B.S./M.S. program, students are allowed to take graduate courses as undergraduate students. Students admitted to the Integrated B.S./M.S. program will be reclassified from undergraduate to graduate student status when they have completed 126 semester credit hours of coursework (of any combination of graduate and undergraduate hours) toward their degrees. B.S./M.S. students can receive their B.S. degree upon completion of 126 semester credit hours, including those credited by passing the challenge examinations, at which point the program will certify the student's eligibility to receive the B.S. degree and request the Graduate School to change the student status in the Student Information System.

¹ Currently the **Challenging a UTSA Course policy** at UTSA applies only to undergraduate courses; thus, this mechanism is valid only if the same graduate course is cross-listed with an undergraduate course or until the procedure is extended to graduate courses.

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 ABET, <http://www.abet.org>. 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 many industries, including companies or government agencies associated with aerospace, automotive, energy, petroleum, manufacturing, biomedical engineering, 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 Mechanical Engineering curriculum provides education and basic engineering training through the required coursework. Students may develop increased specialization and depth through the selection of technical elective courses. 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 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.

Program Educational Objectives

The Mechanical Engineering Program prepares students to attain the following program educational objectives after graduation:

1. Have engineering or other careers in industry, government, and/or will pursue advanced graduate or professional degrees.
2. Apply their engineering knowledge and skills to their professional careers.
3. Continue to advance their knowledge, communication and leadership skills using technology, continuing education, problem solving, and by serving technical or professional societies.
4. Apply their understanding of societal, environmental, and ethical issues to their professional activities.

Student Outcomes

Graduates of the UTSA Mechanical Engineering Program will demonstrate the following student outcomes. Attainment of these

outcomes prepares graduates to enter the professional practice of engineering.

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

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. A minimum grade of "C-" or better is required for all mathematics, science, Engineering (EGR), and Mechanical Engineering (ME) courses in the curriculum.

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.

MAT 1214 may be used to satisfy the core requirement in Mathematics, as well as one of the General Engineering requirements. PHY 1943 and PHY 1963 may be used to satisfy the core requirement in Life and Physical Sciences, as well as two of the General Engineering requirements. EGR 1403 may be used to satisfy the core requirement in the Component Area Option.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3

Component Area Option	3
Total Credit Hours	42

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	3
EGR 2323	Applied Engineering Analysis I	3
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
or EGR 1324	Calculus II for Engineers	
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
Total Credit Hours		22

Gateway Courses

Students pursuing the Bachelor of Science degree in Mechanical Engineering must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

EGR 2103	Statics
EGR 2323	Applied Engineering Analysis I
EGR 2513	Dynamics

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. Required foundation and general mechanical engineering courses:

EE 2213	Electric Circuits and Electronics	3
EGR 2103	Statics	3
EGR 2513	Dynamics	3
EGR 3323	Applied Engineering Analysis II	3
ME 1403	Engineering Practice and Graphics	3
ME 2173	Numerical Methods	3
ME 3113	Measurements and Instrumentation	3
ME 3241	Materials Engineering Laboratory	1
ME 3243	Materials Engineering	3
ME 3263	Manufacturing Engineering	3
ME 3293	Thermodynamics I	3
ME 3541	Dynamics and Controls Laboratory	1
ME 3543	Dynamic Systems and Control	3
ME 3663	Fluid Mechanics	3
ME 3813	Mechanics of Solids	3

ME 3823	Machine Element Design I	3
ME 4293	Thermodynamics II	3
ME 4312	Thermal and Fluids Laboratory	2
ME 4313	Heat Transfer	3
ME 4543	Mechatronics	3
ME 4801	Manufacturing Practices Laboratory	1
ME 4812	Senior Design I	2
ME 4813	Senior Design II	3

B. Mechanical Engineering elective courses

Select 9 semester credit hours of Mechanical Engineering elective courses. Students are encouraged to choose courses from a specific group listed below. Students may also select courses to earn a Certificate in Oil/Gas.

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

Manufacturing Engineering and Systems

ME 4503	Lean Manufacturing and Enterprise Engineering
ME 4563	Computer Integrated Manufacturing
ME 4573	Facilities Planning and Design
ME 4583	Enterprise Process Engineering

Design and Control of Mechanical Systems

ME 3323	Mechanical Vibration
ME 3513	Mechanism Design
ME 4433	Machine Element Design II
ME 4553	Automotive Vehicle Dynamics
ME 4723	Reliability and Quality Control in Engineering Design
ME 4773	Robotics

Mechanics and Materials

ME 4243	Intermediate Materials Engineering
ME 4603	Finite Element Analysis
ME 4963	Mechanical Engineering Applications to Biomedical Systems

Oil and Gas

EGR 3713	Engineering Economic Analysis
ME 3323	Mechanical Vibration
ME 4323	Thermal Systems Design
ME 4373	Separation Processes
ME 4593	Alternative Energy Sources
ME 4603	Finite Element Analysis
ME 4643	Pressure Vessel and Piping Design
ME 4653	Oil and Gas Engineering and Reservoir Geomechanics
ME 4683	Corrosion Engineering

Additional engineering elective courses

EGR 3303	Engineering Co-op ¹
EGR 4993	Honors Research ¹

ME 4173	High Performance Computing	
ME 4913	Independent Study ¹	
ME 4953	Special Studies in Mechanical Engineering ¹	
Graduate Courses in Mechanical Engineering ²		
C. 3 semester credit hours of approved mathematics or basic science elective courses, selected from the following list:		3
BIO 1233	Contemporary Biology I	
BIO 1243	Contemporary Biology II	
BIO 1404	Biosciences I	
BIO 2003	Biology of Human Reproduction	
CHE 1113	General Chemistry II	
CHE 2603	Organic Chemistry I	
ES 2013	Introduction to Environmental Science I	
GEO 1123	Life Through Time	
MAT 3013	Foundations of Mathematics	
MAT 3103	Data Analysis and Interpretation	
PHY 2103	Modern Physics	
PHY 3203	Classical Mechanics I	
STA 2303	Applied Probability and Statistics for Engineers	
STA 3003	Applied Statistics	
Total Credit Hours		64

¹ With prior approval, these courses may be used as a technical elective.

² Graduate courses require approval. Forms are available from your academic advisor.

B.S. in Mechanical Engineering – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103	General Chemistry I	3
MAT 1214	Calculus I (core and major)	4
ME 1403	Engineering Practice and Graphics	3
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		16

Spring

MAT 1224	Calculus II	4
PHY 1943	Physics for Scientists and Engineers I (core and major)	3
PHY 1951	Physics for Scientists and Engineers I Laboratory	1
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
American History core		3
Credit Hours		17

Second Year

Fall		
EGR 2103	Statics	3
EGR 2323	Applied Engineering Analysis I	3

PHY 1963	Physics for Scientists and Engineers II (core and major)	3
PHY 1971	Physics for Scientists and Engineers II Laboratory	1
EGR 1403	Technical Communication (or other core option)	3
Math/Science Elective		3
Credit Hours		16

Spring

EE 2213	Electric Circuits and Electronics	3
EGR 2513	Dynamics	3
EGR 3323	Applied Engineering Analysis II	3
ME 3241	Materials Engineering Laboratory	1
ME 3243	Materials Engineering	3
ME 3293	Thermodynamics I	3
Credit Hours		16

Third Year

Fall

ME 2173	Numerical Methods	3
ME 3113	Measurements and Instrumentation	3
ME 3663	Fluid Mechanics	3
ME 3813	Mechanics of Solids	3
ME 4293	Thermodynamics II	3
Language, Philosophy & Culture core		3
Credit Hours		18

Spring

ME 3263	Manufacturing Engineering	3
ME 3541	Dynamics and Controls Laboratory	1
ME 3543	Dynamic Systems and Control	3
ME 3823	Machine Element Design I	3
ME 4313	Heat Transfer	3
ME 4801	Manufacturing Practices Laboratory	1
Creative Arts core		3
Credit Hours		17

Fourth Year

Fall

ME 4312	Thermal and Fluids Laboratory	2
ME 4543	Mechatronics	3
ME 4812	Senior Design I	2
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
ME Technical elective		3
Credit Hours		13

Spring

ME 4813	Senior Design II	3
ME Technical elective		3
ME Technical elective		3
American History core		3
Social and Behavioral Sciences core		3
Credit Hours		15
Total Credit Hours		128

Certificate in Oil/Gas

The Certificate in Oil/Gas is designed to prepare mechanical engineering degree-seeking students and non-degree-seeking students with mechanical engineering background with the fundamental engineering knowledge necessary for successful careers in Oil/Gas Industry. It certifies to employers that students awarded the certificate have completed coursework essential to Oil/Gas industry.

Eligibility requirements:

- Meet the prerequisite courses for the certificate program (refer to course descriptions in the *UTSA Undergraduate Catalog*)

Students pursuing an Oil/Gas certificate must complete 15 semester credit hours as follows:

A. Required courses:	6
ME 3113 Measurements and Instrumentation ¹	
ME 3823 Machine Element Design I ¹	
B. ME Electives. Three courses (9 semester credit hours) selected from the following list:	9
EGR 3713 Engineering Economic Analysis	
ME 3323 Mechanical Vibration	
ME 4323 Thermal Systems Design	
ME 4373 Separation Processes	
ME 4593 Alternative Energy Sources	
ME 4603 Finite Element Analysis	
ME 4643 Pressure Vessel and Piping Design	
ME 4653 Oil and Gas Engineering and Reservoir Geomechanics	
ME 4683 Corrosion Engineering	
Total Credit Hours	15

¹ Those students who have transferred equivalent required and elective courses, as listed above, from other institutions may complete the certificate program by taking 15 semester credit hours of ME courses listed above.

To earn an Oil/Gas certificate, students must satisfy the following requirements:

1. Complete all the requirements of the certificate program.
2. Receive a grade of "C-" or better in each course used to satisfy the requirements of the 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 certificate program.

Undergraduates who are currently enrolled in the baccalaureate degree program in mechanical engineering or enrolled as non-degree-seeking students and who wish to earn an undergraduate Certificate in Oil/Gas are eligible to enroll in the certificate program, provided they satisfy the course prerequisite requirements.

Students not currently admitted to UTSA who wish to earn an undergraduate Certificate in Oil/Gas 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 desire to pursue the requirements for an undergraduate Oil/Gas certificate

program. Applicants will be required to meet University admission requirements for special students at the undergraduate level.

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 the undergraduate certificate programs, provided they meet the requirements for enrollment in the certificate program.

During the last semester in the Certificate program, students must submit an application for the Undergraduate Certificate to the Office of the Registrar.

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 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 22 major degree programs and 36 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.

- Minor in Film Studies (p. 146)
- Minor in Latin American Studies (p. 146)
- Minor in Museum Studies (p. 147)

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	3
ANT 4243	Ethnographic Film	3
CSH 2113	The Foreign Film	3
HIS 3803	World History in the Cinema	3
HUM 2053	History of Film	3
HUM 3103	American Film	3

HUM 3203	Film Genres	3
HUM 3303	Major Filmmaker	3
HUM 3403	Literature into Film	3
MES 3113	Film Studies	3
MES 3333	Digital Video Production	3
MES 4333	Digital Video Practicum	3
MUS 2743	Music and Film	3
POL 3743	Politics in Film	3
SOC 3423	Mass Media in Society	3

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	3
AMS 3343	Studies in Race and Ethnicity	3
AMS 4823	Topics in American Culture	3
ART 4033	Studio Art Problems	3
ENG 4613	Topics in Mexican American Literature	3
ENG 4953	Special Studies in English	3
ENG 4973	Seminar for English Majors	3
FRN 4213	Topics in French Culture and Linguistics	3
GER 4213	Topics in German Culture and Linguistics	3
HUM 3703	Topics in Popular Culture	3
HUM 4953	Special Studies in Humanities	3
HUM 4973	Senior Seminar in Humanities	3
RUS 3633	Topics in Russian Culture	3
SPN 4303	Topics in Hispanic Cultures	3

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 their advisor.

Minor in Latin American Studies

Latin America is one of the most dynamic regions of the world, encompassing Mexico, Central America, South America and the Caribbean. The Minor in Latin American Studies provides an interdisciplinary approach to understanding the political, cultural, historical, economical and societal processes and systems of this region. Considering its multidisciplinary nature, the minor draws on courses from different disciplines like History, Anthropology, Political Sciences, Modern Languages and Art History among many others.

All students pursuing a minor In Latin American Studies must complete 18 semester credit hours. In order to promote a multidisciplinary education, COLFA students must take at least 6 credit hours outside their major. Students are strongly encouraged to enroll in Spanish language courses in the Department of Modern Languages and Literatures, participate in an International Education program (or study abroad) in Latin America, and take advantage of a variety of internship opportunities.

Course Options

Students must choose 18 semester credit hours from the following courses. Students must take 6 of these credit hours outside of their major.

In addition to the courses outlined below, study abroad programs and courses taken as a part of an international education program in Latin America also qualify for the minor.

Anthropology

ANT 3273	Civilizations of Mexico	3
ANT 3303	Nature and Culture in Greater Amazonia	3
ANT 3253	Archaeology of South America	3
ANT 3303	Nature and Culture in Greater Amazonia	3
ANT 3363	Indians of Mesoamerica	3
ANT 3403	Field Course in Archaeology (when topic includes Latin American content)	3
ANT 3723	Ancient Civilizations	3

Art/Art History

AHC 3423	Arts of Ancient Mesoamerica	3
AHC 3523	Latin American Art	3
AHC 4333	Topics in Art History and Criticism (topics with Latin American content are offered every semester)	3

Geography/Global Affairs/Political Science

GES 3123	Geography of Latin America	3
GES 3143	Geography of Mexico	3
GLA 3393	Latin American Politics	3
or POL 3393	Latin American Politics	
GLA 3453	Politics of Mexico	3
or POL 3453	Politics of Mexico	
GLA 3473	Latin America in the World	3
or POL 3473	Latin America in the World	
GLA 3593	Topics in Latin American Security	3
or POL 3593	Topics in Latin American Security	

History

HIS 2533	Introduction to Latin American Civilization	3
HIS 3033	The Spanish and Mexican Borderlands	3
HIS 3123	Colonial Texas under Spanish and Mexican Rule to 1836	3
HIS 3293	Imperial Spain	3
HIS 3303	History of Mexico	3
HIS 3313	History of U.S. Relations with Latin America	3
HIS 3353	Latin America since Independence	3
HIS 3363	History of Cuba	3
HIS 3373	Revolution in Latin America	3
HIS 3393	Women in Mexican History	3
HIS 3403	Pre-Hispanic and Colonial Latin America	3
HIS 3803	World History in the Cinema (when topic includes Latin American content)	3
HIS 3983	Women and Gender in Latin America	3

Modern Languages and Literatures (Spanish)

SPN 3423	The Literature of Spain from 1700 to the Present	3
SPN 3463	Latin American Literature to Modernism	3

SPN 3473	Latin American Literature since Modernism	3
SPN 3623	Latin American Culture and Civilization	3
SPN 4203	Topics in Hispanic Literatures	3
SPN 4303	Topics in Hispanic Cultures	3

Music

MUS 2243	World Music in Society (emphasis in Latin American music)	3
MUS 2693	The Music of Latin America and the Caribbean	3

Sociology

SOC 3433	Mexican Immigration and U.S. Society	3
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Spanish

SPN 1014	Elementary Spanish I	4
SPN 1024	Elementary Spanish II	4
SPN 2013	Intermediate Spanish I	3
SPN 2023	Intermediate Spanish II	3

Courses outside COLFA

Classes from other colleges that have Latin American content may be substituted for any of the elective courses outline above up to a maximum of 9 semester credit hours.

To declare a Minor in Latin American Studies, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Minor in Museum Studies

The Minor in Museum Studies will provide students, through theoretical and practical training in the display and interpretation of exhibited objects, opportunities to develop an interdisciplinary relationship with the arts, material culture, cultural production, cultural history, and natural history. This minor also provides undergraduates with the opportunity to undertake systematic coursework that emphasizes both conceptual and applied approaches in the museum field, coupled with work in language and writing skills.

All students pursuing a Minor in Museum Studies must complete 18 semester credit hours:

Required Courses:

MSM 3003	Fundamentals of Museum Studies	3
MSM 4933	Museum Internship	3

Students will choose 12 additional semester credit hours from the following courses:

Elective Courses:

AHC 3113	Contemporary Art	3
AHC 4333	Topics in Art History and Criticism (Histories of Display)	3
ANT 3383	Folklore and Folklife	3
ANT 3413	The Ethnographic Experience	3
ANT 3543	Museum Studies in Anthropology	3
ANT 3713	Anthropology of Material Culture	3
ANT 3803	Media, Power, and Public Culture	3
ANT 4243	Ethnographic Film	3
ART 4973	B.A. Senior Seminar	3
ART 4833	Internship in the Visual Arts	3
ART 4983	B.F.A. Senior Seminar and Exhibition	3

CLA 3063	Topics in the Art and Architecture of the Classical World	3
CLA 3123	Cultural Issues in Classical Antiquity	3
ENG 4433	Advanced Professional Writing	3
HIS 3493	History of San Antonio	3
HIS 4133	History and the Public	3
MES 3333	Digital Video Production	3
MES 4333	Digital Video Practicum	3
MSM 4813	Topics in Museum Science	3
MSM 4913	Independent Study in Museum Studies	3
MUS 2273	Introduction to Music and Art Nonprofit Organizations	3
MUS 3103	Audio Technology I	3
MUS 3163	Audio Technology II	3
SOC 4433	Culture and Society	3
SOC 4853	Topics in Sociology (Multimedia Applications in Sociology)	3

Department of Anthropology

The Department of Anthropology offers a Bachelor of Arts (B.A.) degree in Anthropology and minors in Anthropology, Archaeological Practice, and American Indian Studies. Department 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 usually enroll in the appropriate honors thesis courses during their final two semesters, although other arrangements are possible with the approval of the faculty advisor. 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, study abroad, research opportunities, and service learning as part of their undergraduate program of study. Internships are arranged through the Undergraduate Advisor of Record 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. Faculty-led and other study abroad opportunities are organized by the Education Abroad Services office. 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 B.A. 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.

ANT 2033 may be used to help satisfy the Life and Physical Sciences component requirement. ANT 2043 or ANT 2053 will satisfy the Social and Behavioral Sciences component requirement. ANT 2063 may be used to satisfy the Language, Philosophy, and Culture component requirement. ANT 1013 is an elective course for the major in anthropology; it also will satisfy the Component Area Option of the Core Curriculum.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. 39 semester credit hours in the major, 24 of which must be at the upper-division level

1. Required courses:

ANT 2033	Introduction to Biological Anthropology	3
ANT 2043	Introduction to Archaeology	3
ANT 2053	Introduction to Cultural Anthropology	3
ANT 2063	Language, Thought, and Culture	3

2. Upper-division semester credit hours distributed across these sub-disciplines:

Archaeology	3
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Cultural Anthropology	3
Biological Anthropology	3
3. Additional semester credit hours of anthropology electives chosen in consultation with the student's advisor, at least 15 semester credit hours of which must be upper division.	18
B. Electives	
39 semester credit hours of electives. In fulfillment of this requirement, students are encouraged to take at least 9 semester credit hours of upper-division coursework in disciplines that support the study of anthropology.	39
Total Credit Hours	78

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 their academic advisor for individualized degree plans.* Progress toward the degree 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
ANT 2043	Introduction to Archaeology (core and major)	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
WRC 1013	Freshman Composition I (Q) (core)	3
Life and Physical Sciences core		3
	Credit Hours	15

Spring

ANT 2033	Introduction to Biological Anthropology (core and major)	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
WRC 1023	Freshman Composition II (Q) (core)	3
Creative Arts core		3
Mathematics core		3
	Credit Hours	15

Second Year

Fall		
ANT 2053	Introduction to Cultural Anthropology	3

POL 1013	Introduction to American Politics (core)	3
Free elective		3
Component Area Option core		3
Upper-division Archaeology course		3
	Credit Hours	15

Spring

ANT 2063	Language, Thought, and Culture (core and major)	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Free elective		3
Free elective		3
Upper-division Cultural Anthropology course		3
	Credit Hours	15

Third Year

Fall

Free elective		3
Upper-division ANT elective		3
Upper-division Biological Anthropology course		3
Upper-division free elective		3
Upper-division support work		3
	Credit Hours	15

Spring

Upper-division ANT elective		3
Upper-division ANT elective		3
Free elective		3
Free elective		3
Upper-division support work		3
	Credit Hours	15

Fourth Year

Fall

Free elective		3
Free elective		3
Upper-division ANT elective		3
Upper-division ANT elective		3
Upper-division support work		3
	Credit Hours	15

Spring

Free elective		3
Free elective		3
Upper-division ANT elective		3
Free elective (to meet 120 hour minimum)		3
Free elective (to meet 120 hour minimum)		3
	Credit Hours	15
	Total Credit Hours	120

- Minor in Anthropology (p. 150)
- Minor in American Indian Studies (p. 150)
- Minor in Archaeological Practice (p. 150)

Minor in Anthropology

All students pursuing a Minor in Anthropology must complete 18 semester credit hours.

A. Select three of the following courses:	9
ANT 2033 Introduction to Biological 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 distributed across these sub-disciplines:	
Archaeology upper-division course	3
Cultural Anthropology upper-division course	3
Biological Anthropology upper-division course	3
Total Credit Hours	18

To declare a Minor in Anthropology, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Minor in American Indian Studies

All students pursuing a Minor in American Indian Studies must complete 18 semester credit hours, 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 Mesoamerica	3
ANT 3153 Indians of the Great Plains	3
ANT 3203 Native North Americans	3
ANT 3253 Archaeology of South America	3
ANT 3263 Archaeology of North America	3
ANT 3273 Civilizations of Mexico	3
ANT 3303 Nature and Culture in Greater Amazonia	3
ANT 3363 Indians of Mesoamerica	3
ANT 3833 Indians of Texas	3
ANT 4113 Archaeology of Texas	3
ANT 4123 Archaeology of the American Southwest	3
HIS 3083 History of the American West	3
HIS 3113 North American Indian Histories	3
HIS 3403 Pre-Hispanic and Colonial Latin America	3

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 their academic advisor.

Minor in Archaeological Practice

The Minor in Archaeological Practice provides focused training in archaeology, particularly the methods and skills needed to carry out archaeological fieldwork.

All students pursuing a Minor in Archaeological Practice must complete 18 semester credit hours, distributed as below. Courses must be distributed across at least two departments.

A. Required introductory course:	3
ANT 2043 Introduction to Archaeology	

B. Required methods-intensive, hands-on learning experience. Select 3 one course from the following:

ANT 3403 Field Course in Archaeology	
ANT 3406 Field Course in Archaeology	
ANT 4913 Independent Study (if it involves working directly with archaeological materials)	
ANT 4933 Internship in Anthropology (if it involves working directly with archaeological materials)	
CLA 4913 Independent Study (if it involves working directly with archaeological materials)	

C. Elective courses with an archaeology focus. Select four courses 12 from the following:

ANT 3023 Great Discoveries in Archaeology	
ANT 3233 Frauds, Myths, and Mysteries	
ANT 3253 Archaeology of South America	
ANT 3263 Archaeology of North America	
ANT 3273 Civilizations of Mexico	
ANT 3293 Research Methods in Archaeology	
ANT 3453 Public Archaeology	
ANT 3663 Hunters and Gatherers - Past and Present	
ANT 3713 Anthropology of Material Culture	
ANT 3723 Ancient Civilizations	
ANT 3883 Death and Dying (when content is focused on archaeology)	
ANT 4013 Maya Civilization	
ANT 4113 Archaeology of Texas	
ANT 4123 Archaeology of the American Southwest	
CLA 3063 Topics in the Art and Architecture of the Classical World (when content is focused on archaeology)	
CLA 4953 Special Studies in Classics (when content is focused on archaeology)	
CLA 4973 Senior Seminar in Classics (when content is focused on archaeology)	

Total Credit Hours 18

To declare a Minor in Archaeological Practice, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor. Archaeological field schools administered by other universities may be used to fulfill the methods requirement in Section B, but students should obtain pre-approval from the department before signing up for outside field schools.

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 Internship in the Visual Arts, ART 4973 B.A. Senior Seminar, ART 4983 B.F.A. Senior Seminar and Exhibition, and AHC 4933 Art Gallery and Museum Internship. UTSA is an accredited institutional member of the National Association of Schools of Art and Design.

- B.A. degree in Art (p. 151)
- B.F.A. degree in Art (p. 153)
- B.A. degree in Art History and Criticism (p. 155)

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 (39) 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 that 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.

Students must complete all lower-division course requirements for this degree prior to enrolling in more than fifteen (15) hours of upper-division coursework.

Transfer students who wish to receive credit for upper-division studio art courses taken at another institution must present a portfolio of work to the department before the registration period. This portfolio should consist of four to six original examples or a digital portfolio of artworks on a CD/DVD completed for each upper-division course taken at another institution for which the student wishes to receive credit.

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 B.A. 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.

AHC 1113, AHC 1123, or AHC 1133 may be used to satisfy the core requirement in Creative Arts as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.A. degree in Art must successfully complete each of the following Gateway Courses with a grade of "C-" or better

in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

ART 1003	Two Dimensional Foundations ¹
ART 1013	Three Dimensional Foundations ¹
ART 1023	Digital Arts Foundations ¹
ART 1213	Drawing I ¹

Major Requirements

A. Required lower-division art and art history and criticism foundation courses:

AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350 ¹	3
AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750 ¹	3
AHC 1133	Survey of Modern Art ¹	3
ART 1003	Two Dimensional Foundations ¹	3
ART 1013	Three Dimensional Foundations ¹	3
ART 1023	Digital Arts Foundations ¹	3
ART 1213	Drawing I ¹	3

B. Basic courses:

Select three of the following:		9
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. Upper-division art course electives:

All B.A. Studio Art degree-seeking students must complete ALL lower-division ART and AHC courses required for the degree before enrolling in more than 15 hours of upper-division ART and AHC coursework.

Select 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. 12

D. Upper-division art history and criticism course electives:

Select 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. 6

E. Required upper-division courses:

ART 3033	Contemporary Studio: Concepts and Practice	3
ART 4973	B.A. Senior Seminar (to be taken in student's final semester prior to graduation)	3

F. Free Electives:

Select 27 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 Interdisciplinary Education Advising and Certification Center.

Total Credit Hours 81

¹ A grade of "C-" or better must be earned in these courses to satisfy the prerequisites for subsequent courses in the Art major.

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 their academic advisor 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.

Note: Students desiring to transfer into the Bachelor of Fine Arts (B.F.A.) in Art degree program should follow the B.F.A. Four-Year Academic Plan listed after the B.F.A. Degree Requirements.

B.A. in Art – Four-Year Academic Plan

For students not planning on transferring into the Bachelor of Fine Arts in Art degree program.

First Year

Fall		Credit Hours
AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350 (core and major) ¹	3
AIS 1203	Academic Inquiry and Scholarship (core)	3
ART 1003	Two Dimensional Foundations ¹	3
ART 1213	Drawing I ¹	3
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15
Spring		
AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750 ¹	3
ART 1013	Three Dimensional Foundations ¹	3
ART 1023	Digital Arts Foundations ¹	3
WRC 1023	Freshman Composition II (Q) (core)	3
Mathematics core		3
Credit Hours		15

Second Year

Fall		Credit Hours
AHC 1133	Survey of Modern Art ¹	3
POL 1013	Introduction to American Politics (core)	3
Foreign Language (semester I)		3-4
Lower-division Studio ART Basic (choose one 2000-level studio course)		3
Life & Physical Sciences core		3
Credit Hours		15-16
Spring		
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Social and Behavioral Sciences core		3
Foreign Language (semester II)		3-4
Lower-division Studio ART Basic (choose one 2000-level studio course)		3
Life & Physical Sciences core		3
Credit Hours		15-16

Third Year

Fall		Credit Hours
ART 3033	Contemporary Studio: Concepts and Practice	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
Lower-division Studio ART Basic (choose one 2000-level studio course)		3
Upper-division AHC elective (choose one 3000- or 4000-level course)		3
Component Area Option core		3
Credit Hours		15
Spring		
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
Upper-division AHC elective		3
Upper-division free elective		3
Upper-division free elective		3
Upper-division Studio ART elective (choose one 3000- or 4000-level course)		3
Credit Hours		15

Fourth Year

Fall		Credit Hours
Language, Philosophy & Culture core		3
Upper-division free elective		3
Upper-division Studio ART elective (choose one 3000- or 4000-level course)		3
Upper-division Studio ART elective (choose one 3000- or 4000-level course)		3

Free elective (to meet 120 hour minimum)	1-3
Credit Hours	15-13
Spring	
ART 4973 B.A. Senior Seminar	3
Upper-division free elective (choose one 3000- or 4000-level course)	3
Upper-division free elective (choose one 3000- or 4000-level course)	3
Upper-division free elective (choose one 3000- or 4000-level course)	3
Upper-division Studio ART elective (choose one 3000- or 4000-level course)	3
Credit Hours	15
Total Credit Hours	120

¹ 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 concentrations: ceramics, drawing, new media, painting, photography, printmaking, or sculpture. The University is an accredited institutional member of the National Association of Schools of Art and Design.

The B.F.A. degree in Art is awarded upon the completion of 120 hours, of which 42 hours are Core Curriculum requirements. Thirty-nine (39) of the total semester credit hours required for the degree must be at the upper-division level.

Students must complete all lower-division course requirements for this degree prior to enrolling in more than fifteen (15) hours of upper-division coursework.

Transfer students who wish to receive credit for upper-division studio art courses taken at another institution must present a portfolio of work to the department before the registration period. This portfolio should consist of four to six original examples or a digital portfolio of artworks on a CD/DVD completed for each upper-division course taken at another institution for which the student wishes to receive credit.

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 Interdisciplinary Education 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).

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 B.F.A. 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.

AHC 1113, AHC 1123, or AHC 1133 may be used to satisfy the core requirement in Creative Arts as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the Bachelor of Fine Arts degree in Art must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

ART 1003	Two Dimensional Foundations ¹
ART 1013	Three Dimensional Foundations ¹
ART 1023	Digital Arts Foundations ¹
ART 1213	Drawing I ¹

Major Requirements

A. 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 ¹	3
AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750 ¹	3
AHC 1133	Survey of Modern Art ¹	3
ART 1003	Two Dimensional Foundations ¹	3
ART 1013	Three Dimensional Foundations ¹	3
ART 1023	Digital Arts Foundations ¹	3
ART 1213	Drawing I ¹	3
ART 2113	Painting: Basic	3

ART 2223	New Media: Basic	3
ART 2313	Photography: Basic	3
ART 2413	Printmaking: Basic	3
ART 2613	Sculpture: Basic	3
ART 2713	Ceramics: Basic	3

B. Upper-division art courses including:

All B.F.A. degree-seeking students must complete ALL lower-division ART and AHC courses required for the degree before enrolling in more than 15 hours of upper-division ART and AHC coursework.

ART 3033	Contemporary Studio: Concepts and Practice	3
ART 4983	B.F.A. Senior Seminar and Exhibition	3

C. Upper-division art courses in one selected area of studio specialization:

Complete 15 hours (5 courses) of upper-division coursework from one of the following specialized areas of study: ceramics, drawing, new media, painting, photography, printmaking, or sculpture. 15

D. Upper-division art history and criticism courses:

AHC 3113	Contemporary Art	3
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Select 6 semester credit 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. 6

E. Art course electives:

Select 12 additional semester credit hours of ART coursework. Nine (9) credit hours of the 12 must be upper-division while 3 credit hours may be lower-division. The ART course prefix must precede course numbers for all classes used to fulfill these degree requirements. 12

Note: ART 1223 Drawing II is a required course for B.F.A. majors specializing in drawing, painting, and sculpture and thus will take the place of the 3-hour lower-division art elective.

Total Credit Hours	81
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¹ A grade of "C-" or better must be earned in these courses to satisfy the prerequisites for subsequent courses in the Art major.

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 their academic advisor 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

First Year

Fall		Credit Hours
AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350 (core and major) ¹	3
AIS 1203	Academic Inquiry and Scholarship (core)	3
ART 1003	Two Dimensional Foundations ¹	3
ART 1213	Drawing I ¹	3
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15

Spring

AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750 ¹	3
ART 1013	Three Dimensional Foundations ¹	3
ART 1023	Digital Arts Foundations ¹	3
WRC 1023	Freshman Composition II (Q) (core)	3
Mathematics core		3
Credit Hours		15

Second Year

Fall

AHC 1133	Survey of Modern Art ¹	3
ART 2113	Painting: Basic (or other basic studio course not previously completed: printmaking, photography, new media, ceramics, or sculpture)	3
ART 2413	Printmaking: Basic (or other basic studio course not previously completed: painting, photography, new media, ceramics, or sculpture)	3
Life & Physical Sciences core		3
Social and Behavioral Sciences core		3
Credit Hours		15

Spring

ART 2223	New Media: Basic (or other basic studio course not previously completed: printmaking, photography, painting, ceramics, or sculpture)	3
ART 2313	Photography: Basic (or other basic studio course not previously completed: printmaking, painting, new media, ceramics, or sculpture)	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
Life & Physical Sciences core		3
Upper-division ART specialization (choose one 3000- or 4000-level course)		3
Credit Hours		15

Third Year**Fall**

AHC 3113	Contemporary Art	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
POL 1013	Introduction to American Politics (Please see core course selection table))	3
ART 2613	Sculpture: Basic (or other basic studio course not previously completed: printmaking, photography, new media, ceramics, or painting)	3
Upper-division ART specialization (choose one 3000- or 4000-level course)		3
	Credit Hours	15

Spring

POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Language, Philosophy & Culture core		3
ART 2713	Ceramics: Basic (or other basic studio course not previously completed: printmaking, photography, new media, painting, or sculpture)	3
Component Area Option core		3
Upper-division ART specialization (choose one 3000- or 4000-level course)		3
	Credit Hours	15

Fourth Year**Fall**

ART 3033	Contemporary Studio: Concepts and Practice	3
Upper-division ART elective (choose one 3000- or 4000-level course)		3
Upper-division AHC elective (choose one 3000- or 4000-level course)		3
Upper-division ART elective (choose one 3000- or 4000-level course)		3
Upper-division ART specialization (choose one 3000- or 4000-level course)		3
	Credit Hours	15

Spring

ART 4983	B.F.A. Senior Seminar and Exhibition	3
Upper-division ART Elective (choose one 3000- or 4000-level course)		3
Upper-division ART Elective (choose one 3000- or 4000-level course)		3
Upper-division ART specialization (choose one 3000- or 4000-level course)		3

Upper-division AHC elective (choose one 3000- or 4000-level course) 3

Credit Hours	15
Total Credit Hours	120

¹ Must be completed with a grade of "C-" or better.

Bachelor of Arts Degree in Art History and Criticism

The Bachelor of Arts (B.A.) degree in Art History and Criticism is awarded upon the completion of 120 hours, of which 42 hours are Core Curriculum requirements. Thirty-nine (39) of the total semester credit hours required for the degree must be at the upper-division level.

The B.A. degree 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.

Students must complete all lower-division course requirements for this degree prior to enrolling in more than fifteen (15) hours of upper-division coursework.

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 B.A. 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.

AHC 1113, AHC 1123, or AHC 1133 may be used to satisfy the core requirement in Creative Arts as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.A. degree in Art History and Criticism must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who

is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

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

Major Requirements

A. Lower-division art history and criticism foundation courses:

AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350 ¹	3
AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750 ¹	3
AHC 1133	Survey of Modern Art ¹	3

B. Upper-division art history and criticism required courses:

AHC 3113	Contemporary Art	3
AHC 3423	Arts of Ancient Mesoamerica	3
AHC 3523	Latin American Art	3
AHC 4333	Topics in Art History and Criticism (may be repeated for credit when topics vary)	3
AHC 4933	Art Gallery and Museum Internship	3

C. Lower-division art courses:

ART 1003	Two Dimensional Foundations ¹	3
ART 1013	Three Dimensional Foundations ¹	3
ART 1023	Digital Arts Foundations ¹	3

D. Upper-division art history course option:

Select one (1) upper-division course in Art History and Criticism (AHC)	3
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E. Upper-division art course:

ART 4973	B.A. Senior Seminar	3
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F. Additional coursework options:

Select 6 additional semester credit hours in coursework to be chosen from offerings within the College of Liberal and Fine Arts, which may include art history (AHC), art (ART), 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.

G. Electives:

Select 33 semester credit hours of electives, at least 18 of which must be upper-division, and including as many semesters of a single language other than English are necessary for the completion of the fourth UTSA semester course of that language.

Total Credit Hours 78

¹ 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.

Note: For the B.A. degree in Art History and Criticism, the major grade point average is calculated using ART and AHC courses.

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 their academic advisor 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

First Year

Fall		Credit Hours
AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350 (core and major) ¹	3
AIS 1203	Academic Inquiry and Scholarship (core)	3
ART 1003	Two Dimensional Foundations ¹	3
ART 1023	Digital Arts Foundations ¹	3
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15

Spring

AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750 ¹	3
ART 1013	Three Dimensional Foundations ¹	3
WRC 1023	Freshman Composition II (Q) (core)	3
Language (semester I)		3-4
Mathematics core		3
Credit Hours		15-16

Second Year

Fall		Credit Hours
AHC 1133	Survey of Modern Art ¹	3
Language (semester II)		3-4
Language, Philosophy & Culture core		3
Life & Physical Sciences core		3
Upper-division elective		3
Credit Hours		15-16

Spring

POL 1013	Introduction to American Politics (core)	3
Language (semester III)		3
Social and Behavioral Sciences core		3
Life & Physical Sciences core		3
Upper-division AHC (choose one 3000- or 4000-level course)		3
Credit Hours		15

Third Year**Fall**

POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Language (semester IV)		3
Upper-division elective		3
Upper-division AHC (choose one 3000- or 4000-level course)		3
Component Area Option core		3
Credit Hours		15

Spring

HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre- Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
Upper-division elective		3
Upper-division AHC (choose one 3000- or 4000-level course)		3
Upper-division free elective		3
Upper-division free elective		3
Credit Hours		15

Fourth Year**Fall**

HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre- Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
Upper-division AHC (choose one 3000- or 4000-level course)		3
Upper-division AHC (choose one 3000- or 4000-level course)		3
Upper-division elective		3
Upper-division elective		3
Credit Hours		15

Spring

Free elective (to meet 120 hour minimum)		1-3
Upper-division AHC (choose one 3000- or 4000-level course)		3
Upper-division free elective		3
Upper-division free elective		3
ART 4973	B.A. Senior Seminar	3
Credit Hours		15-13
Total Credit Hours		120

¹ 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. Minor requirements:

Select two of the following:	6
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. Additional courses:

Select four of the following:	12
AHC 3113	Contemporary Art
AHC 3423	Arts of Ancient Mesoamerica
AHC 3523	Latin American Art
AHC 4333	Topics in Art History and Criticism
AHC 4933	Art Gallery and Museum Internship
MSM 3003	Fundamentals of Museum Studies

Total Credit Hours	18
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Department of Communication

The Department of Communication offers a Bachelor of Arts (B.A.) degree and a minor in Communication. Honors may also be earned in Communication. If a student majors in Communication, he or she also may choose to concentrate his or her coursework in either Public Relations, Digital Communication, or Health Communication.

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.

- B.A. degree in Communication (p. 157)
- B.A. in Communication with a Public Relations Concentration (p. 159)
- B.A. in Communication with a Digital Communication Concentration (p. 159)
- B.A. in Communication with a Health Communication Concentration (p. 160)

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 Public Relations

Planning and Campaigns, COM 4723 Digital Media Production II, COM 4813 Theory and Practice of Social Interaction, COM 4893 Health Communication Practicum or COM 4933 Internship in Communication.

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 B.A. 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.

COM 2113 may be used to satisfy a core requirement in the Component Area Option as well as a major requirement.

Note: If a language is used to satisfy the three-hour Language, Philosophy and Culture core requirement, students will need to take an additional three hours in the same language for the degree requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.A. degree in Communication must successfully complete each of the following Gateway Courses with a grade of “C-” or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

COM 3023	Foundations of Communication
COM 3073	Conduct of Communication Inquiry
COM 3083	Language and Communication Theory

Degree Requirements

A. Communication Gateway Courses

COM 3023	Foundations of Communication	3
COM 3073	Conduct of Communication Inquiry	3
COM 3083	Language and Communication Theory	3

B. Communication Core

COM 2113	Public Speaking	3
COM 3553	Intercultural Communication	3
or COM 3563	International Communication	

ENG 2413	Technical Writing	3
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C. Single foreign language

Select 6 semester credit hours in a single foreign language	6
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Total Credit Hours	24
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B.A. in Communication (no concentration)

All candidates seeking this degree must fulfill the Core Curriculum requirements, the degree requirements, and the following:

A. Additional Communication courses

Select 21 additional semester credit hours in Communication, at least 15 at the upper-division level	21
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B. Capstone course

COM 4813	Theory and Practice of Social Interaction	3
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C. Electives

30 semester credit hours of free electives. In fulfillment of this requirement, majors are encouraged to take coursework in disciplines that support the study of Communication. At least 9 of these elective credit hours must be at the upper-division level.	30
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Total Credit Hours	54
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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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
WRC 1013	Freshman Composition I (Q) (core)	3
Foreign Language (semester I) (core)		3-4
Mathematics core		3
Credit Hours		15-16

Spring

COM 2113	Public Speaking (core and major)	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
WRC 1023	Freshman Composition II (Q) (core)	3

Foreign Language (semester II)	3-4
Life & Physical Sciences core	3
Credit Hours	15-16

Second Year

Fall

COM 3023	Foundations of Communication ¹	3
COM 3083	Language and Communication Theory ¹	3
ENG 2413	Technical Writing	3
POL 1013	Introduction to American Politics (core)	3
Life & Physical Sciences core		3
Credit Hours		15

Spring

COM 3073	Conduct of Communication Inquiry ¹	3
COM 3553 or COM 3563	Intercultural Communication or International Communication	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Free elective		3
Social and Behavioral Sciences core		3
Credit Hours		15

Third Year

Fall

Creative Arts core (or free elective)		3
Free elective		3
Free elective		3
COM elective		3
Upper-division COM elective		3
Credit Hours		15

Spring

Free elective (or Creative Arts core)		3
Free elective		3
Free elective		3
Upper-division COM elective		3
Upper-division COM elective		3
Credit Hours		15

Fourth Year

Fall

Free elective		3
Free elective		3
Free elective		3
COM elective		3
Upper-division COM elective		3
Credit Hours		15

Spring

COM 4813	Theory and Practice of Social Interaction	3
Free elective		3
Free elective		3
Free elective (to meet 120 hour minimum)		1-3

Upper-division COM elective	3
Credit Hours	15-13
Total Credit Hours	120

¹ 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. Public Relations Concentration courses

COM 3523	Public Relations	3
COM 3533	Writing for Public Relations	3
COM 3623	Commercial Publications	3
COM 4523	Case Studies in Public Relations	3
COM 4533	Public Relations Planning and Campaigns	3

B. Additional Communication courses

Select 9 additional semester credit hours in Communication, at least one course at the upper-division level 9

C. Electives

30 semester credit hours of free electives. In fulfillment of this requirement, majors are encouraged to take coursework in disciplines that support the study of Communication. At least 9 of these elective credit hours must be at the upper-division level. 30

Total Credit Hours 54

B.A. in Communication with a Digital Communication Concentration

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements listed above. Additionally, students seeking a Digital Communication Concentration must complete COM 2433, COM 2733, COM 3623, COM 3723, and COM 4723 with a grade of "C-" or better in each course.

A. Digital Communication Concentration courses

COM 2433	Editing	3
COM 2733	Introduction to Digital Communication	3
COM 3623	Commercial Publications	3
COM 3723	Digital Media Production I	3
COM 4723	Digital Media Production II	3

B. Additional Communication courses

Select 9 additional semester credit hours in Communication at the upper-division level. 9

C. Electives

30 semester credit hours of free electives. In fulfillment of this requirement, majors are encouraged to take coursework in disciplines that support the study of Communication. At least 9 of these elective credit hours must be at the upper-division level. 30

Total Credit Hours 54

B.A. in Communication with a Health Communication Concentration

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements listed above. Additionally, students seeking a Health Communication Concentration must complete COM 3293, COM 3493, COM 3593, COM 3693, and COM 4893 with a grade of "C-" or better in each course.

A. Health Communication Concentration courses

COM 3293	Introduction to Health Communication	3
COM 3493	Global Health Communication	3
COM 3593	Health Communication Campaigns	3
COM 3693	Interpersonal Health Communication	3
COM 4893	Health Communication Practicum	3

B. Additional Communication courses

Select 9 additional semester credit hours in Communication, at least one course at the upper-division level

C. Electives

30 semester credit hours of free electives. In fulfillment of this requirement, majors are encouraged to take coursework in disciplines that support the study of Communication. At least 9 of these elective credit hours must be at the upper-division level.

Total Credit Hours 54

Course Sequence Guide for B.A. Degree in Communication with a Public Relations, Digital Communication or Health 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 their academic advisor 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

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
WRC 1013	Freshman Composition I (Q) (core)	3
Foreign Language (semester I) (core)		3-4
Mathematics core		3
Credit Hours		15-16
Spring		
COM 2113	Public Speaking (core and major)	3

HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
WRC 1023	Freshman Composition II (Q) (core)	3
Foreign Language (semester II)		3-4
Life & Physical Sciences core		3
Credit Hours		15-16

Second Year

Fall

COM 3023	Foundations of Communication ¹	3
COM 3083	Language and Communication Theory ¹	3
ENG 2413	Technical Writing	3
POL 1013	Introduction to American Politics (core)	3
Life & Physical Sciences core		3
Credit Hours		15

Spring

COM 3073	Conduct of Communication Inquiry ¹	3
COM 3553 or COM 3563	Intercultural Communication or International Communication	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Social and Behavioral Sciences core		3
Free elective		3
Credit Hours		15

Third Year

Fall

Creative Arts core (or free elective)		3
Free elective		3
Free elective		3
Select one of the following:		
COM 2433	Editing ³	
Upper-division COM elective ^{2,4}		
Select one of the following:		
COM 2733	Introduction to Digital Communication ^{1,3}	
COM 3293	Introduction to Health Communication ^{1,4}	
COM 3523	Public Relations ^{1,2}	
Credit Hours		15

Spring

Free elective (or Creative Arts core)		3
Free elective		3
Free elective		3
Select one of the following:		
COM 3623	Commercial Publications ^{1,2,3}	
COM 3493	Global Health Communication ^{1,4}	
Select one of the following:		
COM 3533	Writing for Public Relations ^{1,2}	

COM 3593	Health Communication Campaigns 1,4	
Upper-division COM elective ³		
Credit Hours		15
Fourth Year		
Fall		
Free elective		3
Free elective		3
Free elective		3
COM elective		3
Select one of the following:		
COM 3693	Interpersonal Health Communication ^{1,4}	
COM 3723	Digital Media Production I ^{1,3}	
COM 4523	Case Studies in Public Relations ^{1,2}	
Credit Hours		15
Spring		
Free elective		3
Free elective		3
Free elective (to meet 120 hour minimum)		1-3
Upper-division COM elective		3
Select one of the following:		
COM 4533	Public Relations Planning and Campaigns ^{1,2}	
COM 4723	Digital Media Production II ^{1,3}	
COM 4893	Health Communication Practicum 1,4	
Credit Hours		15-13
Total Credit Hours		120

¹ Must be completed with a grade of "C-" or better.

² Public Relations concentration only.

³ Digital Communication concentration only.

⁴ Health 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, at least 3 hours of which must be in COM 2113 Public Speaking.

COM 2113 may be used to satisfy a core requirement in the Component Area Option as well as a minor requirement.

To declare a Minor in Communication, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Department of English

The department offers a Bachelor of Arts (B.A.) degree in English with concentrations in professional writing, creative writing, and English language arts and reading as well as minors in English Literature and Professional Writing, and a certificate in Professional Writing and Rhetoric. Honors can also be earned in English.

Honors in English

The English Department offers its outstanding students the opportunity to pursue Department Honors through advanced study and close faculty mentorship in major courses. To earn Honors, a student must:

1. Maintain a 3.5 grade point average in both major work and support work as well as a 3.25 overall grade point average. Grade point average requirements apply to both transfer and courses taken at UTSA.
2. Take and successfully complete three Honors-designated English classes with a grade of "B" or better. Any upper-division English class may be designated as Honors pending student petition and approval of the individual instructor. Honors designations involve additional coursework and faculty mentoring.
3. Before graduating, submit for approval from the Departmental 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, at least two of which must be written for Honors-designated English courses, may be revised and edited for submission. The critical statement should assess the papers' contribution to the student's goals as an English major seeking Honors. The critical statement and the substantial papers will be evaluated in terms of research, analysis, eloquence, and command of subject.

Students interested in pursuing Honors may contact the English Department for further information.

- B.A. degree in English (p. 161)
- B.A. degree in English with a Professional Writing Concentration (p. 164)
- B.A. degree in English with a Creative Writing Concentration (p. 165)
- B.A. degree in English with an English Language Arts and Reading Concentration (p. 166)

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 Interdisciplinary Education Advising and Certification Center for information.

All candidates seeking this degree must complete ENG 2213 Literary Criticism and Analysis and ENG 4973 Seminar for English Majors 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 B.A. degree in English must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below will 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.

ENG 2213 may be used to satisfy the core requirement in Language, Philosophy, and Culture as well as a major requirement. ENG 2413 may be used to satisfy the core requirement in Component Area Option as well as a major requirement for a B.A. in English with a Concentration in Professional Writing or for a minor in Professional Writing.

Note: Students seeking the B.A. degree in English with a Concentration in Creative Writing are encouraged to complete the Creative Arts core requirement with ENG 1113.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Course

Students pursuing the B.A. degree in English must successfully complete the following Gateway Course with a grade of “C-” or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

ENG 2213 Literary Criticism and Analysis

Degree Requirements

A. English major courses

1. Required courses in English:		
ENG 2213	Literary Criticism and Analysis	3
ENG 2223	British Literature I	3
ENG 2233	British Literature II	3
ENG 2263	American Literature I	3
ENG 2293	American Literature II	3
ENG 3223	Shakespeare: The Early Plays	3
or ENG 3233	Shakespeare: The Later Plays	
ENG 4973	Seminar for English Majors	3
2. Foundation courses, 6 hours chosen from two of the following three categories:		
a. Composition		
ENG 3303	Theory and Practice of Composition	
or ENG 3313	Advanced Composition	
b. English Language		
ENG 3323	History of the English Language	
or ENG 3333	Introduction to the Structure of English	
or ENG 3343	Principles of English Linguistics	

c. Critical Theory

ENG 3393	Literary Theories	
or ENG 4393	Feminist Theory of Literature	
3. Upper-division courses, 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		3
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		3
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 3363	Topics in Rhetoric and Composition	
ENG 3383	Writing in Public and Professional Contexts	
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		3
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		3
CLA 2023	Introduction to Ancient Rome	
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 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. Single language other than English

Select 6 semester credit hours in a single language other than English	6
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C. Electives

Select 33 semester credit hours of electives	33
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Students are encouraged (but not required) to select electives in such complementary areas of study as:

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

Total Credit Hours	78
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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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Mathematics core		3
American History core		3
Life & Physical Sciences core		3
Credit Hours		15

Spring

WRC 1023	Freshman Composition II (Q) (core)	3
Free elective		3
American History core		3
Life & Physical Sciences core		3
Social & Behavioral Sciences core		3
Credit Hours		15

Second Year

Fall

ENG 2213	Literary Criticism and Analysis (core and major)	3
Component Area Option core		3
Foreign language (semester I)		3-4
Free elective		3
Government-Political Science core		3
Credit Hours		15-16

Spring

ENG 2223	British Literature I	3
ENG 2263	American Literature I	3
Foreign language (semester II)		3-4
Creative Arts core		3
Government-Political Science core		3
Credit Hours		15-16

Third Year

Fall

ENG 2233	British Literature II	3
ENG 2293	American Literature II	3
Foundation Course (from A. 2. a, b, or c) ¹		3
Free elective		3
Upper-division free elective		3
Credit Hours		15

Spring

Upper-division Literature category (a) ²		3
Upper-division Literature category (b) ²		3
Foundation Course (from A. 2. a, b, or c) ¹		3
Free elective		3
Free elective		3
Credit Hours		15

Fourth Year

Fall

ENG 3223	Shakespeare: The Early Plays	3
or ENG 3233	or Shakespeare: The Later Plays	

Free elective	3
Free elective	3
Upper-division free elective	3
Upper-division Literature category (c) ²	3
Credit Hours	15

Spring

ENG 4973 Seminar for English Majors	3
Free elective	3
Free elective (to meet 120 hour minimum)	1-3
Upper-division Literature category (d) ²	3
Free Elective	3
Credit Hours	15-13

Total Credit Hours	120
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¹ The two Foundation courses must be chosen from two different categories (a, b, or c) under item A. 2. of the degree requirements.

² At least one of the courses from categories (a), (b), (c), or (d) (under item A. 3. of the degree requirements) must include the study of American literature.

Bachelor of Arts Degree in English with a Professional Writing Concentration

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

All candidates for the B.A. degree in English with a Professional Writing concentration must complete:

A. Courses for the major

1. Required courses:

ENG 2213 Literary Criticism and Analysis	3
ENG 2223 British Literature I	3
ENG 2233 British Literature II	3
ENG 2263 American Literature I	3
ENG 2293 American Literature II	3
ENG 3223 Shakespeare: The Early Plays	3
or ENG 3233 Shakespeare: The Later Plays	
ENG 3313 Advanced Composition	3
ENG 3413 Specialized Professional Writing	3
ENG 4933 Internship	3
ENG 4973 Seminar for English Majors	3

2. Upper-division courses:

Select one from each of the following categories, at least one must include the study of American literature:

- (a) American, English, Historical
- (c) Cross-Cultural, Gender Studies, and Race & Ethnic Studies
- (d) Authors and Genres listed above under degree requirements for the B.A. in English

3. Upper-division Professional Writing courses, 12 hours total, which must include:

ENG 2413 Technical Writing (if not already taken to fulfill core requirement)	
ENG 2433 Editing	
ENG 4433 Advanced Professional Writing	

B. Single language other than English

Select 6 semester credit hours in a single language other than English	6
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C. Electives

Select 21 semester credit hours of electives	21
Total Credit Hours	78

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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
	Mathematics core	3
	American History core	3
	Life & Physical Sciences core	3
Credit Hours		15

Spring

WRC 1023	Freshman Composition II (Q) (core)	3
	Free elective	3
	American History core	3
	Life & Physical Sciences core	3
	Social & Behavioral Sciences core	3
Credit Hours		15

Second Year

Fall

ENG 2213	Literary Criticism and Analysis (core and major)	3
ENG 2413	Technical Writing (core and major)	3
	Free elective	3
	Foreign language (semester I)	3-4
	Government-Political Science core	3
Credit Hours		15-16

Spring

ENG 2223	British Literature I	3
ENG 2433	Editing	3
	Creative Arts core	3
	Foreign language (semester II)	3-4
	Government-Political Science core	3
Credit Hours		15-16

Third Year

Fall

ENG 2233	British Literature II	3
ENG 2263	American Literature I	3
ENG 2293	American Literature II	3
ENG 3313	Advanced Composition	3
Free elective		3
Credit Hours		15

Spring

ENG 3223 or ENG 3233	Shakespeare: The Early Plays or Shakespeare: The Later Plays	3
ENG 3413	Specialized Professional Writing	3
Upper-division free elective		3
Upper-division free elective		3
Upper-division Literature category (a) ¹		3
Credit Hours		15

Fourth Year

Fall

ENG 4433	Advanced Professional Writing	3
ENG 4933	Internship	3
Free elective		3
Free elective		3
Upper-division Literature category (c) ¹		3
Credit Hours		15

Spring

ENG 4973	Seminar for English Majors	3
Free elective (to meet 120 hour minimum)		1-3
Upper-division free elective		3
Upper-division Literature category (d) ¹		3
Upper-division Professional Writing course		3
Credit Hours		15-13
Total Credit Hours		120

¹ At least one of the courses from categories (a), (c), or (d) (under item A. 2. of the degree requirements) 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 seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

All candidates for the B.A. degree in English with a Creative Writing concentration must complete:

A. English courses

1. Required courses:

ENG 2213	Literary Criticism and Analysis	3
ENG 2223	British Literature I	3
ENG 2233	British Literature II	3

ENG 2263	American Literature I	3
ENG 2293	American Literature II	3
ENG 3223 or ENG 3233	Shakespeare: The Early Plays Shakespeare: The Later Plays	3
ENG 4973	Seminar for English Majors	3
2. Select two of the following:		6
ENG 2323	Creative Writing: Fiction	
ENG 2333	Creative Writing: Poetry	
ENG 2343	Creative Writing: Nonfiction	

3. Upper-division courses

Select one from each of the following categories, at least one must include the study of American literature. 9

- (a) American, English, Historical
- (c) Cross-Cultural, Gender Studies, and Race & Ethnic Studies
- (d) Authors and Genres listed above under degree requirements for the B.A. in English

4. Select 9 semester credit hours of the following, at least 6 hours of which must be at the 4000 level: 9

ENG 3423	Topics in Creative Writing	
ENG 4523	Writer's Workshop: Advanced Fiction Writing	
ENG 4533	Writer's Workshop: Advanced Poetry Writing	

B. Single language other than English

Select 6 semester credit hours in a single language other than English 6

C. Electives

Select 27 semester credit hours of electives. Students are encouraged to repeat upper-level workshops, and to include ENG 2433 in their electives. 27

Total Credit Hours		78
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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 their academic advisor 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

First Year

		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
American History core		3
Life & Physical Sciences core		3
Mathematics core		3
Credit Hours		15

Spring

ENG 1113	Introduction to Creative Literary Arts (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
	American History core	3
	Life & Physical Sciences core	3
	Social & Behavioral Sciences core	3
Credit Hours		15

Second Year

Fall

ENG 2213	Literary Criticism and Analysis (core and major)	3
	Foreign language (semester I)	3-4
	Free Elective	3
	Component Area Option core	3
	Government-Political Science core	3
Credit Hours		15-16

Spring

ENG 2223	British Literature I	3
ENG 2263	American Literature I	3
ENG 2323	Creative Writing: Fiction	3
or ENG 2333	or Creative Writing: Poetry	
or ENG 2343	or Creative Writing: Nonfiction	
	Foreign language (semester II)	3-4
	Government-Political Science core	3
Credit Hours		15-16

Third Year

Fall

ENG 2233	British Literature II	3
ENG 2293	American Literature II	3
ENG 2323	Creative Writing: Fiction	3
or ENG 2333	or Creative Writing: Poetry	
or ENG 2343	or Creative Writing: Nonfiction	
	Free elective	3
	Upper-division free elective	3
Credit Hours		15

Spring

ENG 3223	Shakespeare: The Early Plays	3
or ENG 3233	or Shakespeare: The Later Plays	
ENG 3423	Topics in Creative Writing	3
	Free elective	3
	Upper-division free elective	3
	Upper-division Literature category (a) ¹	3
Credit Hours		15

Fourth Year

Fall

ENG 4523	Writer's Workshop: Advanced	3
or ENG 4533	Fiction Writing	
	or Writer's Workshop: Advanced Poetry Writing	
	Free elective	3
	Upper-division free elective	3
	Upper-division free elective	3

Upper-division Literature category (c) ¹	3
Credit Hours	15

Spring

ENG 4523	Writer's Workshop: Advanced	3
or ENG 4533	Fiction Writing	
	or Writer's Workshop: Advanced Poetry Writing	
ENG 4973	Seminar for English Majors	3
	Free elective (to meet 120 hour minimum)	1-3
	Upper-division free elective	3
	Upper-division Literature category (d) ¹	3
Credit Hours		15-13
Total Credit Hours		120

¹ At least one of the courses from categories (a), (c), or (d) (under item A. 3. of the degree requirements) must include the study of American literature.

Bachelor of Arts Degree in English with an English Language Arts and Reading Concentration

The B.A. 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 Interdisciplinary Education 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. Courses in English

1. Required courses in English:		
ENG 2213	Literary Criticism and Analysis	3
ENG 2223	British Literature I	3
ENG 2233	British Literature II	3
ENG 2263	American Literature I	3
ENG 2293	American Literature II	3
ENG 3223	Shakespeare: The Early Plays	3
or ENG 3233	Shakespeare: The Later Plays	
ENG 4973	Seminar for English Majors	3

2. Upper-division courses
 Select two additional upper-division courses in English from the following categories, at least one must include the study of American literature: 6

- (a) American, English, Historical
- (d) Authors and Genres listed above under degree requirements for the B.A. in English

3. Select one of the following:	3
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. English Language Arts and Reading concentration	
ENG 3303 Theory and Practice of Composition	3
ENG 3333 Introduction to the Structure of English	3
ENG 3323 History of the English Language	3
or ENG 3343 Principles of English Linguistics	
B. Professional Education and Reading Coursework	
BBL 3403 Cultural and Linguistic Equity for Schooling	3
C&I 4203 Models of Teaching in the Content Areas of the Secondary School	3
EDP 3203 Learning and Development in the Secondary School Adolescent	3
EDP 4203 Assessment and Evaluation	3
EDU 2103 Social Foundations for Education in a Diverse U.S. Society	3
ESL 3063 Second Language Teaching and Learning for Grades 4–8 and 7–12	3
IDS 2013 Introduction to Learning and Teaching in a Culturally Diverse Society	3
LTED 3673 Reading for Secondary Teachers-Grades 7–12	3
LTED 3683 Writing Development, Processes, and Instruction-Grades 7–12	3
SPE 3603 Introduction to Special Education	3
C. Student Teaching	
C&I 4646 Clinical Teaching: Grades 7–12	6
D. Single language other than English	
Select 6 semester credit hours in a single language other than English	6
Total Credit Hours	81

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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3

WRC 1013	Freshman Composition I (Q) (core)	3
Foreign language (semester I)		3-4
Life & Physical Sciences core		3
Mathematics core		3
Credit Hours		15

Spring

WRC 1023	Freshman Composition II (Q) (core)	3
Foreign language (semester II)		3-4
American History core		3
Life & Physical Sciences core		3
Social & Behavioral Sciences core		3
Credit Hours		15

Second Year

Fall

ENG 2213	Literary Criticism and Analysis (core and major)	3
ENG 3333	Introduction to the Structure of English	3
American History core		3
Creative Arts core		3
Government-Political Science core		3
Credit Hours		15

Spring

ENG 2223	British Literature I	3
ENG 2263	American Literature I	3
ENG 3303	Theory and Practice of Composition	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
Government-Political Science core		3
Component Area Option core		3
Credit Hours		18

Third Year

Fall

BBL 3403	Cultural and Linguistic Equity for Schooling	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
ENG 2233	British Literature II	3
ENG 2293	American Literature II	3
ENG 3323 or ENG 3343	History of the English Language or Principles of English Linguistics	3
SPE 3603	Introduction to Special Education	3
Credit Hours		18

Spring

EDP 3203	Learning and Development in the Secondary School Adolescent	3
ENG 3223 or ENG 3233	Shakespeare: The Early Plays or Shakespeare: The Later Plays	3
ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
LTED 3673	Reading for Secondary Teachers-Grades 7–12	3

Upper-division Literature category (a) ¹	3
Select one of the following:	3
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	
Credit Hours	18

Fourth Year

Fall

C&I 4203 Models of Teaching in the Content Areas of the Secondary School	3
EDP 4203 Assessment and Evaluation	3
ENG 4973 Seminar for English Majors	3
LTED 3683 Writing Development, Processes, and Instruction-Grades 7–12	3

Upper-division Literature category (d) ¹	3
Credit Hours	15

Spring

C&I 4646 Clinical Teaching: Grades 7–12	6
Credit Hours	6
Total Credit Hours	120

¹ At least one of the courses from categories (a) or (d) (under item A. 2. of the degree requirements) must include the study of American literature.

- Minor in English Literature (p. 168)
- Minor in Professional Writing (p. 168)

Minor in English Literature

All students pursuing the Minor in English Literature must complete 21 semester credit hours of English and American literature.

A. Required course

ENG 2213 Literary Criticism and Analysis	3
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B. Select three from the following: 9

ENG 2223 British Literature I	
ENG 2233 British Literature II	
ENG 2263 American Literature I	
ENG 2293 American Literature II	

C. Select one of the following: 3

ENG 3223 Shakespeare: The Early Plays	
ENG 3233 Shakespeare: The Later Plays	

D. Select two upper-division courses in literature in English, one course must include the study of American Literature 6

Total Credit Hours	21
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Minor in Professional Writing

All students pursuing the Minor in Professional Writing must complete 18 semester credit hours of professional writing.

A. Required courses

ENG 2413 Technical Writing	3
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ENG 2433 Editing	3
ENG 4433 Advanced Professional Writing	3

B. Select three from the following: 9

ENG 2033 Science, Technology, and Society	
ENG 3303 Theory and Practice of Composition	
ENG 3313 Advanced Composition	
ENG 3323 History of the English Language or ENG 3333 Introduction to the Structure of English or ENG 3343 Principles of English Linguistics	
ENG 3363 Topics in Rhetoric and Composition ¹	
ENG 3383 Writing in Public and Professional Contexts ¹	
ENG 3413 Specialized Professional Writing	
ENG 4433 Advanced Professional Writing	
ENG 4933 Internship	

Total Credit Hours	18
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¹ These courses are topics courses and may be repeated when topics vary; each may be used to fulfill up to 6 semester credit hours for the minor in professional writing.

Certificate in Professional Writing and Rhetoric

The undergraduate Certificate in Professional Writing and Rhetoric (PWR) is designed to provide students with systematic preparation in professional writing for academic, workplace, and public contexts. It enables undergraduates from across the university to pursue a coursework program that concentrates on the expansion of skills and techniques for effective communication—written, oral, and visual competencies—in and across professional settings.

Students pursuing the Certificate in Professional Writing and Rhetoric must complete 15 semester credit hours:

A. 6 semester credit hours of required courses: 6

ENG 2413 Technical Writing	
ENG 4433 Advanced Professional Writing	

B. 9 additional semester credit hours from the following courses, at least 6 of which must be upper division: 9

ENG 2033 Science, Technology, and Society	
ENG 2433 Editing	
ENG 2443 Introduction to Rhetoric	
ENG 3303 Theory and Practice of Composition	
ENG 3323 History of the English Language or ENG 3333 Introduction to the Structure of English or ENG 3343 Principles of English Linguistics	
ENG 3363 Topics in Rhetoric and Composition	
ENG 3383 Writing in Public and Professional Contexts	
ENG 3413 Specialized Professional Writing	

Total Credit Hours	15
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Department of History

The Department of History offers Bachelor of Arts (B.A.) 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 before the beginning of their final year at UTSA is 3.5 or above, and whose overall grade point average is 3.2, may earn Department Honors. To do so, students must enroll in the honors thesis course (HIS 4993 or AMS 4993) during their final two semesters and must complete a substantial original research project approved by the faculty supervisor and two other faculty members. Students must maintain a 3.5 grade point average in the major to be eligible for the award. Students who enroll in an Honor's Thesis course (HIS 4993 or AMS 4993) and complete this work satisfactorily **do not** need to enroll in HIS 4973 Seminar in History or AMS 4973 Advanced Seminar in American Studies.

- B.A. degree in American Studies (p. 169)
- B.A. degree in History (p. 170)
- B.A. degree in History with a Concentration in Social Studies (p. 172)

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 B.A. 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.

AMS 2043 may be used to satisfy the core requirement in Social and Behavioral Sciences as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6

Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. American Studies major courses

33 semester credit hours in courses approved by the American Studies advisor. At least 21 semester credit hours must be at the upper-division level.

1. 6 semester credit hours of required courses:	6
AMS 2043 Approaches to American Culture	
AMS 3123 Applications of American Studies	
2. 18 semester credit hours of courses focused in the interdisciplinary topics: Transnationalism, Gender and Sexuality, and Race and Ethnicity. A minimum of 3 credit hours in each area is required.	18
AMS 3243 Studies in Transnationalism (may be repeated)	
AMS 3343 Studies in Race and Ethnicity (may be repeated)	
AMS 3443 Studies in Gender and Sexuality (may be repeated)	
3. 6 semester credit hours of American culture is required:	6
AMS 4823 Topics in American Culture (May be repeated for credit as long as the topics differ. Students may also take AMS 4983 Senior Thesis in their last semester in partial fulfillment of this requirement.)	
and 3 credit hours from one of the following:	
AMS 3013 Early American Culture	
AMS 3023 Modern American Culture	
4. 3 semester credit hours of an advanced seminar course is required:	3
AMS 4973 Advanced Seminar in American Studies	
B. Electives	
Select 45 semester credit hours of electives	45
Total Credit Hours	78

Students majoring in American Studies are encouraged to make an advising appointment with their academic advisor 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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Mathematics core		3
Credit Hours		15

Spring

HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
WRC 1023	Freshman Composition II (Q) (core)	3
Free elective		3
Life & Physical Sciences core		3
Credit Hours		15

Second Year

Fall		Credit Hours
AMS 2043	Approaches to American Culture (core and major)	3
Free elective		3
Free elective		3
Component Area Option core		3
Language, Philosophy & Culture core		3
Credit Hours		15

Spring

Free elective		3
Free elective		3
Free elective		3
Upper-division free elective		3
Life & Physical Sciences core		3
Credit Hours		15

Third Year

Fall		Credit Hours
AMS 3123	Applications of American Studies	3
AMS 3243	Studies in Transnationalism	3
Free elective		3
Free elective		3
Upper-division free elective		3
Credit Hours		15

Spring

AMS 3343	Studies in Race and Ethnicity	3
AMS 3443	Studies in Gender and Sexuality	3
Free elective		3
Upper-division free elective		3
Upper-division free elective		3
Credit Hours		15

Fourth Year

Fall		Credit Hours
AMS 4823	Topics in American Culture	3
AMS 4973	Advanced Seminar in American Studies	3
Free elective		3
Upper-division free elective		3
Creative Arts core		3
Credit Hours		15

Spring

AMS 3013 or AMS 3023 or AMS 4823	Early American Culture or Modern American Culture or Topics in American Culture	3
Free elective		3
Free elective		3
Upper-division free elective		3
Free elective (to meet 120 hour minimum)		3
Credit Hours		15
Total Credit Hours		120

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.

Courses taken to satisfy the core requirement in American History may not be used to satisfy degree requirements. One of the following courses should be used to satisfy the core requirement in Language,

Philosophy and Culture (one of these courses may also be used to satisfy the Component Area Option core requirement):

HIS 2123	Introduction to World Civilization to the Fifteenth Century	3
HIS 2133	Introduction to World Civilization since the Fifteenth Century	3
HIS 2533	Introduction to Latin American Civilization	3
HIS 2543	Introduction to Islamic Civilization	3
HIS 2553	Introduction to East Asian Civilization	3
HIS 2573	Introduction to African Civilization	3
HIS 2583	Introduction to South Asian Civilization	3

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Course

Students pursuing the Bachelor of Arts degree in History must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

HIS 2003	Historical Methods
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Degree Requirements

A. History major courses

39 semester credit hours in the major, of which 27 hours must be at the upper-division level.

1. Foundation course for the major. Students must take it as early as possible in their program.

HIS 2003	Historical Methods	3
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2. Select three courses from the sophomore-level civilization courses, 9 including the following:

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 2563	Introduction to European Civilization	
HIS 2573	Introduction to African Civilization	
HIS 2583	Introduction to South Asian Civilization	

3. Select 24 upper-division credit hours of history courses, including at least one U.S., one European, one Latin American, and one African or Asian studies course. Students must complete one Research Intensive upper-division course as part of their degree program.

4. Seminar or Honors Thesis

HIS 4973	Seminar in History (HIS 2003 Historical Methods is a prerequisite for enrollment in this course.)	3
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Students who complete an Honor's Thesis may substitute HIS 4993 for HIS 4973.

B. Single language other than English

Select 6 semester credit hours of a single language other than English. For languages other than Sign Language, courses must include a written component. Conversational language training does not fulfill this requirement.

C. Electives

Select 33 semester credit hours of electives. In fulfillment of this requirement, History majors are encouraged to take at least 9 semester credit hours of upper-division coursework in disciplines that support the study of History.

Total Credit Hours	78
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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 their academic advisor 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

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Mathematics core		3
	Credit Hours	15

Spring

HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
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POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
WRC 1023	Freshman Composition II (Q) (core)	3
Free elective		3
Life & Physical Sciences core		3
Credit Hours		15

Second Year

Fall

HIS 2003	Historical Methods	3
Foreign language (semester I)		3-4
Language, Philosophy & Culture core		3
Social and Behavioral Sciences core		3
Component Area Option core		3
Credit Hours		15-16

Spring

Civilization course		3
Foreign language (semester II)		3-4
Free elective		3
Free elective		3
Life & Physical Sciences core		3
Credit Hours		15-16

Third Year

Fall

Civilization course		3
Free elective		3
Upper-division HIS elective		3
Upper-division U.S. HIS		3
Upper-division free elective		3
Credit Hours		15

Spring

Civilization course		3
Free elective		3
Upper-division European HIS		3
Upper-division HIS elective		3
Upper-division free elective		3
Credit Hours		15

Fourth Year

Fall

Free elective		3
Upper-division African/Asian HIS		3
Upper-division Latin American HIS		3
Upper-division free elective		3
Creative Arts core		3
Credit Hours		15

Spring

HIS 4973	Seminar in History	3
Free elective (to meet 120 hour minimum)		1-3
Upper-division HIS elective		3
Upper-division HIS elective		3

Upper-division free elective	3
Credit Hours	15-13
Total Credit Hours	120

Bachelor of Arts Degree in History with a Concentration in Social Studies

The Bachelor of Arts (B.A.) 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 123, 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 B.A. 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.

GES 2613 may be used to satisfy 3 hours of the Life and Physical Sciences core requirement as well as a major requirement. HIS 1043 and HIS 1053 may be used to satisfy the American History core requirement as well as a major requirement. GES 1013 may be used to satisfy the Social and Behavioral Sciences core requirement as well as a major requirement. ECO 2003 may be used to satisfy the Component Area Option core requirement as well as a major requirement. HIS 2123 may be used to satisfy the Language, Philosophy and Culture core requirement as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Course

Students pursuing the B.A. degree in History must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of

"W" or taking an equivalent course at another institution, will be required to change his or her major.

HIS 2003 Historical Methods

Degree Requirements

A. Required courses

ECO 2003	Economic Principles and Issues	3
GES 1013	Fundamentals of Geography	3
GES 1023	World Regional Geography	3
GES 2613	Physical Geography	3
HIS 1043	United States History: Pre-Columbus to Civil War Era	3
HIS 1053	United States History: Civil War Era to Present	3
HIS 2003	Historical Methods	3
HIS 2053	Texas History	3
HIS 2123	Introduction to World Civilization to the Fifteenth Century	3
HIS 2133	Introduction to World Civilization since the Fifteenth Century	3
HIS 4143	History Standards and Their Public Reception	3
HIS 4973	Seminar in History	3

B. Civilization courses

Select two of the following: 6

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. Upper-division history courses

Specifically two in U.S. history, one in European history, and two in either Latin American, Asian or African history 15

D. Additional courses

Select two of the following: 6

HIS 3093	United States Constitutional History	
POL 3013	The American Legal Process	
POL 3113	American Political Thought	
POL 3283	The American Presidency	
POL 3313	The Supreme Court	
POL 3323	Constitutional Law I	
POL 3363	Political Parties and Interest Groups	
POL 3373	The Legislative Process	
POL 3503	American Foreign Policy since World War II	

E. Geography course

Select one of the following: 3

GES 3113	Geography of the United States and Canada	
GES 3123	Geography of Latin America	
GES 3133	Geography of Europe	
GES 3213	Cultural Geography	
GES 3513	Urban Geography	
GES 3533	Geography of Local Economic Activity	

GES 3643	Political Geography	
GES 3723	Physiography	

F. Communication, reading and education courses

BBL 3403	Cultural and Linguistic Equity for Schooling	3
C&I 4203	Models of Teaching in the Content Areas of the Secondary School	3
C&I 4646	Clinical Teaching: Grades 7–12	6
EDP 3203	Learning and Development in the Secondary School Adolescent	3
EDP 4203	Assessment and Evaluation	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
LTED 3773	Reading and Writing Across the Disciplines-Grades 7–12	3
SPE 3603	Introduction to Special Education	3

Total Credit Hours 99

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 their academic advisor 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

First Year

Fall		Credit Hours
ECO 2003	Economic Principles and Issues (core and major)	3
HIS 1043	United States History: Pre-Columbus to Civil War Era (core and major)	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Mathematics core		3
Credit Hours		15

Spring

AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1053	United States History: Civil War Era to Present (core and major)	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3

WRC 1023	Freshman Composition II (Q) (core)	3
	Life & Physical Sciences core	3
	Credit Hours	15

Second Year

Fall

GES 1013	Fundamentals of Geography (core and major)	3
HIS 2003	Historical Methods	3
HIS 2053	Texas History	3
HIS 2123	Introduction to World Civilization to the Fifteenth Century (core and major) ¹	3
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
	Credit Hours	15

Spring

EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
GES 2613	Physical Geography (core and major)	3
HIS 2133	Introduction to World Civilization since the Fifteenth Century ¹	3
	Civilization course from Section B	3
	Upper-division U.S. HIS	3
	Creative Arts core	3
	Credit Hours	18

Third Year

Fall

BBL 3403	Cultural and Linguistic Equity for Schooling	3
EDP 3203	Learning and Development in the Secondary School Adolescent	3
ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
SPE 3603	Introduction to Special Education	3
	POL or HIS course from Section D	3
	Upper-division African/Asian/Latin American HIS	3
	Credit Hours	18

Spring

EDP 4203	Assessment and Evaluation	3
GES 1023	World Regional Geography	3
LTED 3773	Reading and Writing Across the Disciplines-Grades 7–12	3
	POL or HIS course from Section D	3
	Upper-division European HIS	3
	Upper-division U.S. HIS	3
	Credit Hours	18

Fourth Year

Fall

C&I 4203	Models of Teaching in the Content Areas of the Secondary School	3
HIS 4143	History Standards and Their Public Reception	3

HIS 4973	Seminar in History	3
	Civilization course from Section B	3
	GES course from Section E	3
	Upper-division African/Asian/Latin American HIS	3
	Credit Hours	18

Spring

C&I 4646	Clinical Teaching: Grades 7–12	6
	Credit Hours	6
	Total Credit Hours	123

¹ HIS 2123 Introduction to World Civilization to the Fifteenth Century and HIS 2133 Introduction to World Civilization since the Fifteenth Century may be taken in either order.

- Minor in American Studies (p. 174)
- Minor in History (p. 174)

Minor in American Studies

All students pursuing a Minor in American Studies must complete 21 semester credit hours.

A. Required courses

AMS 2043	Approaches to American Culture	3
AMS 3123	Applications of American Studies	3
AMS 3243	Studies in Transnationalism	3
AMS 3343	Studies in Race and Ethnicity	3
AMS 3443	Studies in Gender and Sexuality	3

B. Select two of the following:

AMS 3013	Early American Culture	3
AMS 3023	Modern American Culture	3
AMS 4823	Topics in American Culture	3

Total Credit Hours	21
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To declare a Minor in American Studies, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Minor in History

All students pursuing a Minor in History must complete 18 semester credit hours.

A. Required courses

HIS 2003	Historical Methods	3
HIS 2123	Introduction to World Civilization to the Fifteenth Century	3
or HIS 2133	Introduction to World Civilization since the Fifteenth Century	3

Select one of the following: 3

HIS 2533	Introduction to Latin American Civilization	3
HIS 2543	Introduction to Islamic Civilization	3
HIS 2553	Introduction to East Asian Civilization	3
HIS 2563	Introduction to European Civilization	3
HIS 2573	Introduction to African Civilization	3
HIS 2583	Introduction to South Asian Civilization	3

B. Upper-division history electives

Electives	9
Total Credit Hours	18

To declare a Minor in History, obtain advice, or seek approval for substitutions for course requirements, students should consult their academic advisor.

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, East Asian Studies, 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, Italian and Korean. 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 (FL 4993 Honors Research, FRN 4993 Honors Research, GER 4993 Honors Research, 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.

- B.A. degree in Spanish (p. 175)
- B.A. degree in Modern Language Studies (p. 177)

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 Intermediate Spanish II, SPN 3003 Oral and Written Expression, 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 Interdisciplinary Education 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 B.A. degree in Spanish must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both a degree requirement and a Core Curriculum requirement, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree.

SPN 1014 may be used to satisfy the Language, Philosophy and Culture core requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. Courses within the major, all of which must be at the upper-division level

1. Required courses (recommended for early completion)		
SPN 3043	Introduction to Literature	3
SPN 3063	Grammar and Composition	3
SPN 4003	Advanced Language Skills	3
2. Select two of the following:		
SPN 3013	Spanish Phonetics and Phonology	6
SPN 3113	Linguistic Structures of Spanish	
SPN 4113	Topics in Spanish Linguistics	
3. Select three of the following:		
SPN 3413	The Literature of Spain from the Middle Ages to 1700	9
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. Select two of the following:		6
SPN 3613	Spanish Culture and Civilization	
SPN 3623	Latin American Culture and Civilization	
SPN 4303	Topics in Hispanic Cultures	
5. Spanish Electives, at least one course must be at the 4000 level		9
6. Select one course as Signature Experience. The course can be applied to section A5 as part of the Spanish elective hours or to the free electives in section B. The following courses can be used as the Signature Experience:		
FL 3033	Advanced Language Study Abroad	
FL 3036	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. Free Electives		39
In fulfillment of this requirement, majors are encouraged to take at least 12 semester credit hours of upper-division coursework in disciplines that support the study of foreign languages.		
Total Credit Hours		78

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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
SPN 1014	Elementary Spanish I (core and major (or free elective))	3-4
WRC 1013	Freshman Composition I (Q) (core)	3
Mathematics core		3
Life & Physical Sciences core		3
Credit Hours		15-16

Spring

HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
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POL 1013	Introduction to American Politics (core)	3
SPN 1024	Elementary Spanish II (or free elective)	3-4
WRC 1023	Freshman Composition II (Q) (core)	3
Life & Physical Sciences core		3
Credit Hours		15-16

Second Year

Fall

HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
SPN 2013	Intermediate Spanish I (or free elective)	3
Free elective		3
Language, Philosophy & Culture core or free elective		3
Social and Behavioral Sciences core		3
Credit Hours		15

Spring

POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
SPN 2023	Intermediate Spanish II	3
Free elective		3
Creative Arts core		3
Component Area Option core		3
Credit Hours		15

Third Year

Fall

SPN 3013 or SPN 3113 or SPN 4113	Spanish Phonetics and Phonology or Linguistic Structures of Spanish or Topics in Spanish Linguistics	3
SPN 3063	Grammar and Composition	3
Free elective		3
Free elective		3
Support work		3
Credit Hours		15

Spring

SPN 3013 or SPN 3113 or SPN 4113	Spanish Phonetics and Phonology or Linguistic Structures of Spanish or Topics in Spanish Linguistics	3
SPN 3043	Introduction to Literature	3
SPN 4003	Advanced Language Skills	3
Support work		3
Upper-division SPN elective		3
Credit Hours		15

Fourth Year**Fall**

SPN 3413 or SPN 3423 or SPN 3463 or SPN 3473 or SPN 4203	The Literature of Spain from the Middle Ages to 1700 or The Literature of Spain from 1700 to the Present or Latin American Literature to Modernism or Latin American Literature since Modernism or Topics in Hispanic Literatures	3
SPN 3413 or SPN 3423 or SPN 3463 or SPN 3473 or SPN 4203	The Literature of Spain from the Middle Ages to 1700 or The Literature of Spain from 1700 to the Present or Latin American Literature to Modernism or Latin American Literature since Modernism or Topics in Hispanic Literatures	3
SPN 3613 or SPN 3623 or SPN 4303	Spanish Culture and Civilization or Latin American Culture and Civilization or Topics in Hispanic Cultures	3
Free elective (to meet 120 hour minimum)		1-3
Support work		3
	Credit Hours	15-13

Spring

SPN 3413 or SPN 3423 or SPN 3463 or SPN 3473 or SPN 4203	The Literature of Spain from the Middle Ages to 1700 or The Literature of Spain from 1700 to the Present or Latin American Literature to Modernism or Latin American Literature since Modernism or Topics in Hispanic Literatures	3
SPN 3613 or SPN 3623 or SPN 4303	Spanish Culture and Civilization or Latin American Culture and Civilization or Topics in Hispanic Cultures	3
4000-level SPN elective		3
Support work		3
Upper-division SPN elective		3
	Credit Hours	15
	Total Credit Hours	120

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 Bachelor of Arts (B.A.) in Modern Language Studies is available to students of French, German, Japanese, and Russian. For students of Spanish, these needs are met by the Bachelor of Arts degree in Spanish.

The program includes three main components:

1. The learning of a specific language (French, German, Japanese, Russian)
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 linguistics 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 Languages Across the Curriculum) 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 B.A. 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 Interdisciplinary Education 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 B.A. degree in Modern Language Studies must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both a degree requirement and a Core Curriculum requirement, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree.

CSH 1103, CSH 1113, CSH 1213, or CSH 2113 should be used to satisfy the core requirement in Language, Philosophy and Culture.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. Courses within the major

1. Language courses in a single discipline (FRN, GER, JPN, RUS) 18

Select two intermediate courses and four upper-division courses in a single language discipline. SPN courses may not be used to meet this requirement.

2. Linguistics course

LNG 3813 Introduction to Linguistics 3

3. Select four courses in comparative studies and/or in literature in translation, two of which must be at the upper-division level 12

a. Select one to two language-specific literature and culture courses:

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. Select two to three comparative studies courses:

CSH 1103	Literary Masterpieces of Western Culture I	
CSH 1113	Literary Masterpieces of Western Culture II	
CSH 3023	Studies in Comparative Literature	
CSH 3823	Advanced Topics in World Cultures	
CSH 4003	Colloquium in East Asian Culture	
MES 3113	Film Studies	

4. Select 3 semester credit hours of signature experience (FL 4953 Special Projects, study abroad, internship, or an additional upper-division course in the language concentration). Students in the Honors program are encouraged to complete an Honors thesis. 3

B. Support work in any language or internationally focused topics

Select 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. 18

Study Abroad and Languages Across the Curriculum courses are strongly recommended.

C. Electives

Select 24 semester credit hours of electives	24
Total Credit Hours	78

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 their academic advisor 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. Study Abroad courses are strongly encouraged. Contact the department for advising.

B.A. in Modern Language Studies – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
WRC 1013	Freshman Composition I (Q) (core)	3
Language 1014 or free elective		3-4
Life & Physical Sciences core		3
	Credit Hours	15-16

Spring

HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
WRC 1023	Freshman Composition II (Q) (core)	3
Language 1024 or free elective		3-4
Life & Physical Sciences core		3
Mathematics core		3
	Credit Hours	15-16

Second Year**Fall**

POL 1013	Introduction to American Politics (core)	3
Free elective		3
Language 2013 (Intermediate I)		3
Language, Philosophy & Culture core		3
Social and Behavioral Sciences core		3
Credit Hours		15

Spring

POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Free elective		3
Language 2023 (Intermediate II)		3
Creative Arts core		3
Component Area Option core		3
Credit Hours		15

Third Year**Fall**

LNG 3813	Introduction to Linguistics	3
Degree requirement A.3.a.		3
Free elective		3
Support work		3
Upper-division language course		3
Credit 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
Credit Hours		15

Fourth 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
Credit Hours		15

Spring

Free elective		3
Free elective (to meet 120 hour minimum)		1-3
Signature Experience		3
Support work		3
Support work		3
Credit Hours		15-13
Total Credit Hours		120

- Minor in Comparative Literature (p. 179)
- Minor in East Asian Studies (p. 179)
- Minor in Foreign Languages (p. 180)

- Minor in French (p. 180)
- Minor in German (p. 180)
- Minor in Linguistics (p. 180)
- Minor in Russian (p. 180)
- Minor in Spanish (p. 180)

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. Upper-division literature courses

Select 12 semester credit hours from at least two of the following disciplines: Classics, English, French, German, Italian, Russian, or Spanish 12

B. Upper-division in comparative studies in the humanities**1. Comparative Literature**

CSH 3023	Studies in Comparative Literature	3
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2. One course of an additional upper-division CSH course	3
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Total Credit Hours	18
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Minor in East Asian Studies

All students pursuing the Minor in East Asian Studies must complete 19 semester credit hours.

A. Required Courses

CHN 1024	Elementary Chinese II	4
or JPN 1024	Elementary Japanese II	
or KOR 1024	Elementary Korean II	

CSH 4003	Colloquium in East Asian Culture	3
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B. 12 semester credit hours of elective courses 12

CSH 1213	Topics in World Cultures	
CSH 3823	Advanced Topics in World Cultures	
CSH 4153	Special Projects in East Asian Studies	
GES 3433	The Geography and Politics of the Asian Rim	
HIS 2553	Introduction to East Asian Civilization	
HIS 3903	Modern Japan	
HIS 3913	Late Imperial China	
HIS 3923	China in Revolution	
PHI 3073	Asian Philosophy	
POL 3443	Governments and Politics of East Asia	

Free Elective Any East Asia focused course, including an additional language course at the 2000-level or above, or a Study Abroad, chosen in consultation with the student's advisor.

Total Credit Hours 19

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. Language skill courses in the same language at the 2000 level or above

Language skill courses 6

B. Language and Linguistics courses, including FL

Select 12 semester credit hours in the department, 9 hours of which must be at the upper-division level 12

Total Credit Hours 18

Minor in French

All students pursuing the Minor in French must complete 18 semester credit hours at the 2000 level and above.

A. Required language skill courses

FRN 2013 Intermediate French I 3

FRN 2023 Intermediate French II 3

FRN 3023 Advanced Language Skills 3

B. Additional courses in French or French-related topics, including CSH and FL

Select 9 semester credit hours, 6 hours of which must be at the upper-division level, chosen in consultation with the advisor for the Minor in French 9

Total Credit Hours 18

Minor in German

All students pursuing the Minor in German must complete 18 semester credit hours at the 2000 level and above.

A. Required language skill course

GER 2013 Intermediate German I 3

GER 2023 Intermediate German II 3

GER 3023 Advanced Language Skills 3

B. Additional German or German-related courses, including CSH and FL

Select 9 semester credit hours, 6 of which must be at the upper-division level, chosen in consultation with the advisor for the Minor in German 9

Total Credit Hours 18

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. Minor courses

ENG 3343 Principles of English Linguistics 3
or LNG 3813 Introduction to Linguistics

B. Linguistics of a particular language

Select one of the following: 3

ENG 3323 History of the English Language

ENG 3333 Introduction to the Structure of English

SPN 3013 Spanish Phonetics and Phonology

SPN 3113 Linguistic Structures of Spanish

SPN 4113 Topics in Spanish Linguistics

SPN 4123 The Spanish of the United States

C. Additional courses

Select two of the following in psycholinguistics, anthropological linguistics, sociolinguistics, or historical linguistics: 6

ANT 2053 Introduction to Cultural Anthropology

BBL 3013 Language Analysis and Bilingualism

BBL 3133 Language Development in Bilinguals

BBL 3403 Cultural and Linguistic Equity for Schooling

LNG 3833 Sociolinguistics

D. Two additional courses chosen in consultation with an advisor

Select two courses in one or more of the following approved areas: anthropology, bicultural-bilingual studies, English, foreign languages, and linguistics 6

Total Credit Hours 18

Minor in Russian

All students pursuing the Minor in Russian must complete 18 semester credit hours at the 2000 level and above.

A. Required Language skill courses

RUS 2013 Intermediate Russian I 3

RUS 2023 Intermediate Russian II 3

B. Additional Russian or Russian-related courses, including CSH and FL

Select 12 additional semester credit hours, 9 hours must be at the upper-division level 12

Total Credit Hours 18

Minor in Spanish

All students pursuing the Minor in Spanish must complete 18 semester credit hours.

A. Required language skill courses

SPN 2023 Intermediate Spanish II 3

SPN 3003	Oral and Written Expression	3
SPN 3033	Oral Communication Skills	3
SPN 3063	Grammar and Composition	3
SPN 4003	Advanced Language Skills	3
B. Upper-division Spanish courses		
Select 3 semester credit hours of other upper-division Spanish courses chosen in consultation with the advisor		3
Total Credit Hours		18

Department of Music

The Department of Music offers the Bachelor of Music degree and the Bachelor of Arts in Music degree. Within the Bachelor of Music degree, students may select a concentration in Music Studies (with all-level teacher certification) or an emphasis in either music performance, composition, or music marketing. The department also offers minors in Dance, Music, Jazz Studies, Music Marketing, and Music Technology. The Department of Music is accredited by the National Association of Schools of Music.

Admission to the Department of Music

In order to declare music as a major, students must successfully audition for UTSA music faculty on their principal instrument. Ideally, that audition should take place prior to the student's first semester at UTSA. If that does not occur, students must audition within two semesters of starting at UTSA. Students may audition to be a music major a maximum of three times. Information on auditions can found at <http://music.utsa.edu/index.php/prospective-students/audition-process>.

Once admitted, music majors are expected to make consistent, satisfactory progress toward their degree. A student who fails to meet this expectation will meet with a program area advisor and may be required to change his or her major to a field outside the Department of Music.

If a student is not enrolled in Private Instruction for two consecutive long semesters (Fall and Spring), the student must re-audition for admission as a UTSA music major.

Transfer students who have completed four semesters of music theory, ear training, and class piano at another institution must complete any necessary review/proficiency requirements and be eligible for all upper-level music courses within two years of entering the UTSA Department of Music and declaring the music major. A transfer student who fails to meet this expectation will be required to change his or her major to a field outside the Department of Music.

COLFA Signature Experience

The Department of Music supports the COLFA Signature Experience through the following capstone experiences:

Music Studies: Student Teaching (C&I 4716 Clinical Teaching: All Level EC-12). 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 (p. 181)
 - Music Studies Concentration (p. 182)
 - Composition Emphasis (p. 186)
 - Music Performance Emphasis (p. 188)
 - Music Marketing Emphasis (p. 193)
- B.A. degree in Music (p. 195)

Bachelor of Music Degree

The minimum number of semester credit hours required for the Bachelor of Music (B.M.) degree 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.

All candidates for this degree must fulfill the Core Curriculum requirements (42 semester credit hours), the Music Core requirements (32 semester credit hours), and the course requirements for the chosen concentration or emphasis (59 semester credit hours for Music Studies and 56 credit hours for Composition, Music Performance, and Music Marketing).

All Bachelor of Music students must also complete the Concert Attendance requirement, which requires that students attend a minimum of 48 concerts prior to enrolling in their capstone experience (Senior Recital, Student Teaching, or Music Marketing Internship). See the Department of Music Student Handbook for details.

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 Music degree must fulfill University Core Curriculum requirements in the same manner as other students.

All students should select MUS 2243 to satisfy the core requirement in Creative Arts, as well as a Music Core requirement.

Students in the Music Marketing emphasis should select ECO 2003 to satisfy the core requirement in Social and Behavioral Sciences.

Students in the Music Performance emphasis whose principal instrument is voice should select FRN 1014, GER 1014, or ITL 1014 to satisfy the core requirement in Language, Philosophy and Culture.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3

Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the Bachelor of Music degree must successfully complete the following Gateway Courses with a grade of “D-” or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major to a field outside the Department of Music.

MUS 1102	Aural Skills I
MUS 1112	Basic Skills of Music I

Music Core Requirements

All candidates for the Bachelor of Music degree, regardless of concentration or emphasis, must complete the following 32 semester credit hours of required music courses.

MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1521	Class Piano 1 ¹	1
MUS 1621	Class Piano 2 ¹	1
MUS 2102	Aural Skills III	2
MUS 2112	Aural Skills IV	2
MUS 2152	Basic Skills of Music III	2
MUS 2162	Basic Skills of Music IV	2
MUS 2243	World Music in Society ²	3
MUS 2403	Conducting I	3
MUS 2421	Class Piano 3 ¹	1
MUS 2521	Class Piano 4 ¹	1
MUS 3213	Music in Civilization I	3
MUS 3223	Music in Civilization II	3
MUS 3413	Psychology of Music	3
Total Credit Hours		32

¹ Keyboard principals must replace Class Piano 1-4 with MUS 1552 Functional Piano for Keyboard Principals and 2 credits chosen from MUS 1511 Music Performance-Secondary Instrument and MUS 1531 Class Voice. Non-keyboard principals who test out of 1-4 semesters of Class Piano must replace those credits with an equivalent number of credits from MUS 1511 Music Performance-Secondary Instrument and MUS 1531 Class Voice.

² MUS 2243 World Music in Society should also be used to satisfy the Core Curriculum requirement in Creative Arts.

Music Studies Concentration (with all-level teacher certification)

All candidates for the Music Studies concentration must fulfill the Music Core Requirements as outlined above (32 semester credit hours), as well as the following course requirements necessary for this concentration (59 semester credit hours).

The principal instrument for those whose student teaching will be in band must be a woodwind, brass, or percussion instrument (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, string bass (not electric bass), classical guitar, or piano.

The principal instrument for those whose student teaching will be in choral or elementary general music must be voice, classical guitar, or piano.

A. Principal Instrument Private Lessons 12

MUS 1512	Music Performance-Private Instruction
MUS 1542	Music Performance-Private Instruction I
MUS 2542	Music Performance-Private Instruction II (repeated for a total of 4 credit hours)
MUS 3532	Music Performance-Private Instruction III (repeated for a total of 4 credit hours)

All students must perform and successfully pass a 30-minute recital during their last semester of enrollment in MUS 3532 Music Performance-Private Instruction III.

B. Performance Ensembles 4

As a special degree requirement, all students in the Music Studies concentration are required to enroll in an assigned ensemble every semester except the semester of C&I 4716 Clinical Teaching: All Level EC–12. Wind and percussion students are also required to enroll in MUS 3801 UTSA Athletic Band during their first two Fall semesters. Guitar and keyboard students must enroll in at least 6 semesters of an assigned large ensemble and two semesters of MUS 4581 Chamber Music.

1. Students pursuing the All-Level Instrumental track

String principals must enroll in MUS 3761 UTSA Orchestra every semester.

Wind and percussion principals must enroll in MUS 3731 UTSA University Band, MUS 3751 UTSA Symphonic Band, or MUS 3821 UTSA Wind Ensemble every semester.

Guitar and keyboard principals must enroll in MUS 3761 UTSA Orchestra, MUS 3731 UTSA University Band, MUS 3751 UTSA Symphonic Band, or MUS 3821 UTSA Wind Ensemble to fulfill the assigned large ensemble requirement.

2. Students pursuing the All-Level Choral Track

Voice principals must enroll in MUS 3721 UTSA Men's Glee Club, MUS 3781 Concert Choir, or MUS 3811 Women's Choir every semester.

Guitar and keyboard principals must enroll in MUS 3721 UTSA Men's Glee Club, MUS 3781 Concert Choir, or MUS 3811 Women's Choir to fulfill the assigned large ensemble requirement.

C. Music Education Requirements 19

1. Students pursuing the All-Level Instrumental track

MUS 1511	Music Performance-Secondary Instrument (two semesters) ² or MUS 445:Marching Band Techniques
MUS 3153	Conducting II (Instrumental)
MUS 3232	Wind and Percussion Literature ¹ or MUS 324: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 Elementary Music
MUS 3471	String Instruments
MUS 3481	Percussion Instruments
MUS 4532	Music Pedagogy ¹

2. Students pursuing the All-Level Choral track

MUS 2601	Diction Survey
MUS 3153	Conducting II (Choral)
MUS 3272	Choral Literature (Renaissance to Baroque) ³
MUS 3272	Choral Literature (Classical to 20th Century)
MUS 3312	Music Technology for Music Educators
MUS 3453	Teaching Elementary Music
MUS 3463	Teaching Secondary Vocal Music
MUS 3491	Instrumental Techniques for Voice Majors
MUS 4531	Vocal Pedagogy I
MUS 4541	Vocal Pedagogy II

D. Professional Education Requirements 24

IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society
EDU 2103	Social Foundations for Education in a Diverse U.S. Society
EDP 3203	Learning and Development in the Secondary School Adolescent
C&I 4203	Models of Teaching in the Content Areas of the Secondary School
C&I 4213	Approaches to Teaching Music ⁴
C&I 4716	Clinical Teaching: All Level EC–12
LTED 3773	Reading and Writing Across the Disciplines-Grades 7–12

E. In order to continue in the Music Studies concentration at the upper-level, students must successfully complete a pre-certification interview with members of the Music Studies Committee.

F. Students pursuing the Music Studies concentration must successfully complete competency tests to receive certification as specified by the Texas State Board for Educator Certification.

Total Credit Hours 59

¹ Guitar and keyboard principals should select the literature and pedagogy courses that correspond with their desired public school teaching position.

² String principals should enroll in two semesters of MUS 1511 Music Performance-Secondary Instrument (one semester of an upper-string instrument and one semester of a lower-string instrument, neither of which is the same as the principal instrument). Guitar and keyboard principals must also enroll in two semesters of MUS 1511 Music Performance-Secondary Instrument, both on a single secondary instrument (within strings, winds, or percussion). Wind and percussion principals are required to enroll in MUS 4452 Marching Band Techniques.

³ Guitar principals should substitute two semesters of MUS 1511 Music Performance-Secondary Instrument (voice).

⁴ With music advisor approval, string, wind, and percussion students who are interested in teaching elementary general music may take C&I 4213 Approaches to Teaching Music (choral) instead of C&I 4213 Approaches to Teaching Music (instrumental). These students will complete half of their student teaching in an elementary general music placement and half in a middle school band/orchestra placement.

Course Sequence Guide for B.M. with a Music Studies Concentration

This course sequence guide is designed to assist students in completing their UTSA undergraduate degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the Department of Music and their academic advisor 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 Music in Music Studies (Instrumental) – Five-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1521	Class Piano 1 ¹	1
MUS 3761	UTSA Orchestra or MUS 3731 or UTSA University Band or MUS 3751 or UTSA Symphonic Band or MUS 3821 or UTSA Wind Ensemble	1
MUS 3801	UTSA Athletic Band (only required of wind and percussion principals) ²	1
WRC 1013	Freshman Composition I (Q) (core)	3
	Credit Hours	14

Spring

IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2

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MUS 1542	Music Performance-Private Instruction I	2
MUS 1621	Class Piano 2 ¹	1
MUS 3761	UTSA Orchestra	1
or MUS 3731	or UTSA University Band	
or MUS 3751	or UTSA Symphonic Band	
or MUS 3821	or UTSA Wind Ensemble	
WRC 1023	Freshman Composition II (Q) (core)	3
University core math course		3
Credit Hours		17

Summer

University core course		3
University core course		3
Credit Hours		6

Second Year

Fall

MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2421	Class Piano 3	1
MUS 2542	Music Performance-Private Instruction II	2
MUS 3431	Woodwind Instruments	1
MUS 3453	Teaching Elementary Music	3
MUS 3761	UTSA Orchestra	1
or MUS 3731	or UTSA University Band	
or MUS 3751	or UTSA Symphonic Band	
or MUS 3821	or UTSA Wind Ensemble	
MUS 3801	UTSA Athletic Band (only required of wind and percussion principals) ²	1
University core course		3
Credit Hours		15

Spring

EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
MUS 1511	Music Performance-Secondary Instrument ³	1
MUS 2112	Aural Skills IV	2
MUS 2162	Basic Skills of Music IV	2
MUS 2243	World Music in Society (core and major)	3
MUS 2521	Class Piano 4	1
MUS 2542	Music Performance-Private Instruction II	2
MUS 3471	String Instruments	1
MUS 3761	UTSA Orchestra	1
or MUS 3731	or UTSA University Band	
or MUS 3751	or UTSA Symphonic Band	
or MUS 3821	or UTSA Wind Ensemble	
Credit Hours		15

Summer

University core course		3
Credit Hours		3

Third Year

Fall

EDP 3203	Learning and Development in the Secondary School Adolescent	3
MUS 2403	Conducting I	3
MUS 3481	Percussion Instruments	1
MUS 3532	Music Performance-Private Instruction III	2
MUS 3761	UTSA Orchestra ²	1
or MUS 3731	or UTSA University Band	
or MUS 3751	or UTSA Symphonic Band	
or MUS 3821	or UTSA Wind Ensemble	
MUS 4452	Marching Band Techniques ⁴	2
University core course		3
Credit Hours		14

Spring

MUS 3153	Conducting II	3
MUS 3232	Wind and Percussion Literature	2
or MUS 3242	or String Literature	
MUS 3401	Brass Instruments	1
MUS 3421	Vocal Techniques for Instrumental Majors	1
MUS 3532	Music Performance-Private Instruction III	2
MUS 3761	UTSA Orchestra ²	1
or MUS 3731	or UTSA University Band	
or MUS 3751	or UTSA Symphonic Band	
or MUS 3821	or UTSA Wind Ensemble	
University core course		3
Credit Hours		12

Summer

University core course		3
University core course		3
University core course		3
Credit Hours		9

Fourth Year

Fall

C&I 4213	Approaches to Teaching Music	3
MUS 1511	Music Performance-Secondary Instrument ³	1
MUS 3223	Music in Civilization II	3
MUS 3413	Psychology of Music	3
MUS 3761	UTSA Orchestra ²	1
or MUS 3731	or UTSA University Band	
or MUS 3751	or UTSA Symphonic Band	
or MUS 3821	or UTSA Wind Ensemble	
MUS 4532	Music Pedagogy	2
Credit Hours		11

Spring

C&I 4203	Models of Teaching in the Content Areas of the Secondary School	3
LTED 3773	Reading and Writing Across the Disciplines-Grades 7-12	3
MUS 3213	Music in Civilization I	3

MUS 3312	Music Technology for Music Educators	2
MUS 3761 or MUS 3731 or MUS 3751 or MUS 3821	UTSA Orchestra ² or UTSA University Band or UTSA Symphonic Band or UTSA Wind Ensemble	1
Credit Hours		11
Fifth Year		
Fall		
C&I 4716	Clinical Teaching: All Level EC-12	6
Credit Hours		6
Total Credit Hours		133

- ¹ Keyboard principals must replace Class Piano 1-4 with MUS 1552 Functional Piano for Keyboard Principals and 2 credits chosen from MUS 1511 Music Performance-Secondary Instrument and MUS 1531 Class Voice. Non-keyboard principals who test out of 1-4 semesters of Class Piano must replace those credits with an equivalent number of credits from MUS 1511 Music Performance-Secondary Instrument and MUS 1531 Class Voice.
- ² Special degree requirement. Not counted in total degree hours.
- ³ Only required of string, guitar, and keyboard principals.
- ⁴ Only required of wind and percussion principals.

Bachelor of Music in Music Studies (Choral) – Five-Year Academic Plan

First Year		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1521	Class Piano 1 ¹	1
MUS 2601	Diction Survey	1
MUS 3781 or MUS 3721 or MUS 3811	Concert Choir or UTSA Men's Glee Club or Women's Choir	1
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15
Spring		
IDS 2013	Introduction to Learning and Teaching in a Culturally Diverse Society	3
MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Music Performance-Private Instruction I	2
MUS 1621	Class Piano 2 ¹	1
MUS 3781 or MUS 3721 or MUS 3811	Concert Choir or UTSA Men's Glee Club or Women's Choir	1

WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		14

Summer		
University core course		3
University core course		3
Credit Hours		6

Second Year		
Fall		
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2421	Class Piano 3 ¹	1
MUS 2542	Music Performance-Private Instruction II	2
MUS 3781 or MUS 3721 or MUS 3811	Concert Choir or UTSA Men's Glee Club or Women's Choir	1
University core course		3
Credit Hours		14

Spring		
MUS 2112	Aural Skills IV	2
MUS 2162	Basic Skills of Music IV	2
MUS 2243	World Music in Society (core and major)	3
MUS 2403	Conducting I	3
MUS 2521	Class Piano 4 ¹	1
MUS 2542	Music Performance-Private Instruction II	2
MUS 3781 or MUS 3721 or MUS 3811	Concert Choir or UTSA Men's Glee Club or Women's Choir	1
University core course		3
Credit Hours		17

Summer		
University core course		3
University core course		3
Credit Hours		6

Third Year		
Fall		
EDP 3203	Learning and Development in the Secondary School Adolescent	3
MUS 3272	Choral Literature ³	2
MUS 3453	Teaching Elementary Music	3
MUS 3532	Music Performance-Private Instruction III	2
MUS 3781 or MUS 3721 or MUS 3811	Concert Choir ² or UTSA Men's Glee Club or Women's Choir	1
University core course		3
Credit Hours		13

Spring		
MUS 3153	Conducting II	3
MUS 3413	Psychology of Music	3

MUS 3463	Teaching Secondary Vocal Music	3
MUS 3491	Instrumental Techniques for Voice Majors	1
MUS 3532	Music Performance-Private Instruction III	2
MUS 3781 or MUS 3721 or MUS 3811	Concert Choir ² or UTSA Men's Glee Club or Women's Choir	1
University core course		3
Credit Hours		15

Summer

University core course		3
University core course		3
Credit Hours		6

Fourth Year

Fall

C&I 4213	Approaches to Teaching Music	3
MUS 3272	Choral Literature ³	2
MUS 3213	Music in Civilization I	3
MUS 3781 or MUS 3721 or MUS 3811	Concert Choir ² or UTSA Men's Glee Club or Women's Choir	1
MUS 4531	Vocal Pedagogy I	1
MUS 3532	Music Performance-Private Instruction III	2
LTED 3773	Reading and Writing Across the Disciplines-Grades 7–12	3
Credit Hours		12

Spring

C&I 4203	Models of Teaching in the Content Areas of the Secondary School	3
MUS 3781 or MUS 3721 or MUS 3811	Concert Choir ² or UTSA Men's Glee Club or Women's Choir	1
MUS 3223	Music in Civilization II	3
MUS 3312	Music Technology for Music Educators	2
MUS 4541	Vocal Pedagogy II ⁴	1
MUS 3532	Music Performance-Private Instruction III	2
Credit Hours		9

Fifth Year

Fall

C&I 4716	Clinical Teaching: All Level EC–12	6
Credit Hours		6
Total Credit Hours		133

¹ Keyboard principals must replace Class Piano 1-4 with MUS 1552 Functional Piano for Keyboard Principals and 2 credits chosen from MUS 1511 Music Performance-Secondary Instrument and MUS 1531 Class Voice. Non-keyboard principals who test out of 1-4 semesters of Class Piano must replace those credits with an equivalent number of credits from MUS 1511 Music Performance-Secondary Instrument and MUS 1531 Class Voice.

² Special degree requirement. Not counted in total degree hours.
³ Guitar principals must substitute two semesters of MUS 1511 Music Performance-Secondary Instrument (voice) for one of the semesters of MUS 3272 Choral Literature. This substitution should be made for Choral Literature I (Renaissance to Baroque).

Composition Emphasis

All candidates for the Composition emphasis must fulfill the Music Core Requirements (32 semester credit hours), as well as the following course requirements for this emphasis (56 semester credit hours).

Students are accepted to the Composition emphasis by audition at the end of the first year of study. For this audition, students will submit a portfolio of works composed while enrolled in MUS 1141 Beginning Composition.

A. Principal Instrument Private Lessons 12

MUS 1512	Music Performance-Private Instruction
MUS 1542	Music Performance-Private Instruction I
MUS 2542	Music Performance-Private Instruction II (repeated for a total of 4 credit hours)
MUS 3532	Music Performance-Private Instruction III (repeated for a total of 4 credit hours)

All students must pass an extended jury at the end of their last semester of enrollment in MUS 3532 Music Performance-Private Instruction III.

B. Performance Ensembles 8

As a special degree requirement, students pursuing the Composition emphasis are required to enroll in an ensemble every semester except the semester of the Senior Recital.

Assigned major ensemble (6 semester credit hours), selected from MUS 3721 UTSA Men's Glee Club, MUS 3731 UTSA University Band, MUS 3751 UTSA Symphonic Band, MUS 3761 UTSA Orchestra, MUS 3781 Concert Choir, MUS 3811 Women's Choir, and MUS 3821 UTSA Wind Ensemble.

MUS 4581	Chamber Music (New Music Lab; repeated for a total of 2 credit hours)
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C. Composition Lessons and Recital 12

MUS 1141	Beginning Composition
MUS 2141	Composition II (repeated for a total of 2 credit hours)
MUS 3162	Composition III (repeated for a total of 4 credit hours)
MUS 4142	Composition IV (repeated for a total of 4 credit hours)
MUS 4561	Senior Recital

D. Upper-level Music Theory, History, and Technology 15

Select 15 semester credit hours from the following:

MUS 3013	Digital Music Production
MUS 3123	Introduction to Electronic and Computer Music
MUS 3133	Analysis of Twentieth-Century Music
MUS 3143	Orchestration
MUS 3263	Music Since 1900
MUS 4113	Counterpoint
MUS 4163	Topics in Music Theory

E. Electives 9

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 are German, French, or Italian.

Total Credit Hours 56

Course Sequence Guide for B.M. with a Composition Emphasis

This course sequence guide is designed to assist students in completing their UTSA undergraduate degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the Department of Music and their academic advisor 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 Music in Composition – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1521	Class Piano 1 ¹	1
WRC 1013	Freshman Composition I (Q) (core)	3
Assigned major ensemble		1
	Credit Hours	14

Spring

MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1141	Beginning Composition	1
MUS 1542	Music Performance-Private Instruction I	2
MUS 1621	Class Piano 2 ¹	1
WRC 1023	Freshman Composition II (Q) (core)	3
Assigned major ensemble		1
University core math course		3
	Credit Hours	15

Summer

University core course		3
	Credit Hours	3

Second Year

Fall		
MUS 2102	Aural Skills III	2
MUS 2141	Composition II	1
MUS 2152	Basic Skills of Music III	2
MUS 2403	Conducting I	3
MUS 2421	Class Piano 3 ¹	1

MUS 2542	Music Performance-Private Instruction II	2
Assigned major ensemble		1
University core course		3
	Credit Hours	15

Spring

MUS 2112	Aural Skills IV	2
MUS 2141	Composition II	1
MUS 2162	Basic Skills of Music IV	2
MUS 2243	World Music in Society (core and major)	3
MUS 2521	Class Piano 4 ¹	1
MUS 2542	Music Performance-Private Instruction II	2
Assigned major ensemble		1
University core course		3
	Credit Hours	15

Summer

University core course		3
	Credit Hours	3

Third Year

Fall

MUS 3162	Composition III	2
MUS 3213	Music in Civilization I	3
or MUS 3223	or Music in Civilization II	
MUS 3532	Music Performance-Private Instruction III	2
Assigned major ensemble		1
Elective		3
Upper-division music theory/history/technology course		3
University core course		3
	Credit Hours	17

Spring

MUS 3162	Composition III	2
MUS 3223	Music in Civilization II	3
or MUS 3213	or Music in Civilization I	
MUS 3532	Music Performance-Private Instruction III	2
MUS 4581	Chamber Music	1
Assigned major ensemble		1
Upper-division music theory/history/technology course		3
University core course		3
	Credit Hours	15

Summer

University core course		3
	Credit Hours	3

Fourth Year

Fall

MUS 3413	Psychology of Music	3
MUS 4142	Composition IV	2
MUS 4581	Chamber Music ²	1
Elective		3
Upper-division music theory/history/technology course		3

University core course	3
Credit Hours	15
Spring	
MUS 4142 Composition IV	2
MUS 4561 Senior Recital	1
Elective	3
Upper-division music theory/history/technology course	3
Upper-division music theory/history/technology course	3
University core course	3
Credit Hours	15
Total Credit Hours	130

¹ Keyboard principals must replace Class Piano 1-4 with MUS 1552 Functional Piano for Keyboard Principals and 2 credits chosen from MUS 1511 Music Performance-Secondary Instrument and MUS 1531 Class Voice. Non-keyboard principals who test out of 1-4 semesters of Class Piano must replace those credits with an equivalent number of credits from MUS 1511 Music Performance-Secondary Instrument and MUS 1531 Class Voice.

Music Performance Emphasis

All candidates for the Music Performance emphasis must fulfill the Music Core Requirements (32 semester credit hours), as well as the following course requirements for this emphasis (56 semester credit hours).

A. Principal Instrument Private Lessons and Recital 21

MUS 1512 Music Performance-Private Instruction	
MUS 1542 Music Performance-Private Instruction I	
MUS 2542 Music Performance-Private Instruction II (repeated for a total of 4 credit hours)	
MUS 3543 Music Performance-Private Instruction IV (repeated for a total of 6 credit hours)	
MUS 4543 Music Performance-Private Instruction V (repeated for a total of 6 credit hours)	
MUS 4561 Senior Recital	

All students must perform and successfully pass a 30-minute qualifying recital prior to being admitted into the Music Performance emphasis and enrolling in MUS 3543 Music Performance-Private Instruction IV.

B. Performance Ensembles 8

As a special degree requirement, students pursuing the Music Performance emphasis are required to enroll in an ensemble every semester. For voice, string, wind, and percussion principals, that ensemble must be their assigned major ensemble. Guitar, piano, and organ principals are exempt from ensemble enrollment during the semester of MUS 4561 Senior Recital. See Department of Music Student Handbook for details.

Voice principals must enroll in six semesters of MUS 3721 UTSA Men's Glee Club, MUS 3781 Concert Choir, or MUS 3811 Women's Choir and two semesters of MUS 3791 Lyric Theatre.

String principals must enroll in six semesters of MUS 3761 UTSA Orchestra and two semesters of MUS 4581 Chamber Music.

Wind and percussion principals must enroll in six semesters of MUS 3731 UTSA University Band, MUS 3751 UTSA Symphonic Band, or MUS 3821 UTSA Wind Ensemble and two semesters of MUS 4581 Chamber Music.

Guitar principals must enroll in four semesters of an assigned major ensemble (MUS 3721, MUS 3731, MUS 3751, MUS 3761, MUS 3781, MUS 3811, or MUS 3821) and four semesters of MUS 4581 Guitar Ensemble.

Piano principals must enroll in 2 semesters of an assigned major ensemble (MUS 3721, MUS 3731, MUS 3751, MUS 3761, MUS 3781, MUS 3811, or MUS 3821), 2 semesters of MUS 4581 Chamber Music, and 4 semesters of MUS 2501 Accompanying (2 vocal and 2 instrumental).

Organ principals must enroll in four semesters of an assigned major ensemble (MUS 3721, MUS 3731, MUS 3751, MUS 3761, MUS 3781, MUS 3811, or MUS 3821) and four semesters of MUS 4581 Chamber Music.

C. Music Technology and Industry 3

Select 3 semester credit hours from the following:

MUS 3013 Digital Music Production	
MUS 3103 Audio Technology I	
MUS 3613 Entrepreneurship in Music	

With advisor approval, voice principals may substitute 3 credit hours of electives.

D. Music Pedagogy 2

Select 2 semester credit hours, based on principal instrument, from the following:

MUS 4522 Music Pedagogy for Performance Majors	
MUS 4531 Vocal Pedagogy I	
MUS 4541 Vocal Pedagogy II	

E. Music Literature 4

Select the appropriate 4 semester credit hours, based on principal instrument, from the following:

MUS 2232 Introduction to Guitar Literature	
MUS 3332 Advanced Guitar Literature	
MUS 3282 Vocal Literature	
MUS 3292 Operatic Literature	
MUS 3322 Keyboard Literature (repeated for a total of 4 credit hours)	
MUS 3342 Wind and Percussion Literature for Performance Majors (Solo/Chamber)	
MUS 3342 Wind and Percussion Literature for Performance Majors (Orchestral)	
MUS 3352 String Literature for Performance Majors (Solo/Chamber)	
MUS 3352 String Literature for Performance Majors (Orchestral)	

F. Upper-level Music Theory 6

Select 6 semester credit hours from the following:

MUS 3133 Analysis of Twentieth-Century Music	
MUS 3143 Orchestration ¹	
MUS 4113 Counterpoint	
MUS 4163 Topics in Music Theory	

G. Electives or Foreign Languages 12

Guitar, keyboard, string, wind, and percussion principals should select 12 semester credit hours of electives.

Voice principals must select the following 12 hours of diction and language courses:

MUS 3511 Diction for Singers (English)	
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MUS 3511	Diction for Singers (French)	
MUS 3511	Diction for Singers (German)	
MUS 3511	Diction for Singers (Italian)	
FRN 1014	Elementary French I ²	
	or GER 1014 Elementary German I	
	or ITL 1014 Elementary Italian I	
FRN 1024	Elementary French II ³	
	or GER 1024 Elementary German II	
	or ITL 1024 Elementary Italian II	
Total Credit Hours		56

- ¹ String, wind, and percussion principals must select MUS 3143 Orchestration.
- ² Must be a different language than that chosen to fulfill the Core Curriculum requirement in Language, Philosophy, and Culture.
- ³ Must be the second semester of one of the same languages chosen to fulfill the Elementary Language I requirement.

Course Sequence Guide for a B.M. with Performance Emphasis

This course sequence guide is designed to assist students in completing their UTSA undergraduate degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the Department of Music and their academic advisor 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 Music in Performance (Orchestral Instrument) – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1521	Class Piano 1 ¹	1
MUS 3761	UTSA Orchestra	1
	or MUS 3731 or UTSA University Band	
	or MUS 3751 or UTSA Symphonic Band	
	or MUS 3821 or UTSA Wind Ensemble	
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		14

Spring

MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Music Performance-Private Instruction I	2
MUS 1621	Class Piano 2 ¹	1

MUS 3761	UTSA Orchestra	1
	or MUS 3731 or UTSA University Band	
	or MUS 3751 or UTSA Symphonic Band	
	or MUS 3821 or UTSA Wind Ensemble	
WRC 1023	Freshman Composition II (Q) (core)	3
University core math course		3
Credit Hours		14

Summer

University core course		3
Credit Hours		3

Second Year

Fall

MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2403	Conducting I	3
MUS 2421	Class Piano 3 ¹	1
MUS 2542	Music Performance-Private Instruction II	2
MUS 3761	UTSA Orchestra	1
	or MUS 3731 or UTSA University Band	
	or MUS 3751 or UTSA Symphonic Band	
	or MUS 3821 or UTSA Wind Ensemble	
University core course		3
Credit Hours		14

Spring

MUS 2112	Aural Skills IV	2
MUS 2162	Basic Skills of Music IV	2
MUS 2243	World Music in Society (core and major)	3
MUS 2521	Class Piano 4 ¹	1
MUS 2542	Music Performance-Private Instruction II	2
MUS 3761	UTSA Orchestra	1
	or MUS 3731 or UTSA University Band	
	or MUS 3751 or UTSA Symphonic Band	
	or MUS 3821 or UTSA Wind Ensemble	
University core course		3
Credit Hours		14

Summer

University core course		3
University core course		3
Credit Hours		6

Third Year

Fall

MUS 3013	Digital Music Production	3
	or MUS 3103 or Audio Technology I	
	or MUS 3613 or Entrepreneurship in Music	
MUS 3213	Music in Civilization I	3
	or MUS 3223 or Music in Civilization II	
MUS 3543	Music Performance-Private Instruction IV	3
MUS 3761	UTSA Orchestra	1
	or MUS 3731 or UTSA University Band	
	or MUS 3751 or UTSA Symphonic Band	
	or MUS 3821 or UTSA Wind Ensemble	

Department of Music

MUS 4581	Chamber Music	1
Elective		3
University core course		3
Credit Hours		17

Spring

MUS 3143	Orchestration	3
MUS 3223 or MUS 3213	Music in Civilization II or Music in Civilization I	3
MUS 3543	Music Performance-Private Instruction IV	3
MUS 3761 or MUS 3731 or MUS 3751 or MUS 3821	UTSA Orchestra or UTSA University Band or UTSA Symphonic Band or UTSA Wind Ensemble	1
Elective		3
University core course		3
Credit Hours		16

Summer

University core course		3
Credit Hours		3

Fourth Year

Fall

MUS 3342 or MUS 3352	Wind and Percussion Literature for Performance Majors or String Literature for Performance Majors	2
MUS 3413	Psychology of Music	3
MUS 3761 or MUS 3731 or MUS 3751 or MUS 3821	UTSA Orchestra ² or UTSA University Band or UTSA Symphonic Band or UTSA Wind Ensemble	1
MUS 4532	Music Pedagogy (Strings or Wind/ Percussion)	2
MUS 4543	Music Performance-Private Instruction V	3
MUS 4581	Chamber Music	1
Elective		3
Credit Hours		14

Spring

MUS 3342 or MUS 3352	Wind and Percussion Literature for Performance Majors or String Literature for Performance Majors	2
MUS 3761 or MUS 3731 or MUS 3751 or MUS 3821	UTSA Orchestra ² or UTSA University Band or UTSA Symphonic Band or UTSA Wind Ensemble	1
MUS 4543	Music Performance-Private Instruction V	3
MUS 4561	Senior Recital	1
Elective		3
University core course		3

Upper-division music theory course	3
Credit Hours	15
Total Credit Hours	130

¹ Students who test out of 1-4 semesters of Class Piano must replace those credits with an equivalent number of credits from MUS 1511 Music Performance-Secondary Instrument and MUS 1531 Class Voice.

² Special degree requirement. Credit hours not counted toward degree.

Bachelor of Music in Performance (Keyboard) – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1531	Class Voice	1
WRC 1013	Freshman Composition I (Q) (core)	3
Assigned major ensemble		1
Credit Hours		14

Spring

MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Music Performance-Private Instruction I	2
WRC 1023	Freshman Composition II (Q) (core)	3
Assigned major ensemble		2
University core math course		3
Credit Hours		14

Summer

University core course	3
Credit Hours	3

Second Year

Fall

MUS 1511	Music Performance-Secondary Instrument	1
MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2403	Conducting I	3
MUS 2501	Accompanying	1
MUS 2542	Music Performance-Private Instruction II	2
University core course		3
Credit Hours		14

Spring

MUS 1552	Functional Piano for Keyboard Principals	2
MUS 2112	Aural Skills IV	2
MUS 2162	Basic Skills of Music IV	2

MUS 2243	World Music in Society (core and major)	3
MUS 2501	Accompanying	1
MUS 2542	Music Performance-Private Instruction II	2
University core course		3
Credit Hours		15

Summer

University core course		3
University core course		3
Credit Hours		6

Third Year

Fall

MUS 2501	Accompanying	1
MUS 3013 or MUS 3103 or MUS 3613	Digital Music Production or Audio Technology I or Entrepreneurship in Music	3
MUS 3213 or MUS 3223	Music in Civilization I or Music in Civilization II	3
MUS 3322	Keyboard Literature	2
MUS 3543	Music Performance-Private Instruction IV	3
University core course		3
Credit Hours		15

Spring

MUS 2501	Accompanying	1
MUS 3223 or MUS 3213	Music in Civilization II or Music in Civilization I	3
MUS 3322	Keyboard Literature	2
MUS 3543	Music Performance-Private Instruction IV	3
Elective		3
Upper-division theory course		3
Credit Hours		15

Summer

University core course		3
Credit Hours		3

Fourth Year

Fall

MUS 3413	Psychology of Music	3
MUS 4532	Music Pedagogy	2
MUS 4543	Music Performance-Private Instruction V	3
MUS 4581	Chamber Music	1
Elective		3
University core course		3
Credit Hours		15

Spring

MUS 4543	Music Performance-Private Instruction V	3
MUS 4561	Senior Recital	1
Elective		3
Elective		3

University core course	3
Upper-division theory course	3
Credit Hours	16
Total Credit Hours	130

Bachelor of Music in Performance (Voice) – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1521	Class Piano 1 ¹	1
MUS 3511	Diction for Singers	1
MUS 3781 or MUS 3811 or MUS 3721	Concert Choir or Women's Choir or UTSA Men's Glee Club	1
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15

Spring

MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Music Performance-Private Instruction I	2
MUS 1621	Class Piano 2 ¹	1
MUS 3511	Diction for Singers	1
MUS 3781 or MUS 3811 or MUS 3721	Concert Choir or Women's Choir or UTSA Men's Glee Club	1
WRC 1023	Freshman Composition II (Q) (core)	3
University core math course		3
Credit Hours		15

Summer

University core course		3
University core course		3
Credit Hours		6

Second Year

Fall

MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2243	World Music in Society (core and major)	3
MUS 2421	Class Piano 3 ¹	1
MUS 2542	Music Performance-Private Instruction II	2
MUS 3511	Diction for Singers	1
MUS 3781 or MUS 3811 or MUS 3721	Concert Choir or Women's Choir or UTSA Men's Glee Club	1
University core course		3
Credit Hours		15

Spring

MUS 2112	Aural Skills IV	2
MUS 2162	Basic Skills of Music IV	2
MUS 2403	Conducting I	3
MUS 2521	Class Piano 4 ¹	1
MUS 2542	Music Performance-Private Instruction II	2
MUS 3511	Diction for Singers	1
MUS 3781 or MUS 3811 or MUS 3721	Concert Choir or Women's Choir or UTSA Men's Glee Club	1
University core course		3
Credit Hours		15

Summer

University core course		3
University core course		3
Credit Hours		6

Third Year

Fall

ITL 1014 or FRN 1014 or GER 1014	Elementary Italian I () ² or Elementary French I or Elementary German I	4
MUS 3213 or MUS 3223	Music in Civilization I or Music in Civilization II	3
MUS 3543	Music Performance-Private Instruction IV	3
MUS 3781 or MUS 3811 or MUS 3721	Concert Choir or Women's Choir or UTSA Men's Glee Club	1
MUS 3791	Lyric Theatre	1
MUS 4531	Vocal Pedagogy I	1
Credit Hours		13

Spring

MUS 3223 or MUS 3213	Music in Civilization II or Music in Civilization I	3
MUS 3413	Psychology of Music	3
MUS 3543	Music Performance-Private Instruction IV	3
MUS 3781 or MUS 3811 or MUS 3721	Concert Choir or Women's Choir or UTSA Men's Glee Club	1
MUS 3791	Lyric Theatre	1
MUS 4541	Vocal Pedagogy II	1
University core course		3
Credit Hours		15

Summer

University core course		3
Credit Hours		3

Fourth Year

Fall

FRN 1014 or ITL 1014 or GER 1014	Elementary French I ⁴ or Elementary Italian I or Elementary German I	4
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MUS 3013 or MUS 3103 or MUS 3613	Digital Music Production or Audio Technology I or Entrepreneurship in Music	3
MUS 3292	Operatic Literature	2
MUS 3781 or MUS 3811 or MUS 3721	Concert Choir ³ or Women's Choir or UTSA Men's Glee Club	1
MUS 4543	Music Performance-Private Instruction V	3
Upper-division music theory course		3
Credit Hours		15

Spring

FRN 1024 or GER 1024 or ITL 1024	Elementary French II ⁴ or Elementary German II or Elementary Italian II	4
MUS 3282	Vocal Literature	2
MUS 3781 or MUS 3811 or MUS 3721	Concert Choir ³ or Women's Choir or UTSA Men's Glee Club	1
MUS 4543	Music Performance-Private Instruction V	3
MUS 4561	Senior Recital	1
Upper-division theory course		3
Credit Hours		12
Total Credit Hours		130

- 1 Students who test out of 1-4 semesters of Class Piano must replace those credits with an equivalent number of credits from MUS 1511 Music Performance-Secondary Instrument.
- 2 Students should select one of these courses to fulfill the Core Curriculum requirement in Language, Philosophy, and Culture and part of the foreign language requirement within the Performance emphasis for voice principals. Credit hours will be counted in the Core Curriculum requirement.
- 3 Special degree requirement. Not counted in total degree hours.
- 4 Students should select two semesters of a different language than that which was chosen to fulfill the Core Curriculum requirement in Language, Philosophy, and Culture.

Bachelor of Music in Performance (Guitar) – Four-Year Academic Plan

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1521	Class Piano 1 ¹	1
WRC 1013	Freshman Composition I (Q) (core)	3
Assigned major ensemble		1
Credit Hours		14

Spring

MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2

MUS 1542	Music Performance-Private Instruction I	2
MUS 1621	Class Piano 2 ¹	1
WRC 1023	Freshman Composition II (Q) (core)	3
Assigned major ensemble		1
University core math course		3
Credit Hours		14

Summer

University core course		3
Credit Hours		3

Second Year

Fall

MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2232	Introduction to Guitar Literature	2
MUS 2421	Class Piano 3 ¹	1
MUS 2542	Music Performance-Private Instruction II	2
Assigned major ensemble		1
University core course		3
University core course		3
Credit Hours		16

Spring

MUS 2112	Aural Skills IV	2
MUS 2162	Basic Skills of Music IV	2
MUS 2243	World Music in Society (core and major)	3
MUS 2521	Class Piano 4 ¹	1
MUS 2542	Music Performance-Private Instruction II	2
Assigned major ensemble		1
University core course		3
Credit Hours		14

Summer

University core course		3
Credit Hours		3

Third Year

Fall

MUS 2403	Conducting I	3
MUS 3213 or MUS 3223	Music in Civilization I or Music in Civilization II	3
MUS 3332	Advanced Guitar Literature	2
MUS 3543	Music Performance-Private Instruction IV	3
MUS 4581	Chamber Music (Guitar Ensemble)	1
University core course		3
Credit Hours		15

Spring

MUS 3223 or MUS 3213	Music in Civilization II or Music in Civilization I	3
MUS 3543	Music Performance-Private Instruction IV	3
MUS 4581	Chamber Music (Guitar Ensemble)	1

Elective	3
University core course	3
Upper-division theory course	3
Credit Hours	16

Summer

University core course	3
Credit Hours	3

Fourth Year

Fall

MUS 3013 or MUS 3103 or MUS 3613	Digital Music Production or Audio Technology I or Entrepreneurship in Music	3
MUS 4532	Music Pedagogy	2
MUS 4543	Music Performance-Private Instruction V	3
MUS 4581	Chamber Music (Guitar Ensemble)	1
Elective		3
University core course		3
Upper-division theory course		3
Credit Hours		18

Spring

MUS 3413	Psychology of Music	3
MUS 4543	Music Performance-Private Instruction V	3
MUS 4561	Senior Recital	1
MUS 4581	Chamber Music (Guitar Ensemble)	1
Elective		3
Elective		3
Credit Hours		14
Total Credit Hours		130

¹ Students who test out of 1-4 semesters of Class Piano must replace those credits with an equivalent number of credits from MUS 1511 Music Performance-Secondary Instrument and MUS 1531 Class Voice.

Music Marketing Emphasis

All candidates for the Music Marketing emphasis must fulfill the Music Core Requirements (32 semester credit hours), as well as the following course requirements for this emphasis (56 semester credit hours).

A. Principal Instrument Private Lessons 12

MUS 1512	Music Performance-Private Instruction	
MUS 1542	Music Performance-Private Instruction I	
MUS 2542	Music Performance-Private Instruction II (repeated for a total of 4 credit hours)	
MUS 3532	Music Performance-Private Instruction III (repeated for a total of 4 credit hours)	

All students must pass an extended jury at the end of their last semester of enrollment in MUS 3532 Music Performance-Private Instruction III.

B. Performance Ensembles 8

As a special degree requirement, students pursuing the Music Marketing emphasis are required to enroll in an ensemble every semester except the semester of the Music Marketing Internship. See Department of Music Student Handbook for details.

Assigned major ensemble (6 credit hours), selected from MUS 3721 UTSA Men's Glee Club, MUS 3731 UTSA University Band, MUS 3751 UTSA Symphonic Band, MUS 3761 UTSA Orchestra, MUS 3781 Concert Choir, MUS 3811 Women's Choir, and MUS 3821 UTSA Wind Ensemble.

MUS 4581 Chamber Music (repeated for a total of 2 credit hours)

C. Required Music, Accounting, and Marketing Courses 18

ACC 2013 Principles of Accounting I

MKT 3013 Principles of Marketing

MUS 2263 Introduction to the Music Industry

MUS 3613 Entrepreneurship in Music

MUS 4803 Seminar in Music Marketing

MUS 4933 Music Marketing Internship

D. Additional Approved Courses 18

Select 18 semester credit hours from the following (of the selected 18 hours, 9 must be upper-division and 6 must be non-music):

BLW 3013 Business Law

COM 2113 Public Speaking

COM 2343 Introduction to Mass Communication

CS 1063 Introduction to Computer Programming I

CS 1143 Web Design

ECO 2023 Introductory Microeconomics

ENT 4123 Commercialization and Enterprise Planning

FIN 3003 Survey of Finance

GBA 2013 Legal, Social and Ethical Issues in Business

MGT 3003 Business Communication and Professional Development

MGT 3013 Introduction to Organization Theory, Behavior, and Management

MKT 3043 Advertising

MKT 3063 Personal Selling

MKT 3113 Retailing

MUS 2273 Introduction to Music and Art Nonprofit Organizations

MUS 3013 Digital Music Production

MUS 3103 Audio Technology I

MUS 3163 Audio Technology II

MUS 4433 Multimedia Production

MUS 4953 Special Studies in Music

Total Credit Hours 56

Course Sequence Guide for B.M. with a Music Marketing Emphasis

This course sequence guide is designed to assist students in completing their UTSA undergraduate degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the Department of Music and their academic advisor 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 Music in Music Marketing – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1521	Class Piano 1 ¹	1
WRC 1013	Freshman Composition I (Q) (core)	3
Assigned major ensemble		1
Credit Hours		14

Spring

MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Music Performance-Private Instruction I	2
MUS 1621	Class Piano 2 ¹	1
WRC 1023	Freshman Composition II (Q) (core)	3
Assigned major ensemble		1
University core math course		3
Credit Hours		14

Summer

University core course		3
Credit Hours		3

Second Year

Fall

MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2243	World Music in Society (core and major)	3
MUS 2263 or MUS 2273	Introduction to the Music Industry or Introduction to Music and Art Nonprofit Organizations	3
MUS 2421	Class Piano 3 ¹	1
MUS 2542	Music Performance-Private Instruction II	2
Assigned major ensemble		1
Credit Hours		14

Spring

MUS 2112	Aural Skills IV	2
MUS 2162	Basic Skills of Music IV	2
MUS 2403	Conducting I	3
MUS 2521	Class Piano 4 ¹	1
MUS 2542	Music Performance-Private Instruction II	2
Assigned major ensemble		1
University core course		3
Credit Hours		14

Summer		
University core course		3
	Credit Hours	3
Third Year		
Fall		
ACC 2013	Principles of Accounting I	3
MUS 3213 or MUS 3223	Music in Civilization I or Music in Civilization II	3
MUS 3532	Music Performance-Private Instruction III	2
Assigned major ensemble		1
Selection from Additional Approved Courses		3
University core course		3
	Credit Hours	15
Spring		
MKT 3013	Principles of Marketing	3
MUS 3223 or MUS 3213	Music in Civilization II or Music in Civilization I	3
MUS 3532	Music Performance-Private Instruction III	2
MUS 3613	Entrepreneurship in Music	3
Assigned major ensemble ²		1
Selection from Additional Approved Courses		3
	Credit Hours	15
Summer		
University core course		3
	Credit Hours	3
Fourth Year		
Fall		
MUS 3413	Psychology of Music	3
MUS 4581	Chamber Music	1
Selection from Additional Approved Courses		3
Selection from Additional Approved Courses		3
University core course		3
University core course		3
	Credit Hours	16
Spring		
MUS 4581	Chamber Music (or major ensemble)	1
MUS 4803	Seminar in Music Marketing	3
Selection from Additional Approved Courses		3
Selection from Additional Approved Courses		3
University core course		3
University core course		3
	Credit Hours	16
Summer		
MUS 4933	Music Marketing Internship	3
	Credit Hours	3
	Total Credit Hours	130

¹ Keyboard principals must replace Class Piano 1-4 with MUS 1552 Functional Piano for Keyboard Principals and 2 credits chosen from MUS 1511 Music Performance-Secondary Instrument and MUS 1531 Class Voice. Non-keyboard principals who test out of 1-4 semesters of Class Piano must replace those credits with an equivalent number of credits from MUS 1511 Music Performance-Secondary Instrument and MUS 1531 Class Voice.

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 B.A. degree in Music must fulfill University Core Curriculum requirements in the same manner as other students.

All students should select MUS 2243 World Music in Society to satisfy the core requirement in Creative Arts, as well as a Music Core requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.A. degree in Music must successfully complete the following Gateway Courses with a grade of "D-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major to a field outside the Department of Music.

MUS 1102	Aural Skills I
MUS 1112	Basic Skills of Music I

Music Degree Requirements

All candidates for the B.A. degree in Music must complete the following 78 semester credit hours of required music courses.

A. Required Music Core	31
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 1521	Class Piano 1 ¹
MUS 1621	Class Piano 2 ¹
MUS 2001	Music Convocation (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 ²
MUS 3013	Digital Music Production
MUS 3213	Music in Civilization I
MUS 3223	Music in Civilization II

B. Performance Requirements

1. Principal instrument private lessons	4
MUS 1512	Music Performance-Private Instruction
MUS 1542	Music Performance-Private Instruction I
2. Performance ensembles	6
Four semesters of an assigned major ensemble, selected from MUS 3721 UTSA Men's Glee Club, MUS 3731 UTSA University Band, MUS 3751 UTSA Symphonic Band, MUS 3761 UTSA Orchestra, MUS 3781 Concert Choir, MUS 3811 Women's Choir, and MUS 3821 UTSA Wind Ensemble.	
Two semesters of any ensemble	

C. Additional Music Requirements

1. Lower-level music courses. Select 6 semester credit hours from the following courses:	6
MUS 2132	Introduction to Improvisation
MUS 2183	Jazz Skills
MUS 2263	Introduction to the Music Industry
MUS 2273	Introduction to Music and Art Nonprofit Organizations
MUS 2403	Conducting I
MUS 2633	American Roots Music
MUS 2653	Music in Culture
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 2713	History of Recorded Music
MUS 2743	Music and Film
2. Upper-level music courses. Select 9 semester credit hours from the following courses:	9
MUS 3103	Audio Technology I
MUS 3123	Introduction to Electronic and Computer Music
MUS 3133	Analysis of Twentieth-Century Music
MUS 3143	Orchestration
MUS 3153	Conducting II
MUS 3163	Audio Technology II
MUS 3263	Music Since 1900
MUS 3413	Psychology of Music
MUS 3583	Advanced Improvisation
MUS 3613	Entrepreneurship in Music
MUS 4113	Counterpoint

MUS 4153	Audio Technology III
MUS 4163	Topics in Music Theory
MUS 4183	Jazz Composition and Arranging
MUS 4263	Topics in Music History
MUS 4433	Multimedia Production

D. Non-Music Electives	24
Select 24 semester credit hours of non-music electives. At least 15 of these credit hours must be at the upper-division level.	
Total Credit Hours	80

- ¹ Keyboard principals should replace MUS 1521 Class Piano 1 and MUS 1621 Class Piano 2 with MUS 1552 Functional Piano for Keyboard Principals. Non-keyboard principals who test out of 1-2 semesters of Class Piano must replace those credits with an equivalent number of credits from MUS 1511 Music Performance-Secondary Instrument and MUS 1531 Class Voice.
- ² MUS 2243 World Music in Society should also be used to satisfy the Core Curriculum requirement in Creative Arts. The credit hours are counted in that section of the degree.

Course Sequence Guide for B.A. in Music

This course sequence guide is designed to assist students in completing their UTSA undergraduate degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the Department of Music and their academic advisor 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 Music – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Music Performance-Private Instruction	2
MUS 1521	Class Piano 1 ¹	1
WRC 1013	Freshman Composition I (Q) (core)	3
Assigned major ensemble		1
Credit Hours		14

Spring

MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Music Performance-Private Instruction I	2
MUS 1621	Class Piano 2 ¹	1
WRC 1023	Freshman Composition II (Q) (core)	3
Assigned major ensemble		1
University core math course		3
Credit Hours		14

Second Year

Fall		
MUS 2001	Music Convocation	1
MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2243	World Music in Society (core and major)	3
Assigned major ensemble		1
University core course		3
University core course		3
Credit Hours		15

Spring

MUS 2001	Music Convocation	1
MUS 2112	Aural Skills IV	2
MUS 2162	Basic Skills of Music IV	2
MUS 3013	Digital Music Production	3
Assigned major ensemble		1
Non-music elective		3
University core course		3
Credit Hours		15

Third Year

Fall		
MUS 3213	Music in Civilization I	3
or MUS 3223	or Music in Civilization II	
Selection from lower-level music courses		3
Student choice of ensemble		1
Non-music elective		3
Non-music elective		3
University core course		3
Credit Hours		16

Spring

MUS 3223	Music in Civilization II	3
or MUS 3213	or Music in Civilization I	
Selection from lower-level music courses		3
Selection from upper-level music courses		3
Non-music elective		3
Student choice of ensemble		1
University core course		3
Credit Hours		16

Fourth Year

Fall		
Selection from upper-level music courses		3
Non-music elective		3
Non-music elective		3
University core course		3
University core course		3
Credit Hours		15

Spring

Selection from upper-level music courses		3
Non-music elective		3
Non-music elective		3
University core course		3

University core course	3
Credit Hours	15
Total Credit Hours	120

¹ Keyboard principals must substitute one semester of MUS 1552 Functional Piano for Keyboard Principals.

- Minor in Dance (p. 197)
- Minor in Jazz Studies (p. 197)
- Minor in Music (p. 198)
- Minor in Music Marketing (p. 198)
- Minor in Music Technology (p. 198)

Minor in Dance

All students pursuing the Minor in Dance must complete 21 semester credit hours of dance courses:

A. Required courses:

DAN 1013	Ballet I	3
DAN 1113	Introduction to Modern Dance	3
DAN 2003	Introduction to Dance	3
DAN 2013	Ballet II	3
or DAN 2113	Modern Dance II	
DAN 2213	Jazz and Musical Theater Dance	3

B. Select two of the following courses:

DAN 3013	Ballet III	3
or DAN 3113	Modern Dance III	
DAN 3103	History of Dance	3
Total Credit Hours		21

DAN 2783 Topics in Dance may be used as an approved substitution to DAN 2013, DAN 2213 or DAN 2113.

Minor in Jazz Studies

To declare the Minor in Jazz Studies, students must interview with a Music Department advisor and submit the Declaration of Music Minor form.

All students pursuing the Minor in Jazz Studies must complete 18 semester credit hours of required courses.

MUS 2132	Introduction to Improvisation	2
MUS 2183	Jazz Skills	3
MUS 2663	History and Styles of Jazz	3
MUS 3583	Advanced Improvisation	3
MUS 3771	Jazz Ensemble (repeated for a total of 2 credit hours) ¹	2
MUS 4183	Jazz Composition and Arranging	3
MUS 4581	Chamber Music (Jazz Combos; repeated for a total of 2 credit hours) ²	2
Total Credit Hours		18

¹ Students should enroll in MUS 3771 Jazz Ensemble in two different semesters. Requires an audition prior to each semester of enrollment.

² Students should enroll in MUS 4581 Chamber Music (Jazz Combos) in two different semesters. Requires an audition prior to each semester of enrollment.

Minor in Music

To declare the Minor in Music, students must interview with a Music Department advisor and submit the Declaration of Music Minor form.

All students pursuing the Minor in Music must complete 20 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 Aural Skills I and MUS 1112 Basic Skills of Music I.

A. Music Theory and Aural Skills	8
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. Music History, Literature, and Industry	6
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Select 6 semester credit hours from the following courses:

MUS 2243 World Music in Society	
MUS 2263 Introduction to the Music Industry	
MUS 2273 Introduction to Music and Art Nonprofit Organizations	
MUS 2633 American Roots Music	
MUS 2663 History and Styles of Jazz	
MUS 2673 History and Styles of Rock	
MUS 2683 History and Styles of Western Art Music	
MUS 2693 The Music of Latin America and the Caribbean	
MUS 2743 Music and Film	

C. Music Technology	3
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Select 3 semester credit hours from the following courses:

MUS 3013 Digital Music Production	
MUS 3103 Audio Technology I	
MUS 3123 Introduction to Electronic and Computer Music	

D. Music Performance ¹	3
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Select 3 semester credit hours from the following courses:

MUS 3711 Mariachi Ensemble	
MUS 3721 UTSA Men's Glee Club	
MUS 3731 UTSA University Band	
MUS 3751 UTSA Symphonic Band	
MUS 3761 UTSA Orchestra	
MUS 3771 Jazz Ensemble	
MUS 3781 Concert Choir	
MUS 3791 Lyric Theatre	
MUS 3801 UTSA Athletic Band	
MUS 3811 Women's Choir	
MUS 4581 Chamber Music	
MUS 3821 UTSA Wind Ensemble	

Total Credit Hours	20
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¹ All ensembles may be repeated for credit.

Minor in Music Marketing

To declare the Minor in Music Marketing, students must interview with a Music Department advisor and submit the Declaration of Music Minor form.

All students pursuing the Minor in Music Marketing must complete 18 semester credit hours of required courses.

MUS 2263 Introduction to the Music Industry	3
MUS 2273 Introduction to Music and Art Nonprofit Organizations	3
MUS 3613 Entrepreneurship in Music	3
MUS 4433 Multimedia Production	3
MUS 4803 Seminar in Music Marketing	3
MUS 4953 Special Studies in Music (Music Marketing Project)	3
Total Credit Hours	18

Minor in Music Technology

To declare the Minor in Music Technology, students must interview with a Music Department advisor and submit the Declaration of Music Minor Form.

All students pursuing the Minor in Music Technology must complete 19 semester credit hours.

A. Required Courses	18
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MUS 3013 Digital Music Production	
MUS 3103 Audio Technology I	
MUS 3123 Introduction to Electronic and Computer Music	
MUS 3163 Audio Technology II	
MUS 4153 Audio Technology III	
MUS 4433 Multimedia Production	

B. Elective Course	1
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Select 1 semester credit hour from the following courses:

MUS 4581 Chamber Music (New Music Lab) ¹	
MUS 4961 Music Technology Project	

Total Credit Hours	19
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¹ Participation may require an audition.

Department of Philosophy and Classics

The Department of Philosophy and Classics offers Bachelor of Arts degrees in Classical Studies and Humanities, Medical Humanities, and Philosophy. Students majoring in Medical Humanities may select a concentration in Pre-Medicine or Health Careers. Minors are offered in Classical Studies, Humanities, Philosophy, and Religious Studies. Honors may 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.

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.

- B.A. degree in Classical Studies and Humanities (p. 199)
- B.A. degree in Medical Humanities (p. 201)
- B.A. degree in Philosophy (p. 206)

Bachelor of Arts Degree in Classical Studies and Humanities

The Bachelor of Arts (B.A.) degree in Classical Studies and Humanities is an interdisciplinary degree program that provides students with a foundation in the history of humanistic disciplines and also 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 B.A. 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.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6

Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. Common Core

CLA 2013	Introduction to Ancient Greece	3
CLA 2023	Introduction to Ancient Rome	3
PHI 2023	Introduction to Ancient Philosophy	3
CLA 4973	Senior Seminar in Classics	3
or HUM 4973	Senior Seminar in Humanities	

B. Language Component

Select one of the following emphases: 6-8

Classical Studies Emphasis:

LAT 1114 Introductory Latin I (or equivalent)
or GRK 1114 Introductory Classical Greek I

LAT 1124 Introductory Latin II (or equivalent)
or GRK 1124 Introductory Classical Greek II

Humanities Emphasis:

Select 6 semester hours in a language other than English

C. Discipline Core

Select one of the following emphases: 18

Classical Studies Emphasis:

GRK 2113 Intermediate Classical Greek I
or LAT 2113 Intermediate Latin I

Five 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

Four courses in approved historical periods selected from the following (three of which must be at the 3000-level or higher):

CLA 3123 Cultural Issues in Classical Antiquity

CLA 3513 Topics in Classical History

HUM 2023 Introduction to the Humanities I

HUM 2033	Introduction to the Humanities II
HUM 2053	History of Film
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

40-42 semester credit hours of electives. In fulfillment of this requirement, majors are encouraged to take at least 9 semester credit hours of upper-division coursework in disciplines that support the study of Philosophy. Recommended disciplines for the Classics emphasis include: Architecture; Language, Literature, and Humanities; History and Theory of Art and Music. Recommended disciplines for the Humanities emphasis include: Mathematics and Natural Sciences; Social and Behavioral Sciences; Language, Literature, and Humanities; History and Theory of Art and Music; Architecture.

Total Credit Hours 76-80

Course Sequence Guide for B.A. Degree in Classical Studies and Humanities

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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
LAT 1114 or GRK 1114	Introductory Latin I or Introductory Classical Greek I	4
WRC 1013	Freshman Composition I (Q) (core)	3
Mathematics core		3
Life & Physical Sciences core		3
Credit Hours		16

Spring

HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
LAT 1124 or GRK 1124	Introductory Latin II () or Introductory Classical Greek II	4
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3

Life & Physical Sciences core	3
Credit Hours	16

Second Year

Fall

CLA 2013	Introduction to Ancient Greece	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3

Free elective 3

Language, Philosophy & Culture core 3

Social and Behavioral Sciences core 3

Credit Hours 15

Spring

CLA 2023	Introduction to Ancient Rome	3
PHI 2023	Introduction to Ancient Philosophy	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3

Free elective 3

Creative Arts core 3

Credit Hours 15

Third Year

Fall

LAT 2113 or GRK 2113	Intermediate Latin I or Intermediate Classical Greek I	3
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Upper-division CLA, HUM, or FL elective 3

Upper-division free elective 3

Upper-division support work 3

Component Area Option core 3

Credit 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

Credit Hours 15

Fourth 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

Credit Hours 15

Spring

CLA 4973 Senior Seminar in Classics 3

Free elective 1

Upper-division free elective 3

Upper-division free elective 3

Upper-division support work	3
Credit Hours	13
Total Credit Hours	120

B.A. in Classical Studies and Humanities, Humanities Emphasis – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Foreign language (semester I)		3-4
Mathematics core		3
Life & Physical Sciences core		3
Credit Hours		15-16

Spring

HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Foreign language (semester II)		3-4
Life & Physical Sciences core		3
Credit Hours		15-16

Second Year

Fall		
CLA 2013	Introduction to Ancient Greece	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
HUM 2093	World Religions	3
Humanities Emphasis elective		3
Language, Philosophy & Culture core		3
Credit Hours		15

Spring

CLA 2023	Introduction to Ancient Rome	3
HUM 3013	History of Ideas	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Creative Arts core		3
Upper-division Humanities Emphasis elective		3
Credit Hours		15

Third Year

Fall		
PHI 2023	Introduction to Ancient Philosophy	3
Social and Behavioral Sciences core		3
Free elective		3
Upper-division free elective		3

Upper-division Humanities Emphasis elective	3
Credit Hours	15

Spring

CLA, PHI, HUM, or Literature elective ¹	3
CLA, PHI, HUM, or Literature elective ¹	3
Free elective	3
Upper-division free elective	3
Component Area Option core	3
Credit Hours	15

Fourth Year

Fall

CLA, PHI, HUM, or Literature elective ¹	3
Free elective	3
Upper-division free elective	3
Upper-division free elective	3
Upper-division Humanities Emphasis elective	3
Credit Hours	15

Spring

HUM 4973	Senior Seminar in Humanities	3
CLA, PHI, HUM, or Literature elective ¹		3
Free elective		3
Free elective (to meet 120 hour minimum)		1-3
Upper-division free elective		3
Credit Hours		15-13
Total Credit Hours		120

¹ 9 of these hours must be upper-division.

Bachelor of Arts Degree in Medical Humanities

The Bachelor of Arts (B.A.) degree in Medical Humanities is an interdisciplinary degree drawing upon the natural sciences, social sciences, humanities, and arts disciplines to prepare students for careers in medicine and health within a competency-based framework that promotes the interpretation of human factors associated with illness and wellness.

The degree offers two concentrations. The Pre-Medicine Concentration meets typical application requirements for American medical and dental schools. The Health Careers Concentration prepares graduates for a wide variety of health-related careers.

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 B.A. degree in Medical 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.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Bachelor of Arts Degree in Medical Humanities with a Pre-Medicine Concentration

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.

All candidates for this degree must complete the following degree requirements in addition to the Core Curriculum requirements.

Degree Requirements

A. Required courses in science and mathematics 47

BIO 1404	Biosciences I (satisfies one of the Life and Physical Sciences Core Curriculum requirements)
BIO 1414	Biosciences II (satisfies one of the Life and Physical Sciences Core Curriculum requirements)
BIO 2313	Genetics
BIO 3513	Biochemistry
BIO 3713	Microbiology
	or BIO 3813 Cell Biology
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory
CHE 2603 & CHE 2612	Organic Chemistry I and Organic Chemistry I Laboratory
CHE 3643	Organic Chemistry II
MAT 1073	Algebra for Scientists and Engineers (may be used to satisfy the Core Curriculum requirement in Mathematics)
PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory
PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory
STA 1053	Basic Statistics (may be used to satisfy the Core Curriculum requirement in Mathematics)

B. Required courses in medical humanities 6

MHU 2013	Introduction to Medical Humanities
MHU 4813	Seminar in Medical Humanities

C. Social and behavioral sciences electives

15 semester credit hours of electives in social and behavioral sciences, 9 of which must be upper-division, and 3 from the Core Curriculum, chosen from the following:

ANT 2033	Introduction to Biological Anthropology
ANT 2053	Introduction to Cultural Anthropology (may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)
ANT 2063	Language, Thought, and Culture (may be used to satisfy the Core Curriculum requirement in Language, Philosophy and Culture)
ANT 3513	The Human Skeleton
ANT 3523	Medical Anthropology
ANT 3883	Death and Dying
BIO 1033	Drugs and Society (may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)
EDP 3673	Introduction to Behavior Analysis
EDP 4683	Advanced Behavior Analysis
GES 3443	Medical Geography
HTH 2413	Introduction to Community and Public Health (may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)
HTH 2513	Personal Health (may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)
PSY 1013	Introduction to Psychology (may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)
PSY 2073	Statistics for Psychology
PSY 3023	Social Psychology of Small Groups
PSY 3513	Developmental Psychopathology
PSY 3523	Psychology of Adulthood and Aging
PSY 3543	Introduction to Clinical Psychology
PSY 4253	Psychology of Health
SOC 1013	Introduction to Sociology (may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)
SOC 1043	Introduction to Public Health
SOC 2023	Social Context of Drug Use (may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)
SOC 2043	Psychological, Social, and Biological Foundations of Behavior
SOC 3203	Gerontology
SOC 3213	Medical Sociology
SOC 4043	Global Health
SOC 4053	Health Care System
SOC 4073	Social and Behavioral Theories in Public Health
SOC 4683	Health Disparities

D. Arts and humanities electives 15

15 additional semester credit hours of electives in arts and humanities, 9 of which must be upper-division and 3 from the Core Curriculum (selected from a different component area than above), chosen from the following:

AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350 (may be used to satisfy the Core Curriculum requirement in Creative Arts)
AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750 (may be used to satisfy the Core Curriculum requirement in Creative Arts)
AHC 1133	Survey of Modern Art (may be used to satisfy the Core Curriculum requirement in Creative Arts)
AHC 4333	Topics in Art History and Criticism
ANT 3013	Evolutionary Medicine
ANT 3563	Anthropology of Complementary and Alternative Medicine
ANT 4303	Water, Sustainability, and Health
ANT 4333	Ecology and Evolution of Human Diseases
ANT 4433	One Health: Global Health and Conservation Medicine
ART 1103	Introduction to Visual Arts (may be used to satisfy the Core Curriculum requirement in Creative Arts)
BBL 3043	Social Psychological Considerations in Mexican American Communities
CLA 2953	Topics for the Study of the Ancient Mediterranean (when topic is Medical Roots)
COM 3293	Introduction to Health Communication
COM 3493	Global Health Communication
COM 3593	Health Communication Campaigns
COM 3693	Interpersonal Health Communication
COM 4893	Health Communication Practicum
COM 3383	Interpersonal Communication
CSH 1213	Topics in World Cultures
CSH 3823	Advanced Topics in World Cultures
DAN 1113	Introduction to Modern Dance
ENG 2413	Technical Writing (may be used to satisfy the Core Curriculum requirement in the Component Area Option)
ENG 3383	Writing in Public and Professional Contexts
ENG 4433	Advanced Professional Writing
HIS 3453	History of Medicine in America
HUM 2023	Introduction to the Humanities I (may be used to satisfy the Core Curriculum requirement in Creative Arts)
HUM 2033	Introduction to the Humanities II (may be used to satisfy the Core Curriculum requirement in Creative Arts)
MUS 2273	Introduction to Music and Art Nonprofit Organizations
PHI 1043	Critical Thinking
PHI 2043	Introductory Logic (may be used to satisfy the Core Curriculum requirement in the Component Area Option)
PHI 2123	Contemporary Moral Issues (may be used to satisfy the Core Curriculum requirement in Language, Philosophy and Culture)
PHI 3013	Philosophy of Religion
PHI 3033	Philosophy of Science
PHI 3213	Ethics

POL 3303	Race, Ethnicity and Public Policy
SOC 3043	Race and Ethnic Relations

Internship and Independent Study courses in the participating disciplines may also be applied to satisfy this requirement when the approved coursework is preparatory to careers in medicine and health. Students are encouraged to include independent studies and internships in their degree plans, but only 6 hours of independent study or internship will apply to the degree.

E. Free electives	
13 semester credit hours of free electives, 9 of which must be upper division	13
Total Credit Hours	96

Note: Any Core Curriculum course may be used to satisfy the Component Area Option requirement.

Medical Humanities majors are encouraged to study one or more ancient or modern languages other than English through elective coursework.

Bachelor of Arts Degree in Medical Humanities with a Health Careers Concentration

The B.A. degree in Medical Humanities with a Health Careers Concentration prepares graduates for a wide variety of health-related careers.

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.

All candidates for this degree must complete the following degree requirements in addition to the Core Curriculum requirements.

Degree Requirements

A. Required courses in science and mathematics		25
BIO 1404	Biosciences I (satisfies one of the Life and Physical Sciences Core Curriculum requirements)	
BIO 1414	Biosciences II (satisfies one of the Life and Physical Sciences Core Curriculum requirements)	
BIO 2313	Genetics	
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	
MAT 1073	Algebra for Scientists and Engineers (may be used to satisfy the Core Curriculum requirement in Mathematics)	
PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory	
STA 1053	Basic Statistics (may be used to satisfy the Core Curriculum requirement in Mathematics)	
B. Required courses in medical humanities		6
MHU 2013	Introduction to Medical Humanities	
MHU 4813	Seminar in Medical Humanities	
C. Social and behavioral sciences electives		21
21 semester credit hours in social and behavioral sciences, 12 of which must be upper-division and 3 from the Core Curriculum, chosen from the following:		
ANT 2033	Introduction to Biological Anthropology	

ANT 2053	Introduction to Cultural Anthropology (may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)
ANT 2063	Language, Thought, and Culture (may be used to satisfy the Core Curriculum requirement in Language, Philosophy and Culture)
ANT 3513	The Human Skeleton
ANT 3523	Medical Anthropology
ANT 3883	Death and Dying
BIO 1033	Drugs and Society (may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)
GES 3443	Medical Geography
HTH 2413	Introduction to Community and Public Health (may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)
HTH 2513	Personal Health (may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)
PSY 1013	Introduction to Psychology ((may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)
PSY 3023	Social Psychology of Small Groups
PSY 3113	Motivation and Emotion
PSY 3513	Developmental Psychopathology
PSY 3523	Psychology of Adulthood and Aging
PSY 3543	Introduction to Clinical Psychology
PSY 4253	Psychology of Health
SOC 1013	Introduction to Sociology ((may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)
SOC 1043	Introduction to Public Health
SOC 2023	Social Context of Drug Use (may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)
SOC 2043	Psychological, Social, and Biological Foundations of Behavior
SOC 3203	Gerontology
SOC 3213	Medical Sociology
SOC 4043	Global Health
SOC 4053	Health Care System
SOC 4073	Social and Behavioral Theories in Public Health
SOC 4683	Health Disparities

D. Arts and humanities electives

21 additional semester credit hours in arts and humanities, 12 of which must be upper-division and 3 from the Core Curriculum (selected from a different component area than above), chosen from the following:

AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350 (may be used to satisfy the Core Curriculum requirement in Creative Arts)
AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750 (may be used to satisfy the Core Curriculum requirement in Creative Arts)

AHC 1133	Survey of Modern Art (may be used to satisfy the Core Curriculum requirement in Creative Arts)
AHC 4333	Topics in Art History and Criticism
ANT 3013	Evolutionary Medicine
ANT 3563	Anthropology of Complementary and Alternative Medicine
ANT 4303	Water, Sustainability, and Health
ANT 4333	Ecology and Evolution of Human Diseases
ANT 4433	One Health: Global Health and Conservation Medicine
ART 1103	Introduction to Visual Arts (may be used to satisfy the Core Curriculum requirement in Creative Arts)
BBL 3043	Social Psychological Considerations in Mexican American Communities
CSH 1213	Topics in World Cultures
CSH 3823	Advanced Topics in World Cultures
COM 3493	Global Health Communication
COM 3593	Health Communication Campaigns
COM 3693	Interpersonal Health Communication
COM 4893	Health Communication Practicum
DAN 1113	Introduction to Modern Dance
EDP 3673	Introduction to Behavior Analysis
EDP 4683	Advanced Behavior Analysis
ENG 2413	Technical Writing (may be used to satisfy the Core Curriculum requirement in the Component Area Option)
ENG 3383	Writing in Public and Professional Contexts
ENG 4433	Advanced Professional Writing
HIS 3453	History of Medicine in America
HUM 2023	Introduction to the Humanities I (may be used to satisfy the Core Curriculum requirement in Creative Arts)
HUM 2033	Introduction to the Humanities II (may be used to satisfy the Core Curriculum requirement in Creative Arts)
HUM 2093	World Religions
HUM 3013	History of Ideas
MUS 2273	Introduction to Music and Art Nonprofit Organizations
PHI 1043	Critical Thinking
PHI 2043	Introductory Logic (may be used to satisfy the Core Curriculum requirement in the Component Area Option)
PHI 2123	Contemporary Moral Issues (may be used to satisfy the Core Curriculum requirement in Language, Philosophy and Culture)
PHI 3213	Ethics
PHI 3223	Approaches to Knowledge and Reality
PHI 3033	Philosophy of Science
POL 3303	Race, Ethnicity and Public Policy
SOC 3043	Race and Ethnic Relations

E. Single language other than English

6 semester credit hours in a single language other than English 6

F. Free electives

12 semester credit hours of upper-division free electives	12
Total Credit Hours	91

Note: Any Core Curriculum course may be used to satisfy the Component Area Option requirement.

Course Sequence Guide for B.A. Degree in Medical Humanities

This course sequence guide is designed to assist students in completing their UTSA undergraduate Medical Humanities degree requirements.

This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor 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 Medical Humanities with a Pre-Medicine Concentration – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
POL 1013	Introduction to American Politics (core)	3
MAT 1073	Algebra for Scientists and Engineers (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Free elective (CHE 1073 if needed)		3
	Credit Hours	15

Spring

BIO 1404	Biosciences I (core and major)	4
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
WRC 1023	Freshman Composition II (Q) (core)	3
American History core		3
Creative Arts core (Arts & Humanities elective)		3
	Credit Hours	17

Second Year

Fall		Credit Hours
BIO 1414	Biosciences II (core and major)	4
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	4
MHU 2013	Introduction to Medical Humanities	3
STA 1053	Basic Statistics (core and major)	3
Social and Behavioral Sciences core (Social & Behavioral Sciences elective)		3
	Credit Hours	17

Spring

BIO 2313	Genetics	3
CHE 2603 & CHE 2612	Organic Chemistry I and Organic Chemistry I Laboratory	5
American History core		3

Social & Behavioral Sciences elective	3
Credit Hours	14

Third Year

Fall

BIO 3713 or BIO 3813	Microbiology (or Cell Biology) or Cell Biology	3
CHE 3643	Organic Chemistry II	3
PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory	4
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
	Credit Hours	13

Spring

BIO 3513	Biochemistry	3
PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory	4
Arts & Humanities elective		3
Language, Philosophy and Culture core		3
Upper-division free elective		3
	Credit Hours	16

Fourth Year

Fall

Upper-division Arts & Humanities elective	3	
Upper-division Arts & Humanities elective	3	
Upper-division Social & Behavioral Sciences elective	3	
Upper-division Social & Behavioral Sciences elective	3	
Upper-division free elective	3	
	Credit Hours	15

Spring

MHU 4813	Seminar in Medical Humanities	3
Upper-division Arts & Humanities elective		3
Upper-division Social & Behavioral Sciences elective		3
Upper-division free elective		3
Free elective (to meet 120 hour minimum)		1
	Credit Hours	13
	Total Credit Hours	120

B.A. in Medical Humanities with a Health Careers Concentration – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
POL 1013	Introduction to American Politics (core)	3
MAT 1073	Algebra for Scientists and Engineers (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Free elective (CHE 1073 if needed)		3
	Credit Hours	15

Spring

CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
STA 1053	Basic Statistics (core and major)	3
WRC 1023	Freshman Composition II (Q) (core)	3
American History core		3
Creative Arts core (Arts & Humanities elective)		3
Credit Hours		16

Second Year

Fall

BIO 1404	Biosciences I (core and major)	4
MHU 2013	Introduction to Medical Humanities	3
Foreign language (semester I)		3-4
Social and Behavioral Sciences core (Social & Behavioral Sciences elective)		3
Credit Hours		13-14

Spring

BIO 1414	Biosciences II (core and major)	4
American History core		3
Foreign language (semester II)		3-4
Social & Behavioral Sciences elective		3
Upper-division Arts & Humanities elective		3
Credit Hours		16-17

Third Year

Fall

BIO 2313	Genetics	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Social & Behavioral Sciences elective		3
Upper-division Social & Behavioral Sciences elective		3
Upper-division free elective		3
Credit Hours		15

Spring

PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory	4
Arts & Humanities elective		3
Language, Philosophy and Culture core		3
Upper-division Social & Behavioral Sciences elective		3
Upper-division free elective		3
Credit Hours		16

Fourth Year

Fall

Upper-division Arts & Humanities elective		3
Upper-division Arts & Humanities elective		3
Upper-division Social & Behavioral Sciences elective		3
Upper-division Social & Behavioral Sciences elective		3
Upper-division free elective		3
Credit Hours		15

Spring

MHU 4813	Seminar in Medical Humanities	3
Arts & Humanities elective		3

Upper-division Arts & Humanities elective	3	
Upper-division free elective	3	
Free elective (to meet 120 hour minimum)	0-2	
Credit Hours		14-12
Total Credit Hours		120

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 B.A. 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.

Note: If a language is used to satisfy the three-hour Language, Philosophy and Culture core requirement, students will need to take an additional three hours in the same language for the degree requirement

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. Required courses

PHI 2013	Basic Philosophical Problems	3
PHI 2023	Introduction to Ancient Philosophy	3
PHI 2033	Introduction to Early Modern Philosophy	3
PHI 2043	Introductory Logic	3
PHI 3213	Ethics	3
PHI 3223	Approaches to Knowledge and Reality	3
PHI 4973	Seminar for Philosophy Majors	3
Additional upper-division philosophy electives		12

B. Single language other than English

Select 6 semester credit hours in a single language other than English	6
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C. Approved support work

39 semester credit hours of electives. In fulfillment of this requirement, majors are encouraged to take at least 9 semester credit hours of upper-division coursework in disciplines that support the study of Philosophy. Recommended disciplines include: Mathematics and Natural Sciences; Social and Behavioral Sciences; Language, Literature, and Humanities; History and Theory of Art and Music.

Total Credit Hours 78

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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Foreign language (semester I)		3-4
Mathematics core		3
Life & Physical Sciences core		3
Credit Hours		15-16

Spring

HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Foreign language (semester II)		3-4
Life & Physical Sciences core		3
Credit Hours		15-16

Second Year

Fall		Credit Hours
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
PHI 2013	Basic Philosophical Problems	3
PHI 2023	Introduction to Ancient Philosophy	3
Language, Philosophy & Culture core		3
Support work		3
Credit Hours		15

Spring

PHI 2033	Introduction to Early Modern Philosophy	3
PHI 2043	Introductory Logic	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Support work		3
Creative Arts core		3
Credit Hours		15

Third Year

Fall

PHI 3213	Ethics	3
Upper-division PHI elective		3
Upper-division support work		3
Social and Behavioral Sciences core		3
Component Area Option core		3
Credit Hours		15

Spring

PHI 3223	Approaches to Knowledge and Reality	3
Free elective		3
Upper-division free elective		3
Upper-division PHI elective		3
Upper-division support work		3
Credit Hours		15

Fourth Year

Fall

PHI 4000-level elective		3
Free elective		3
Free elective		3
Upper-division free elective		3
Upper-division free elective		3
Credit Hours		15

Spring

PHI 4973	Seminar for Philosophy Majors	3
PHI 4000-level elective		3
Free elective		3
Free elective (to meet 120 hour minimum)		1-3
Upper-division free elective		3
Credit Hours		15-13

Total Credit Hours 120

- Minor in Classical Studies (p. 207)
- Minor in Humanities (p. 208)
- Minor in Philosophy (p. 208)
- Minor in Religious Studies (p. 208)

Minor in Classical Studies

All students pursuing the minor in Classical Studies must complete 21 semester credit hours.

A. Minor requirements

LAT 2113	Intermediate Latin I (or equivalent)	3
or GRK 2113	Intermediate Classical Greek I	

B. Required courses

CLA 2013	Introduction to Ancient Greece	3
CLA 2023	Introduction to Ancient Rome	3
CLA 2033	Introduction to Classical Literature	3

C. Three additional courses in Classics, Greek, or Latin

Select 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)

Total Credit Hours		21
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Minor in Humanities

All students pursuing the Minor in Humanities must complete 21 semester credit hours.

A. Minor requirements

HUM 3013	History of Ideas	3
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B. Three background courses

Select one course from each of the following groups

1. Group 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. Group 2

CLA 2013	Introduction to Ancient Greece	
CLA 2023	Introduction to Ancient Rome	
CLA 2033	Introduction to Classical Literature	

3. Group 3

PHI 2013	Basic Philosophical Problems	
PHI 2023	Introduction to Ancient Philosophy	
PHI 2033	Introduction to Early Modern Philosophy	

C. Additional upper-division coursework in humanities

Select 9 additional semester credit hours of upper-division coursework in Humanities

Total Credit Hours		21
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Minor in Philosophy

All students pursuing the Minor in Philosophy must complete 21 semester credit hours.

A. Required courses

PHI 2013	Basic Philosophical Problems	3
PHI 2023	Introduction to Ancient Philosophy	3
PHI 2033	Introduction to Early Modern Philosophy	3
PHI 2043	Introductory Logic	3
PHI 3213	Ethics	3
PHI 3223	Approaches to Knowledge and Reality	3

B. Additional upper-division courses in Philosophy

Additional coursework	3
Total Credit Hours	21

Minor in Religious Studies

All students pursuing the Minor in Religious Studies must complete 21 semester credit hours.

A. Required courses

HUM 2093	World Religions	3
PHI 3013	Philosophy of Religion	3

B. Select five courses from the following:

AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350	
ANT 3133	Ritual and Symbol	
ANT 3883	Death and Dying	
CLA 2323	Classical Mythology	
CLA 3123	Cultural Issues in Classical Antiquity	
HIS 2543	Introduction to Islamic Civilization	
HIS 3463	History of Religion in the United States	
HUM 3213	The Christian Classics	
HUM 3223	The Bible as Literature	
HUM 4973	Senior Seminar in Humanities	
PHI 3073	Asian Philosophy	
PHI 4973	Seminar for Philosophy Majors	
SOC 3093	Religion and Society	

Total Credit Hours	21
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Department of Political Science and Geography

The Department of Political Science and Geography offers Bachelor of Arts degrees in Geography and Environmental Sustainability; Global Affairs; Political Science; and Politics and Law. The Political Science and Geography and Sustainability degrees have Social Studies Teaching Tracks. The Department also offers minors in Geography and Environmental Sustainability; Global Affairs; Intelligence and Security Studies, Political Science; and Politics and Law.

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 semester at UTSA. To earn honors, the thesis must be passed by an Honors Committee that will be formed with the recommending faculty and two other faculty members. Students interested in the Honors Program should contact the Department 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 enroll in mentorship courses such as an Internship, Independent Study, Study Abroad, 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. 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. The Research Practicum enables students to focus on an applied research project that makes a contribution to the discovery or resolution of community needs.

- B.A degree in Geography and Environmental Sustainability (p. 209)
- B.A. degree in Global Affairs (p. 211)
- B.A. degree in Political Science (p. 213)
- B.A. degree in Politics and Law (p. 216)

Bachelor of Arts Degree in Geography and Environmental Sustainability

The minimum number of semester credit hours required for the Bachelor of Arts (B.A.) degree in Geography and Environmental Sustainability, 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 40 semester credit hours of geography coursework are required to fulfill the Geography and Environmental Sustainability major. The 40-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.

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 B.A. degree in Geography and Environmental Sustainability 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.

GES 2613 may be used to satisfy a core requirement in Life and Physical Sciences as well as a major requirement.

GES 1023 may be used to satisfy a core requirement in Language, Philosophy and Culture as well as a major requirement

GES 1013 or GES 2623 may be used to satisfy a core requirement in Social and Behavioral Science as well as a major requirement

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3

Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. Courses in the major

40 semester credit hours in the major, 24 must be at the upper-division level.

1. Required courses: 13

GES 2613	Physical Geography
GES 2623	Human Geography
GES 3314	Introduction to Geographic Information Systems
GES 3323	Spatial Analysis
2. Select 3 credit hours from the following: 3

GES 1013	Fundamentals of Geography
GES 1023	World Regional Geography
3. Select 9 credit hours of regional geography courses: 9

GES 3113	Geography of the United States and Canada
GES 3123	Geography of Latin America
GES 3133	Geography of Europe
GES 3143	Geography of Mexico
GES 3153	Geography of Texas
GES 3166	Physical and Cultural Geography of the American Southwest
GES 3423	Geopolitics of Russia and Eurasia
GES 3433	The Geography and Politics of the Asian Rim
GES 4856	Study Abroad
4. Select 15 additional credit hours of Geography and Environmental Sustainability electives. These may include courses from the following lists: 15

Earth science, resources, and the environment

GES 3003	Global Sustainability
GES 3613	Conservation of Resources
GES 3623	Geography of Natural Hazards
GES 3713	Weather and Climate
GES 3723	Physiography
GES 3743	Biogeography
GES 3753	Climate Change

Economic, political, population, and cultural studies

GES 3223	Revealing Geography through Film and Pop Culture
GES 3443	Medical Geography
GES 3453	Population Geography
GES 3463	Geography of Tourism
GES 3533	Geography of Local Economic Activity
GES 3543	Behavioral Geography
GES 3633	Geography of Globalization and Development
GES 3643	Political Geography
GES 3673	Space and Identity Crisis in the Postmodern Era

Geographic Information Systems and cartography

GES 3334	Advanced Geographic Information Systems	
GES 3343	Analytical and Computer Cartography	
GES 3353	Critical Qualitative GIS	
GES 3363	GIS Cartography	
Urban studies		
GES 3513	Urban Geography	
GES 3523	Introduction to Urban Planning	
GES 3563	Urban Development: Politics, Planning and Power	
GES 3653	Gender and Cities: An Introduction to Feminist Geography	
GES 3663	Urban Sustainability in Global Context	
GES 3733	Urban and Regional Analysis	
Additional regional courses selected from item 3 above		
B. Single language other than English		
Select 6 semester credit hours of a single language other than English		6
C. Electives		
Select 32 semester credit hours of electives. In fulfillment of this requirement, majors are encouraged to take at least 9 semester credit hours of upper-division coursework in disciplines that support the study of geography in the following areas:		32
Urban, economic, political, population, and cultural studies		
International courses including global affairs		
Earth science and resources		
Total Credit Hours		78

Degree Requirements: B.A. Degree in Geography and Environmental Sustainability – Social Studies Teaching Track

A. Required courses

Courses marked with an asterisk (*) may also be used to satisfy Core Curriculum requirements.

ECO 2003	Economic Principles and Issues (*)	3
GES 1013	Fundamentals of Geography (*)	3
GES 1023	World Regional Geography (*)	3
GES 2613	Physical Geography (*)	3
GES 2623	Human Geography	3
HIS 1043	United States History: Pre-Columbus to Civil War Era (*)	3
HIS 1053	United States History: Civil War Era to Present (*)	3
HIS 2053	Texas History	3
HIS 2123	Introduction to World Civilization to the Fifteenth Century	3
HIS 2133	Introduction to World Civilization since the Fifteenth Century	3
POL 1013	Introduction to American Politics (*)	3
POL 1133	Texas Politics and Society (*)	3
B. Upper-division History course		
Select one course in U.S. history		3
C. Geography		
Select four courses from the list below:		12
GES 3003	Global Sustainability	
GES 3113	Geography of the United States and Canada	

GES 3123	Geography of Latin America	
GES 3133	Geography of Europe	
GES 3153	Geography of Texas	
GES 3213	Cultural Geography	
GES 3633	Geography of Globalization and Development	
GES 3643	Political Geography	
GES 3653	Gender and Cities: An Introduction to Feminist Geography	
GES 3663	Urban Sustainability in Global Context	
GES 3753	Climate Change	
D. Government Institutions		
Select three courses from the list below:		9
POL 3013	The American Legal Process	
POL 3283	The American Presidency	
POL 3313	The Supreme Court	
POL 3323	Constitutional Law I	
POL 3363	Political Parties and Interest Groups	
POL 3373	The Legislative Process	
POL 3503	American Foreign Policy since World War II	
E. Upper-division Geography and Environmental Sustainability courses		
12 semester credit hours of upper-division GES courses		12
F. Teacher Certification courses		
Total Credit Hours		105

Course Sequence Guide for B.A. Degree in Geography and Environmental Sustainability

This course sequence guide is designed to assist students in completing their UTSA undergraduate Geography and Environmental Sustainability degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor 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 and Environmental Sustainability – Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
GES 2613	Physical Geography (core and major)	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15

Spring

GES 1013 or GES 1023	Fundamentals of Geography or World Regional Geography	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre- Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
WRC 1023	Freshman Composition II (Q) (core)	3
Life & Physical Sciences core		3
Credit Hours		15

Second Year

Fall

GES 2623	Human Geography (core and major)	3
Creative Arts core		3
Free elective		3
Free elective		3
Free elective		3
Credit Hours		15

Spring

Component Area Option core		3
Language, Philosophy & Culture core		3
Mathematics core		3
Free elective		3
Free elective		3
Credit Hours		15

Third Year

Fall

Regional geography course (See item A.3. in degree requirements.)		3
Foreign language (semester I)		3-4
Upper-division GES elective		3
Upper-division free elective		3
Free elective		3
Credit Hours		15-16

Spring

GES 3323	Spatial Analysis	3
Regional geography course (See item A.3. in degree requirements.)		3
Free elective		3
Upper-division GES elective		3
Foreign language (semester II)		3-4
Credit Hours		15-16

Fourth Year

Fall

GES 3314	Introduction to Geographic Information Systems	4
Regional geography course (See item A.3. in degree requirements.)		3
Upper-division free elective		3
Upper-division free elective		3

Upper-division GES elective	3
Credit Hours	16

Spring

GES elective	3
Free elective (to meet 120 hour minimum)	0-2
Upper-division free elective	3
Upper-division free elective	3
Upper-division GES elective	3
Credit Hours	14-12
Total Credit Hours	120

Bachelor of Arts Degree in Global Affairs

The minimum number of semester credit hours required for the Bachelor of Arts (B.A.) degree in Global Affairs, 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 42 semester credit hours of Global Affairs coursework are required to fulfill the Global Affairs major. The 42-hour total is considered a minimum, and students are encouraged to deepen and broaden their grasp of the major through careful allocation of elective semester credit hours.

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 B.A. degree in Global Affairs 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.

GLA 1013 should be used to satisfy the core requirement for Language, Philosophy and Culture. All Global Affairs majors are required to take GLA 1013 as a prerequisite for upper-division GLA courses.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. Courses in the major

45 semester credit hours in the major, 30 of which must be at the upper-division level.	
1. Required introductory courses on global affairs:	
GLA 1013	U.S. in the Global Arena
	9

GLA 2603	Introduction to Global Affairs *	
and one of the following		
GLA 2103	Introduction to Intelligence Studies	
GLA 2203	Introduction to Security Studies: Theory and Policy	
GLA 2633	Comparative Politics	
2. Required methods courses:		6
POL 2693	Designing Research in Political Science	
and one of the following		
GLA 3103	Research Methods in Global Affairs	
GLA 4123	Advanced Techniques in Global Affairs	
POL 2703	Quantitative Methods in Political Science	
3. Select three of the following Foundations of Global Affairs courses:		9
GLA 3003	International Law	
GLA 3213	Theories of International Relations	
GLA 3233	Theories of International Justice	
GLA 3483	International Political Economy	
GLA 3513	International Organizations in World Politics	
GLA 3523	Force in International Politics	
GLA 3613	Nationalism and Identity Politics in a Globalizing World	
GLA 3733	National Security Law	
GLA 3763	Globalization	
GLA 3783	Democracy and World Politics	
GLA 4853	Study Abroad: Global Affairs	
4. Select three of the following Governance and Policy in Global Affairs courses:		9
GLA 3033	International Governance	
GLA 3043	International Human Rights	
GLA 3503	American Foreign Policy since World War II	
GLA 3533	The United Nations	
GLA 3543	Diplomacy	
GLA 3563	Current Issues in World Politics	
GLA 4133	Conflict, Law, and Security in Global Affairs	
GLA 4163	Model UN	
GLA 4213	The Intelligence Community in World Affairs	
GLA 4243	Terrorism and Counter-Terrorism	
GLA 4434	Cyber Warfare and International Politics	
GLA 4853	Study Abroad: Global Affairs	
5. Select three of the following Regional Studies courses:		9
GLA 3383	East European Politics	
GLA 3393	Latin American Politics	
GLA 3403	European Governments	
GLA 3423	Geopolitics of Russia and Eurasia	
GLA 3433	Governments and Politics of Southeast Asia	
GLA 3443	Governments and Politics of East Asia	
GLA 3453	Politics of Mexico	
GLA 3463	Politics of the Third World	
GLA 3473	Latin America in the World	
GLA 3493	Politics of the Middle East	
GLA 3593	Topics in Latin American Security	
GLA 4853	Study Abroad: Global Affairs	
6. Senior seminar course:		3

GLA 4973	Senior Seminar	
B. A single language other than English		
6 semester credit hours of a language		6
C. Electives		
27 semester credit hours of electives		27
Total Credit Hours		78

* Note: Credit **cannot** be earned for both GLA 2603 and POL 2603.

Course Sequence Guide for B.A. Degree in Global Affairs

This course sequence guide is designed to assist students in completing their UTSA undergraduate Global Affairs degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor 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 Global Affairs – Four-Year Academic Plan

First Year		
Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Mathematics core		3
		Credit Hours
		15
Spring		
GLA 1013	U.S. in the Global Arena (core and major)	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
WRC 1023	Freshman Composition II (Q) (core)	3
Life & Physical Sciences core		3
		Credit Hours
		15
Second Year		
Fall		
GLA 2603	Introduction to Global Affairs	3
Life & Physical Sciences core		3
Social & Behavioral Sciences core		3

Free elective	3
GLA elective	3
Credit Hours	15

Spring

POL 2693	Designing Research in Political Science	3
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GLA elective	3
Creative Arts core	3
Component Area Option core	3
Free elective	3
Credit Hours	15

Third Year

Fall

Second Methods course (GLA 3103, GLA 4123 or POL 2703)	3
Foreign language (semester I)	3-4
GLA elective	3
Free elective	3
GLA elective	3
Credit Hours	15-16

Spring

Foreign language (semester II)	3-4
Upper-division free elective	3
Upper-division GLA course	3
GLA elective	3
Free elective	3
Credit Hours	15-16

Fourth Year

Fall

Upper-division free elective	3
Upper-division free elective	3
Upper-division GLA elective	3
Upper-division GLA course	3
Upper-division GLA course	3
Credit Hours	15

Spring

GLA 4973	Senior Seminar	3
Upper-division free elective	3	
Upper-division free elective	3	
Upper-division GLA course	3	
Free elective (to meet 120 hour minimum)	1-3	
Credit Hours	15-13	
Total Credit Hours	120	

Bachelor of Arts Degree in Political Science

The minimum number of semester credit hours required for the Bachelor of Arts (B.A.) 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 39 semester credit hours of Political Science coursework are required to fulfill the Political Science major. The 39-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. These courses, which require advance approval from the academic advisor, 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 B.A. 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.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. 39 hours in the major

Courses must be selected in the following manner:

- Required courses: 12

POL 2533	Introduction to Political Science
POL 2693	Designing Research in Political Science
POL 2703	Quantitative Methods in Political Science
POL 4973	Seminar in Political Science
- Gateway courses. Select two courses from the list below: 6

GLA 2603	Introduction to Global Affairs (Credit cannot be earned for both GLA 2603 and POL 2603.)
	or POL 2603 Introduction to International Relations
POL 2503	Introduction to Political Theory
POL 2513	Politics and the Administrative Process
POL 2623	Law and Society
POL 2633	Comparative Politics
- Political science electives. 21 semester credit hours of upper-division electives, with at least 3 hours in each of the sub-fields below. Internship, Honors Thesis, and Study Abroad may count as upper-division political science electives: 21

American Politics	
POL 3123	Political Psychology
POL 3183	Women in Politics
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 3313	The Supreme Court
POL 3363	Political Parties and Interest Groups
POL 3373	The Legislative Process
POL 3413	Urban Development: Politics Planning, and Power
POL 3743	Politics in Film
POL 3773	Experiments in Democratic Renewal
POL 3813	Politics of Federal Justice Policy Making
POL 3823	Politics of Congressional Elections
POL 3843	Campaign and Election Law
POL 3853	Immigration Law
Comparative Politics	
POL 3353	Leadership and Elites
POL 3393	Latin American Politics
POL 3403	European Governments
POL 3433	Governments and Politics of Southeast Asia
POL 3443	Governments and Politics of East Asia
POL 3453	Politics of Mexico
POL 3463	Politics of the Third World
POL 3483	International Political Economy
POL 3493	Politics of the Middle East
POL 3553	The Welfare State in Comparative Perspective
POL 3783	Democracy and World Politics
POL 4023	Techniques in Global Analysis
International Politics	
GLA 3003	International Law
GLA 3533	The United Nations
GLA 3543	Diplomacy
GLA 3613	Nationalism and Identity Politics in a Globalizing World
GLA 4213	The Intelligence Community in World Affairs
GLA 4133	Conflict, Law, and Security in Global Affairs
GLA 4434	Cyber Warfare and International Politics
POL 3033	International Governance
POL 3043	International Human Rights
POL 3383	East European Politics
POL 3423	Geopolitics of Russia and Eurasia
POL 3483	International Political Economy
POL 3503	American Foreign Policy since World War II
POL 3513	International Organizations in World Politics
POL 3523	Force in International Politics
POL 3563	Current Issues in World Politics
POL 3763	Globalization
POL 4023	Techniques in Global Analysis
POL 4163	Model UN
POL 4853	Study Abroad: Political Science or GLA 4853 Study Abroad: Global Affairs
Political Theory	
POL 3103	Contemporary Theories of Justice
POL 3113	American Political Thought

POL 3133	Political Philosophy: Ancient and Medieval
POL 3143	Political Philosophy: Modern
POL 3153	Political Philosophy: Contemporary
POL 3173	Justice and Social Policy
POL 3203	African American Political Thought
POL 3643	Justice among Nations
Politics and the Administrative Process or Public Law	
PAL 3113	Minorities and the Law
PAL 3323	Constitutional Analysis
PAL 3413	Regulatory Law and Enterprise
PAL 3863	Contracts
PAL 4213	Great Controversies in Politics and Law
PAL 4223	Torts
POL 3013	The American Legal Process
POL 3223	Judicial Politics
POL 3313	The Supreme Court
POL 3323	Constitutional Law I
POL 3333	Constitutional Law II
POL 3413	Urban Development: Politics Planning, and Power
POL 3583	Jurisprudence
POL 3813	Politics of Federal Justice Policy Making
POL 3843	Campaign and Election Law
POL 3853	Immigration Law
POL 4123	Legal and Philosophical Reasoning
POL 4133	Politics, Law, and Literature
POL 4323	Administrative Law and Politics
B. Electives	
Select 39 semester credit hours of electives. 39	
<hr/>	
Total Credit Hours 78	

Degree Requirements: B.A. Degree in Political Science – Social Studies Teaching Track

A. Required courses

Courses marked with an asterisk (*) may also be used to satisfy Core Curriculum requirements.

ECO 2003	Economic Principles and Issues (*)	3
GES 1013	Fundamentals of Geography	3
GES 1023	World Regional Geography	3
GES 2613	Physical Geography (*)	3
HIS 1043	United States History: Pre-Columbus to Civil War Era (*)	3
HIS 1053	United States History: Civil War Era to Present (*)	3
HIS 2053	Texas History (*)	3
HIS 2123	Introduction to World Civilization to the Fifteenth Century (*)	3
HIS 2133	Introduction to World Civilization since the Fifteenth Century	3
POL 1013	Introduction to American Politics (*)	3
POL 1133	Texas Politics and Society (*)	3
POL 4973	Seminar in Political Science	3

B. Upper-division History course

Select one course in U.S. history	3
C. Geography	
Select three courses from the list below:	9
GES 3113 Geography of the United States and Canada	
GES 3123 Geography of Latin America	
GES 3133 Geography of Europe	
GES 3213 Cultural Geography	
GES 3643 Political Geography	
D. Government Institutions	
Select four courses from the list below:	12
POL 3013 The American Legal Process (POL 3313 can substitute for POL 3013)	
POL 3283 The American Presidency	
POL 3323 Constitutional Law I	
POL 3363 Political Parties and Interest Groups	
POL 3503 American Foreign Policy since World War II	
E. Upper-division Political Science courses	
12 semester credit hours of upper-division POL courses	12
F. Teacher Certification courses	33
<hr/> Total Credit Hours	<hr/> 105

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 their academic advisor 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

First Year

Fall	Credit Hours
AIS 1203 Academic Inquiry and Scholarship (core)	3
HIS 1043 United States History: Pre-Columbus to Civil War Era (core) or HIS 1053 or HIS 2053 United States History: Civil War Era to Present or Texas History	3
POL 1013 Introduction to American Politics (core)	3
WRC 1013 Freshman Composition I (Q) (core)	3
Mathematics core	3
<hr/> Credit Hours	<hr/> 15

Spring

HIS 1043 United States History: Pre-Columbus to Civil War Era (core) or HIS 1053 or HIS 2053 United States History: Civil War Era to Present or Texas History	3
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POL 1133 Texas Politics and Society (core) or POL 1213 or Civil Rights in Texas and America	3
POL 2533 Introduction to Political Science	3
WRC 1023 Freshman Composition II (Q) (core)	3
Life & Physical Sciences core	3
<hr/> Credit Hours	<hr/> 15

Second Year

Fall

POL 2503 Introduction to Political Theory or POL 2513 or Politics and the Administrative Process or POL 2603 or Introduction to International Relations or POL 2623 or Law and Society or POL 2633 or Comparative Politics	3
POL 2693 Designing Research in Political Science	3
Social & Behavioral Sciences core	3
Life & Physical Sciences core	3
Creative Arts core	3
<hr/> Credit Hours	<hr/> 15

Spring

POL 2503 Introduction to Political Theory or POL 2513 or Politics and the Administrative Process or POL 2603 or Introduction to International Relations or POL 2623 or Law and Society or POL 2633 or Comparative Politics	3
Free elective	3
Free elective	3
Language, Philosophy & Culture core	3
Component Area Option core	3
<hr/> Credit Hours	<hr/> 15

Third Year

Fall

POL 2703 Quantitative Methods in Political Science	3
Upper-division POL - American Politics	3
Free elective	3
Free elective	3
Upper-division free elective	3
<hr/> Credit Hours	<hr/> 15

Spring

POL elective	3
Free elective	3
Free elective	3
Upper-division free elective	3
Upper-division POL - Comparative Politics	3
<hr/> Credit Hours	<hr/> 15

Fourth Year

Fall

Upper-division free elective	3
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Upper-division free elective	3
Upper-division POL elective	3
Upper-division POL - International Politics	3
Upper-division POL - Political Theory	3
Credit Hours	15

Spring

POL 4973 Seminar in Political Science	3
Free elective (to meet 120 hour minimum)	3
Upper-division free elective	3
Upper-division free elective	3
Upper-division POL - Public Administration/Law	3
Credit Hours	15

Total Credit Hours 120

Bachelor of Arts Degree in Politics and Law

The minimum number of semester credit hours required for the Bachelor of Arts (B.A.) degree in Politics and Law, 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 B.A. degree in Politics and Law 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.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

A. Courses in the major

39 semester hours in the major; 27 must be at the upper-division level. Courses must be selected in the following manner:

1. Two introductory courses selected from the following:	6
PAL 2013 Introduction to Legal Studies	
PAL 2623 Law and Society	
POL 2503 Introduction to Political Theory	

2. Required social science research methods course: 3

POL 2693 Designing Research in Political Science	
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3. One writing course selected from the following: 3

PAL 3023 Legal Research and Writing	
WRC 3013 Writing Strategies for the Pre-law Student	

4. Concentration electives. 18 semester credit hours of courses selected from the lists below with at least 12 hours taken in a single concentration: 18

Law and Society Concentration

GLA 3003 International Law	
GLA 3233 Theories of International Justice	
PAL 3113 Minorities and the Law	
PAL 3223 Judicial Politics	
PAL 3583 Jurisprudence	
PAL 4013 Issues in Law and Society	
PAL 4123 Legal and Philosophical Reasoning	
POL 3103 Contemporary Theories of Justice	
POL 3113 American Political Thought	
POL 3133 Political Philosophy: Ancient and Medieval	
POL 3143 Political Philosophy: Modern	
POL 3153 Political Philosophy: Contemporary	
POL 3323 Constitutional Law I	
POL 3333 Constitutional Law II	
POL 3643 Justice among Nations	
POL 4133 Politics, Law, and Literature	

Law and Governmental Affairs Concentration

GLA 3513 International Organizations in World Politics	
PAL 3013 The American Legal Process	
PAL 3313 The Supreme Court	
PAL 3323 Constitutional Analysis	
PAL 3413 Regulatory Law and Enterprise	
PAL 3513 Trial and Appellate Advocacy	
PAL 3533 State Courts: Judicial Decision-Making Practice and Procedure	
PAL 3813 Politics of Federal Justice Policy	
PAL 3843 Campaign and Election Law	
PAL 3853 Immigration Law	
PAL 3863 Contracts	
PAL 4013 Issues in Law and Society	
PAL 4223 Torts	
PAL 4233 Federal Courts	
PAL 4323 Administrative Law and Politics	
POL 3173 Justice and Social Policy	
POL 3373 The Legislative Process	

5. 6 semester credit hours of additional politics and law electives selected from the following list and chosen with consent of the advisor. POL 4933 Internship in Politics may be used to satisfy up to 6 hours of this requirement, if internship focuses on a law-related experience: 6

ANT 3733 Political and Legal Anthropology	
BLW 3013 Business Law	
CLA 3053 Topics in Classical Genres	
CLA 3513 Topics in Classical History	

CRJ 3623	Substantive Criminal Law
CRJ 4633	Constitutional Criminal Procedure
ECO 2003	Economic Principles and Issues
ECO 3163	Evolution of Economic Thought
ENG 3223	Shakespeare: The Early Plays
ENG 3233	Shakespeare: The Later Plays
ENG 3323	History of the English Language
ES 3203	Environmental Law
GLA 3003	International Law
GLA 3033	International Governance
GLA 3043	International Human Rights
GLA 3233	Theories of International Justice
GLA 3513	International Organizations in World Politics
GLA 3633	Political Economy
HIS 3093	United States Constitutional History
HIS 3183	Law and American Development
PAD 2013	Introduction to Public Policy
PAD 3023	Introduction to Urban Management and Policy
PAD 3033	Introduction to Nonprofit Agencies
PAD 3043	Public and Nonprofit Financial Management
PAD 3113	Managing Nonprofit Organizations
PAD 3153	Administrative Law and Policy
PAL 3113	Minorities and the Law
PAL 3213	Law School Studies
PAL 3223	Judicial Politics
PAL 3313	The Supreme Court
PAL 3323	Constitutional Analysis
PAL 3413	Regulatory Law and Enterprise
PAL 3583	Jurisprudence
PAL 3813	Politics of Federal Justice Policy
PAL 3843	Campaign and Election Law
PAL 3853	Immigration Law
PAL 3863	Contracts
PAL 3813	Politics of Federal Justice Policy
PAL 4013	Issues in Law and Society
PAL 4123	Legal and Philosophical Reasoning
PAL 4223	Torts
PAL 4233	Federal Courts
PAL 4323	Administrative Law and Politics
PHI 2043	Introductory Logic
PHI 3213	Ethics
POL 2513	Politics and the Administrative Process
POL 3113	American Political Thought
POL 3133	Political Philosophy: Ancient and Medieval
POL 3143	Political Philosophy: Modern
POL 3153	Political Philosophy: Contemporary
POL 3173	Justice and Social Policy
POL 3323	Constitutional Law I
POL 3333	Constitutional Law II
POL 3373	The Legislative Process
POL 3643	Justice among Nations
POL 4133	Politics, Law, and Literature

POL 4933	Internship in Political Science	
6. Senior seminar		3
PAL 4973	Senior Seminar in Politics and Law	
POL 4973 Seminar in Political Science or GLA 4973 Seminar in Global Affairs may be substituted with consent of the Undergraduate Advisor of Record, when covering relevant topics.		
B. Electives		
39 semester credit hours of electives.		39
Total Credit Hours		78

Course Sequence Guide for B.A. Degree in Politics and Law

This course sequence guide is designed to assist students in completing their UTSA undergraduate Politics and Law degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor 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 Politics and Law – Four-Year Academic Plan

First Year		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Mathematics core		3
Credit Hours		15
Spring		
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
POL 2623	Law and Society	3
WRC 1023	Freshman Composition II (Q) (core)	3
Life & Physical Sciences core		3
Credit Hours		15
Second Year		
Fall		
PAL 2013	Introduction to Legal Studies	3
Creative Arts core		3
Life & Physical Sciences core		3

Social & Behavioral Sciences core	3
Free Elective	3
Credit Hours	15

Spring

PAL 2623 or POL 2503	Law and Society or Introduction to Political Theory	3
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PAL concentration elective	3
Component Area Option core	3
Language, Philosophy & Culture core	3
Free elective	3
Credit Hours	15

Third Year

Fall

POL 2693	Designing Research in Political Science	3
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PAL concentration elective	3
PAL concentration elective	3
Free elective	3
Free elective	3
Credit Hours	15

Spring

PAL 3023 or WRC 3013	Legal Research and Writing or Writing Strategies for the Pre-law Student	3
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PAL concentration elective	3
PAL concentration elective	3
PAL elective	3
Free elective	3
Credit Hours	15

Fourth Year

Fall

PAL 4973	Senior Seminar in Politics and Law	3
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PAL concentration elective	3
PAL elective	3
Free elective	3
Free elective	3
Credit Hours	15

Spring

Free elective	3
Free elective	3
Upper-division free elective	3
Upper-division free elective	3
Upper-division free elective	3
Credit Hours	15

Total Credit Hours 120

- Minor in Geography and Environmental Sustainability (p. 218)
- Minor in Global Affairs (p. 218)
- Minor in Intelligence and Security Studies (p. 219)
- Minor in Political Science (p. 219)
- Minor in Politics and Law (p. 220)

Minor in Geography and Environmental Sustainability

All students pursuing the Minor in Geography must complete 18 semester credit hours.

A. Courses in core concepts and regions

GES 1013	Fundamentals of Geography	3
GES 1023	World Regional Geography	3

B. Upper-division regional geography

Select one of the following: 3

GES 3113	Geography of the United States and Canada	
GES 3123	Geography of Latin America	
GES 3133	Geography of Europe	
GES 3143	Geography of Mexico	
GES 3153	Geography of Texas	
GES 3423	Geopolitics of Russia and Eurasia	
GES 3433	The Geography and Politics of the Asian Rim	

C. Electives in geography

Select 9 semester credit hours of upper-division electives in geography 9

Total Credit Hours 18

To declare a Minor in Geography and Environmental Sustainability, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Minor in Global Affairs

All students pursuing a Minor in Global Affairs must complete 18 semester credit hours, at least 12 of which must be at the upper-division level (3000- or 4000-level courses).

A. Two introductory courses on global affairs: 6

GLA 1013	U.S. in the Global Arena	
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and one of the following:

GLA 2603	Introduction to Global Affairs (POL 2603 can substitute for GLA 2603)	
GLA 2633	Comparative Politics	

B. Select one of the following Research Methods courses 3

GLA 3103	Research Methods in Global Affairs	
GLA 4123	Advanced Techniques in Global Affairs	
POL 2693	Designing Research in Political Science	
POL 2703	Quantitative Methods in Political Science	

C. Additional courses

Select 9 hours of 3000- or 4000-level GLA courses. Of these 9 hours, at least 3 hours in each of the three sections: Governance and Policy in Global Affairs, Regional Studies, and International Relations (in GLA major) 9

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 academic advisor and Department Chair:

GLA 4853	Study Abroad: Global Affairs	
GLA 4913	Independent Study	

GLA 4933	Internship in Global Affairs	
Total Credit Hours		18

Requests for substitutions require pre-approval of the student's academic advisor, the supervising faculty member, and the Department Chair.

To declare a Minor in Global Affairs, obtain advice, or seek approval of substitutions for course requirements, students should consult with their academic advisor.

Minor in Intelligence and Security Studies

All students pursuing a Minor in Intelligence and Security Studies must complete 21 hours of credit hours.

A. Core introductory courses		6
GLA 2103	Introduction to Intelligence Studies	
GLA 2203	Introduction to Security Studies: Theory and Policy	

B. Disciplinary core		
Select two courses from the list below:		6

GES 3314	Introduction to Geographic Information Systems	
GLA 3503	American Foreign Policy since World War II	
GLA 3523	Force in International Politics	
GLA 3593	Topics in Latin American Security	
GLA 3733	National Security Law	
GLA 4133	Conflict, Law, and Security in Global Affairs	
GLA 4243	Terrorism and Counter-Terrorism	
GLA 4434	Cyber Warfare and International Politics	
IS 3533	Cyber Law and Legal System	
MSC 3013	Training Management and the Warfighting Functions	
MSC 3033	American Military History	
POL 4023	Techniques in Global Analysis	

C. Intelligence and Security Studies elective		
Select one course from the list below:		3

COM 3553	Intercultural Communication	
COM 3563	International Communication	
ECO 3193	International Economics	
FIN 4613	Introduction to International Finance	
GES 3314	Introduction to Geographic Information Systems	
GES 3633	Geography of Globalization and Development	
GES 3643	Political Geography	
GLA 3033	International Governance	
GLA 3513	International Organizations in World Politics	
GLA 3533	The United Nations	
GLA 3543	Diplomacy	
GLA 3783	Democracy and World Politics	
HIS 3823	History of American Foreign Relations	
POL 3383	East European Politics	
POL 3393	Latin American Politics	
POL 3453	Politics of Mexico	
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 4953	Special Studies in Political Science	

D. Foreign Language		
Two courses or equivalents of the following languages: Arabic, Chinese, Japanese, Korean, Russian, or Spanish		6

Students who can demonstrate competency in one of the designated foreign languages need not take additional foreign language courses but can take up to 8 hours of intermediate or advanced foreign language courses for credit toward the minor. Alternatively, they can take elective courses in intelligence and security studies to reach the 21 hours necessary to earn the minor. See department Undergraduate Advisor of Record for further questions.

Students may count three hours of internship credit toward their Minor as elective credit as long as the internship takes place at an approved security or intelligence-related agency.

Total Credit Hours		21
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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. Lower-division courses		
Select two of the following:		6

GLA 2603	Introduction to Global Affairs (Credit cannot be earned for both GLA 2603 and POL 2603.)	
	or POL 2603 Introduction to International Relations	
GLA 2633	Comparative Politics	
	or POL 2633 Comparative Politics	
POL 2503	Introduction to Political Theory	
POL 2513	Politics and the Administrative Process	
POL 2533	Introduction to Political Science	
POL 2623	Law and Society	
POL 2703	Quantitative Methods in Political Science	

B. Upper-division courses		
Select 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):		12

American Politics		
POL 2403	Mexican American Politics	
POL 3123	Political Psychology	
POL 3183	Women in Politics	
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 3313	The Supreme Court	
POL 3363	Political Parties and Interest Groups	
POL 3373	The Legislative Process	
POL 3413	Urban Development: Politics Planning, and Power	
POL 3743	Politics in Film	
POL 3773	Experiments in Democratic Renewal	
POL 3813	Politics of Federal Justice Policy Making	
POL 3823	Politics of Congressional Elections	

POL 3843	Campaign and Election Law
POL 3853	Immigration Law
Comparative Politics	
GLA 3393	Latin American Politics or POL 3393 Latin American Politics
GLA 3403	European Governments or POL 3403 European Governments
GLA 3433	Governments and Politics of Southeast Asia or POL 3433 Governments and Politics of Southeast Asia
GLA 3443	Governments and Politics of East Asia or POL 3443 Governments and Politics of East Asia
GLA 3453	Politics of Mexico or POL 3453 Politics of Mexico
GLA 3483	International Political Economy
GLA 3493	Politics of the Middle East or POL 3493 Politics of the Middle East
GLA 3783	Democracy and World Politics or POL 3783 Democracy and World Politics
GLA 4123	Advanced Techniques in Global Affairs or POL 4023 Techniques in Global Analysis
GLA 4133	Conflict, Law, and Security in Global Affairs
POL 3353	Leadership and Elites
POL 3463	Politics of the Third World or GLA 3463 Politics of the Third World
POL 3553	The Welfare State in Comparative Perspective
International Politics	
GLA 3003	International Law
GLA 3033	International Governance or POL 3033 International Governance
GLA 3043	International Human Rights or POL 3043 International Human Rights
GLA 3383	East European Politics or POL 3383 East European Politics
GLA 3423	Geopolitics of Russia and Eurasia
GLA 3483	International Political Economy or POL 3483 International Political Economy
GLA 3503	American Foreign Policy since World War II or POL 3503 American Foreign Policy since World War II
GLA 3513	International Organizations in World Politics or POL 3513 International Organizations in World Politics
GLA 3523	Force in International Politics or POL 3523 Force in International Politics
GLA 3533	The United Nations
GLA 3543	Diplomacy
GLA 3613	Nationalism and Identity Politics in a Globalizing World
GLA 3563	Current Issues in World Politics or POL 3563 Current Issues in World Politics
GLA 3763	Globalization or POL 3763 Globalization
GLA 4123	Advanced Techniques in Global Affairs or POL 4023 Techniques in Global Analysis

GLA 4133	Conflict, Law, and Security in Global Affairs
GLA 4163	Model UN or POL 4163 Model UN
Political Theory	
POL 3103	Contemporary Theories of Justice
POL 3113	American Political Thought
POL 3133	Political Philosophy: Ancient and Medieval
POL 3143	Political Philosophy: Modern
POL 3153	Political Philosophy: Contemporary
POL 3173	Justice and Social Policy
POL 3203	African American Political Thought
POL 3643	Justice among Nations
Administrative Process	
POL 3413	Urban Development: Politics Planning, and Power
POL 4323	Administrative Law and Politics
Public Law	
PAL 3863	Contracts
POL 3013	The American Legal Process
POL 3223	Judicial Politics
POL 3313	The Supreme Court
POL 3323	Constitutional Law I
POL 3333	Constitutional Law II
PAL 3513	Trial and Appellate Advocacy
POL 3583	Jurisprudence
POL 3813	Politics of Federal Justice Policy Making
POL 3843	Campaign and Election Law
POL 3853	Immigration Law
POL 4123	Legal and Philosophical Reasoning
POL 4133	Politics, Law, and Literature
POL 4323	Administrative Law and Politics

Total Credit Hours 18

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 their academic advisor.

Minor in Politics and Law

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

A. 15 semester credit hours of required courses

Required introductory coursework:	3
PAL 2623 Law and Society or PAL 2013 Introduction to Legal Studies	
2. One writing course selected from the following:	3
PAL 3023 Legal Research and Writing	
WRC 3013 Writing Strategies for the Pre-law Student	
3. Three upper-division concentration courses selected from the following:	9
GLA 3003 International Law	
GLA 3233 Theories of International Justice	

PAL 3113	Minorities and the Law
PAL 3213	Law School Studies
PAL 3223	Judicial Politics
PAL 3313	The Supreme Court
PAL 3323	Constitutional Analysis
PAL 3413	Regulatory Law and Enterprise
PAL 3513	Trial and Appellate Advocacy
PAL 3533	State Courts: Judicial Decision-Making Practice and Procedure
PAL 3583	Jurisprudence
PAL 3813	Politics of Federal Justice Policy
PAL 3843	Campaign and Election Law
PAL 3853	Immigration Law
PAL 3863	Contracts
PAL 4123	Legal and Philosophical Reasoning
PAL 4133	Legal Analysis and Argumentation
PAL 4223	Torts
PAL 4233	Federal Courts
PAL/POL 4323	Administrative Law and Politics
PAL 4933	Internship in Politics and Law
POL 3113	American Political Thought
POL 3323	Constitutional Law I
POL 3333	Constitutional Law II
POL 4133	Politics, Law, and Literature

B. 3 additional semester credit hours selected from the following: 3

ANT 3733	Political and Legal Anthropology
BLW 3013	Business Law
CLA 3053	Topics in Classical Genres
CLA 3513	Topics in Classical History
CRJ 3623	Substantive Criminal Law
CRJ 4633	Constitutional Criminal Procedure
ECO 2003	Economic Principles and Issues
ECO 3163	Evolution of Economic Thought
ENG 3223	Shakespeare: The Early Plays
ENG 3233	Shakespeare: The Later Plays
ENG 3323	History of the English Language
ES 3203	Environmental Law
GLA 3003	International Law
GLA 3033	International Governance
or POL 3033	International Governance
GLA 3043	International Human Rights
or POL 3043	International Human Rights
GLA 3233	Theories of International Justice
GLA 3513	International Organizations in World Politics
or POL 3513	International Organizations in World Politics
GLA 3633	Political Economy
or POL 3633	Political Economy
HIS 3093	United States Constitutional History
HIS 3183	Law and American Development
PAD 2013	Introduction to Public Policy
PAD 3023	Introduction to Urban Management and Policy

PAD 3033	Introduction to Nonprofit Agencies
PAD 3043	Public and Nonprofit Financial Management
PAD 3113	Managing Nonprofit Organizations
PAD 3153	Administrative Law and Policy
PHI 2043	Introductory Logic
PHI 3213	Ethics
PAL 3013	The American Legal Process
or POL 3013	The American Legal Process
PAL 3113	Minorities and the Law
PAL 3213	Law School Studies
PAL 3223	Judicial Politics
PAL 3313	The Supreme Court
PAL 3323	Constitutional Analysis
PAL 3413	Regulatory Law and Enterprise
PAL 3813	Politics of Federal Justice Policy
PAL 3583	Jurisprudence
PAL 3843	Campaign and Election Law
PAL 3853	Immigration Law
PAL 3863	Contracts
PAL 4013	Issues in Law and Society
PAL 4123	Legal and Philosophical Reasoning
PAL 4133	Legal Analysis and Argumentation
PAL 4223	Torts
PAL 4233	Federal Courts
PAL 4323	Administrative Law and Politics
or POL 4323	Administrative Law and Politics
POL 2513	Politics and the Administrative Process
POL 3113	American Political Thought
POL 3133	Political Philosophy: Ancient and Medieval
POL 3143	Political Philosophy: Modern
POL 3153	Political Philosophy: Contemporary
POL 3173	Justice and Social Policy
POL 3323	Constitutional Law I
POL 3333	Constitutional Law II
POL 3373	The Legislative Process
PAL 3583	Jurisprudence
POL 3643	Justice among Nations
POL 4133	Politics, Law, and Literature
POL 4933	Internship in Political Science

Total Credit Hours 18

Department of Psychology

The Department of Psychology offers a Bachelor of Arts (B.A.) 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 of Psychology Admission Policy

The goal of the Department of Psychology is to provide its students with a program of study that has the highest possible standards. To achieve this goal, the admission policy of the Department of Psychology is designed to identify those students most likely to succeed in their undergraduate psychology education. A psychology minor is, however, available to all UTSA students who seek to complement a different academic major with a strong foundation in psychology.

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 the Department of Psychology if they:
 - a. meet all UTSA undergraduate admission requirements
 - b. are ranked in the top 25 percent of their high school graduation class
 - c. have a cumulative grade point average of 2.0 or better for all college-level courses completed
 - d. have successfully completed evaluation under the Texas Success Initiative for unencumbered registration for courses.
2. Applicants who have completed 30 or more hours of transferable college credit will be directly admitted to the Department of Psychology if they:
 - a. meet all UTSA undergraduate admission requirements
 - b. have a cumulative grade point average of 2.0 or better for all college-level courses completed
 - c. have successfully completed the following or equivalent courses with the grade of "C-" or better:
 - i. PSY 1013 Introduction to Psychology
 - ii. and one of the following Math or Statistics courses:
MAT 1023, MAT 1073, MAT 1093, MAT 1163, MAT 1193, MAT 1214, or STA 1053.

Applicants Who Do Not Meet Direct Admission Criteria

Applicants for admission to the Department of Psychology who do not meet the criteria for direct admission stated above will be admitted to the Department as pre-psychology (PRP) students if admitted under this catalog prior to Fall 2019, or as "Social Sciences and Public Policy Studies" (XSPP) students if admitted beginning Fall 2019. Academic performance for admittance to the Department of Psychology will be evaluated after students have met all the following conditions:

1. have a grade point average of at least 2.0 for all UTSA coursework
2. have a grade point average of at least 2.0 for all UTSA Department of Psychology coursework
3. have successfully completed the following or equivalent courses with the grade of "C-" or better:
 - a. PSY 1013 Introduction to Psychology
 - b. and one of the following Math or Statistics courses:
MAT 1023, MAT 1073, MAT 1093, MAT 1163, MAT 1193, MAT 1214, or STA 1053.

A student who does not meet the requirements to declare a Psychology major after completing 12 total semester credit hours of psychology coursework at UTSA will only be permitted to take additional psychology courses that are needed for a psychology minor and will no longer be

considered a pre-psychology psychology or Social Sciences and Public Policy Studies student.

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 B.A. 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.

MAT 1023, MAT 1073, or STA 1053 is recommended to satisfy the core requirement in Mathematics. PSY 1013 should be used to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.A. degree in Psychology must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1023	College Algebra with Applications
PSY 1013	Introduction to Psychology

Degree Requirements

A. Psychology major courses

1. Lower-division courses		
a. Introduction to Psychology	3	
PSY 1013	Introduction to Psychology	
b. Select three of the following courses:	9	
PSY 2503	Developmental Psychology	
PSY 2513	Abnormal Psychology	
PSY 2533	Social Psychology	
PSY 2563	Cognitive Psychology	
c. Statistics for Psychology or approved substitute		
PSY 2073	Statistics for Psychology (Prerequisites: MAT 1023, MAT 1073, or STA 1053; and one psychology course. 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.)	3
2. Upper-Division courses		
a. Experimental Psychology		
PSY 3403	Experimental Psychology	3
PSY 3413	Experimental Projects and Laboratory	3
b. Select 12 semester credit hours of upper-division courses in psychology. The following courses may be taken as electives, but will not be counted for this requirement: Independent Study, Internship in Psychology, or Honors Thesis.	12	

B. Electives 45

Select 45 semester credit hours of electives. In fulfillment of this requirement, majors are encouraged to take at least 9 semester credit hours of upper-division coursework in disciplines outside of Psychology that support the study of Psychology. Majors who are interested in gaining experience in applied settings are encouraged to investigate options for Internship hours. Majors who plan to attend graduate school are encouraged to take at least 6 hours of upper-division Psychology courses in these free electives, and majors who intend to pursue a research focused graduate degree are encouraged to gain research experience, including through Independent Study or Honors Thesis electives.

Total Credit Hours	78
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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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
MAT 1023 or MAT 1073	College Algebra with Applications (core) or Algebra for Scientists and Engineers	3
PSY 1013	Introduction to Psychology (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15

Spring

HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
PSY 2073	Statistics for Psychology	3
PSY 2503 or PSY 2513 or PSY 2533 or PSY 2563	Developmental Psychology or Abnormal Psychology or Social Psychology or Cognitive Psychology	3
WRC 1023	Freshman Composition II (Q) (core)	3
Life & Physical Sciences core		3
Credit Hours		15

Second Year

Fall

POL 1013	Introduction to American Politics (core)	3
PSY 2513 or PSY 2503 or PSY 2533 or PSY 2563	Abnormal Psychology or Developmental Psychology or Social Psychology or Cognitive Psychology	3
PSY 2533 or PSY 2503 or PSY 2513 or PSY 2563	Social Psychology or Developmental Psychology or Abnormal Psychology or Cognitive Psychology	3
Component Area Option core		3
Life & Physical Sciences core		3
Credit Hours		15

Spring

POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
PSY 3403	Experimental Psychology	3
PSY 3413	Experimental Projects and Laboratory	3
Free elective		3
Language, Philosophy & Culture core		3
Credit Hours		15

Third Year

Fall

Free elective		3
Free elective		3
Upper-division PSY elective		3
Upper-division PSY elective		3
Creative Arts core		3
Credit Hours		15

Spring

Free elective		3
Upper division free elective		3
Upper-division free elective		3
Upper-division PSY elective		3
Upper-division PSY elective		3
Credit Hours		15

Fourth Year

Fall

Free elective		3
Free elective		3
Upper-division free elective		3
Upper-division free elective		3
Upper-division free elective (upper-division PSY recommended)		3
Credit Hours		15

Spring

Free elective		3
Free elective		3
Upper-division free elective (upper-division PSY recommended)		3

Upper-division free elective	3	
Free elective (to meet 120 hour minimum)	3	
Credit Hours		15
Total Credit Hours		120

Minor in Psychology

All students pursuing a Minor in Psychology must complete 18 semester credit hours.

A. Required courses

PSY 1013	Introduction to Psychology (This course may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences.)	3
PSY 3403	Experimental Psychology (Concurrent enrollment in PSY 3413 waived; prerequisite of PSY 2073 or equivalent required.)	3

B. Select two of the following:

PSY 2503	Developmental Psychology	6
PSY 2513	Abnormal Psychology	
PSY 2533	Social Psychology	
PSY 2563	Cognitive Psychology	

C. Upper-division psychology courses

Select 6 additional upper-division credit hours of psychology courses. The following courses may be taken as electives, but will not be counted for this requirement: Independent Study, Internship in Psychology, or Honors Thesis.

Total Credit Hours	18
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To declare a Minor in Psychology, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Department of Sociology

The Department of Sociology offers a Bachelor of Arts degree in Sociology, a Bachelor of Science degree in Public Health with a concentration in Epidemiology and Disease Control, 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, the Sociology Department encourages its students to participate in an internship. 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.

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.

- B.A. degree in Sociology (p. 225)
- B.S. degree in Public Health (Epidemiology and Disease Control Concentration) (p. 226)

Bachelor of Arts Degree in Sociology

The minimum number of semester credit hours required for the Bachelor of Arts (B.A.) 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 B.A. 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.

SOC 1013 Introduction to Sociology should be used to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3

Component Area Option	3
Total Credit Hours	42

Gateway Course

Students pursuing the B.A. degree in Sociology must successfully complete the following Gateway Course with a grade of "D-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

SOC 1013 Introduction to Sociology

Degree Requirements

A. Sociology major courses

1. Required courses. It is strongly recommended that theory and research methods requirements be completed by the first semester of the junior year.

SOC 1013	Introduction to Sociology	3
SOC 3323	Introduction to Social Research	3
SOC 3353	Sociological Theory	3
SOC 3373	Qualitative Research Methods	3
	or SOC 3393 Quantitative Research Methods	

2. Select 24 additional semester credit hours of Sociology electives as approved by the student's advisor, at least 15 semester credit hours of which must be upper division. Students are encouraged to take a broad variety of courses.

B. Single language other than English

Select 6 semester credit hours in a single language other than English 6

C. Electives

Select 36 semester credit hours of electives; 15 hours in upper-division courses. In fulfillment of this requirement, majors are encouraged to take at least 6 semester credit hours of upper-division coursework in disciplines that support the study of Sociology. 36

Total Credit Hours	78
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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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3

HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
SOC 1013	Introduction to Sociology (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Mathematics core		3
Credit Hours		15

Spring

HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
WRC 1023	Freshman Composition II (Q) (core)	3
Free elective		3
Free elective		3
Life & Physical Sciences core		3
Credit Hours		15

Second Year

Fall

SOC 3353	Sociological Theory	3
Creative Arts core		3
Component Area Option core		3
Life & Physical Sciences core		3
Free elective		3
Credit Hours		15

Spring

SOC 3323	Introduction to Social Research	3
Free elective		3
Free elective		3
Language, Philosophy, & Culture core		3
Upper-division free elective		3
Credit Hours		15

Third Year

Fall

POL 1013	Introduction to American Politics (core)	3
SOC 3373 or SOC 3393	Qualitative Research Methods or Quantitative Research Methods	3
Foreign language (semester I)		3-4
SOC elective		3
Upper-division free elective		3
Credit Hours		15-16

Spring

POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Foreign language (semester II)		3-4
Upper-division free elective		3
Upper-division SOC elective		3

Upper-division SOC elective	3
Credit Hours	15-16

Fourth Year

Fall

Upper-division SOC elective	3
Upper-division SOC elective	3
Upper-division free elective	3
Upper-division free elective	3
Upper-division free elective	3
Credit Hours	15

Spring

Free elective (to meet 120 hour minimum)	1-3
Upper-division free elective	3
Upper-division SOC elective	3
Upper-division SOC elective	3
Upper-division SOC elective	3
Credit Hours	15-13
Total Credit Hours	120

Bachelor of Science Degree in Public Health (Epidemiology and Disease Control Concentration)

The Bachelor of Science (B.S.) 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 the Health Promotion and Behavioral Science concentration is offered by the Department of Kinesiology, Health, and Nutrition (p. 102) of the College of Education and Human Development (COEHD). Bachelor of Science in Public Health majors will be advised by the Life and Health Sciences Advising Center.

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 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 B.S. degree in Public Health (Epidemiology and Disease Control 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.

STA 1053 may be used to satisfy the core requirement in Mathematics as well as a major requirement. BIO 1404 and BIO 1414 may be used to satisfy the core requirement in Natural Sciences as well as major requirements. SOC 1013 may be used to satisfy the core requirement in Social and Behavioral Sciences.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

All candidates for the B.S. degree in Public Health with a concentration in Epidemiology and Disease Control 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 38 semester credit hours of coursework:

BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
HTH 3503	Theories of Health Behavior	3
HTH 4503	Human Disease and Epidemiology	3
HTH 4543	Environmental Health and Safety	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
PUB 1113	Introduction to Public Health	3
PUB 2113	Data Management in Public Health	3
SOC 3223	Population Dynamics and Demographic Techniques	3
SOC 4043	Global Health	3

SOC 4053	Health Care System	3
STA 1053	Basic Statistics	3

B. Epidemiology and Disease Control Concentration

All candidates for the degree in Public Health with an Epidemiology and Disease Control Concentration must complete the following 18 semester credit hours of coursework:

SOC 3323	Introduction to Social Research	
SOC 4683	Health Disparities	
Select at least 12 semester hours of the following:		
ANT 3523	Medical Anthropology	
BIO 2053	Human Anatomy and Physiology I	
BIO 2063	Human Anatomy and Physiology II	
BIO 2313	Genetics	
BIO 2322	Genetics Laboratory	
BIO 3413	Physiology	
BIO 3422	Physiology Laboratory	
BIO 3433	Neurobiology	
BIO 3713	Microbiology	
BIO 3722	Microbiology Laboratory	
GES 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	

C. Advanced Public Health Requirement

All candidates for this degree must complete 6 hours of an internship in public health.

PUB 4933	Public Health Internship (repeated once)	6
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D. Foreign Language

All candidates for this degree must complete 6 hours of coursework in a single foreign language.

E. Free Electives

All candidates for this degree must complete up to 19 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.

Total Credit Hours	87
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Course Sequence Guide for B.S. Degree in Public Health (Epidemiology and Disease Control Concentration)

This course sequence guide is designed to assist students in completing the requirements for their UTSA undergraduate Public Health degree with a concentration in Epidemiology and Disease Control. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor 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

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
PUB 1113	Introduction to Public Health	3
SOC 1013	Introduction to Sociology (core)	3
STA 1053	Basic Statistics (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		15

Spring

BIO 1404	Biosciences I (core and major)	4
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
WRC 1023	Freshman Composition II (Q) (core)	3
Free elective		3
Language, Philosophy & Culture core		3
Credit Hours		16

Second Year

Fall		
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
HTH 4503	Human Disease and Epidemiology	3
Free elective		3
Free elective		3
Free elective		3
Credit Hours		15

Spring

BIO 1414	Biosciences II (core and major)	4
PUB 2113	Data Management in Public Health	3
SOC 3223	Population Dynamics and Demographic Techniques	3
Component Area Option core		3
Creative Arts core		3
Credit Hours		16

Third Year

Fall		
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
POL 1013	Introduction to American Politics (core)	3
SOC 4043	Global Health	3
Free elective (upper-division)		3
Foreign language (semester I)		3
Credit Hours		15

Spring

HTH 4543	Environmental Health and Safety	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
SOC 3323	Introduction to Social Research	3
SOC 4053	Health Care System	3
Foreign language (semester II)		3
Credit Hours		15

Fourth Year

Fall		
HTH 3503	Theories of Health Behavior	3
PUB 4933 ¹	Public Health Internship (repeated)	6
Concentration course (upper-division)		3
Concentration course (upper-division)		3
Credit Hours		15

Spring

SOC 4683	Health Disparities	3
Concentration course (upper-division)		3
Concentration course (upper-division)		3
Free elective (upper-division)		3
Free elective (to meet 120 hour minimum)		1
Credit Hours		13
Total Credit Hours		120

¹ May be repeated in a different semester.

Master of Public Health: 4+1 Program for Public Health Majors

This is a collaborative program between The University of Texas at San Antonio and The University of Texas Health Science Center at Houston - School of Public Health

Program Description

The 4+1 program provides a direct line for Public Health students to enroll in and complete their master's coursework over the course of five years, as opposed to the traditional four years of undergraduate work and two years of graduate work. The 4+1 degree between The University of Texas at San Antonio (UTSA) and The University of Texas Health Science Center at Houston - School of Public Health (UTHSCH SPH) allows undergraduate public health majors to streamline and advance their education efficiently.

The student will graduate with a baccalaureate degree in public health while earning a certificate in public health from UTHSCH SPH. Additionally, they will have the opportunity to complete a Master of Public Health (MPH) degree program in one additional year instead of the customary two years. Upon graduation from UTSA, students can immediately transition to master's status and continue on to complete the remaining degree requirements at UTHSCH SPH. Students who do not wish to continue with the master's degree will graduate with a certificate in public health from UTHSCH SPH.

Graduates will be expected to acquire the education, skill-set and experience needed to enter the professional work force in any of the varied fields of public health, or be well prepared to continue with their

education through doctoral studies or in professional degrees such as medicine, dentistry and pharmacy.

Requirements

Students in good standing in the Bachelor of Science in Public Health program who have a minimum cumulative grade point average of a 3.2 or higher and ideally have completed select degree foundation courses can apply for acceptance into the 4+1 program during their third full year of study. Students who are accepted into the 4+1 program will then complete selected online or in person graduate courses during their last year of study at the UTHSCH San Antonio Regional Campus. This coursework will simultaneously satisfy remaining undergraduate requirements, as well as the core courses for the Master of Public Health (MPH) degree. After satisfying the undergraduate degree requirements students will then apply for and finish the graduate program.

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. Required courses

SOC 1013	Introduction to Sociology	3
SOC 3323	Introduction to Social Research	3
SOC 3353	Sociological Theory	3

B. Electives

Select 12 semester credit hours of Sociology electives	12
Total Credit Hours	21

To declare a Minor in Sociology, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

College of Public Policy

Mission Statement

The College of Public Policy is dedicated to the advancement of public policy and practice that contributes to the public good within diverse local and global communities through nationally recognized research, educational programs focused on engaged learning, and collaborative partnerships.

General Information

The College of Public Policy offers a Bachelor of Arts degree in Criminal Justice and a Bachelor of Public Administration, as well as minors in Civic Engagement, Criminal Justice, Nonprofit Management, and Public Administration.

Department of Criminal Justice

The Department of Criminal Justice offers a Bachelor of Arts (B.A.) degree 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 B.A. 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.

CRJ 1113 The American Criminal Justice System may be used to satisfy the core requirement in Social and Behavioral Sciences as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3

Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Course

Students pursuing the B.A. degree in Criminal Justice must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

CRJ 1113 The American Criminal Justice System

Major Degree Requirements (78 semester credit hours)

All required and elective CRJ courses must be completed with a grade of "C-" or better to count towards a major in Criminal Justice.

A. Criminal Justice Core (18 semester credit hours)

1. 9 semester credit hours of required courses:

CRJ 1113	The American Criminal Justice System	3
CRJ 2153	Criminological Theory	3
CRJ 3013	Research Design and Analysis in Criminal Justice	3

2. 9 semester credit hours of CRJ upper-division electives, with at least 3 credits chosen from each of the sub-areas:

Sub-Area 1: Policing (3 semester credit hours)		
CRJ 3123	Investigations	3
CRJ 4413	Contemporary Police Practices	3
CRJ 4443	Special Topics in Policing	3
Sub-Area 2: Courts (3 semester credit hours)		
CRJ 3623	Substantive Criminal Law	3
CRJ 4633	Constitutional Criminal Procedure	3
CRJ 4863	Special Topics in Courts	3
Sub-Area 3: Corrections (3 semester credit hours)		
CRJ 3533	Community Corrections	3
CRJ 4603	Institutional Corrections	3
CRJ 4663	Special Topics in Corrections	3

B. Non-Core Criminal Justice Coursework

18 credit hours semester credit hours of non-core criminal justice courses chosen from the following courses:

CRJ 2213	Introduction to Policing	3
CRJ 2513	Introduction to Corrections	3
CRJ 2813	Introduction to Courts and the Legal System	3
CRJ 3123	Investigations	3
CRJ 3213	Managing Criminal Justice Organizations	3
CRJ 3233	Introduction to Forensic Science	3
CRJ 3533	Community Corrections	3
CRJ 3563	Juvenile Justice	3

CRJ 3573	Restorative Justice	3
CRJ 3623	Substantive Criminal Law	3
CRJ 3713	Ethics in Criminal Justice Practice	3
CRJ 4303	Victimology	3
CRJ 4403	Race, Ethnicity, and Criminal Justice	3
CRJ 4413	Contemporary Police Practices	3
CRJ 4443	Special Topics in Policing	3
CRJ 4453	Drugs and Crime	3
CRJ 4463	Gender and Crime	3
CRJ 4603	Institutional Corrections	3
CRJ 4633	Constitutional Criminal Procedure	3
CRJ 4653	White Collar Crime	3
CRJ 4663	Special Topics in Corrections	3
CRJ 4703	Life Course Criminology	3
CRJ 4833	Violent Crime	3
CRJ 4843	Study Abroad: International Criminal Justice	3
CRJ 4863	Special Topics in Courts	3
CRJ 4913	Independent Study	3
CRJ 4953	Special Topics in Criminal Justice/Criminology	3
CRJ 4993	Honors Thesis	3

C. Criminal Justice Internship (3 semester credit hours)

CRJ 4933	Internship in Criminal Justice	3
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3 semester credit hours of CRJ 4933 Internship in Criminal Justice taken in consultation with the Department’s internship coordinator once the prerequisites are satisfied (students are encouraged to complete at least 90 credit hours prior to enrolling). 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 or is unable to obtain a placement in an agency due to verifiable personal circumstances or background issues. May be repeated for an additional 3 credit hours with a different internship work site in a subsequent semester. Prerequisites to CRJ 4933 are CRJ 1113 The American Criminal Justice System, CRJ 2153 Criminological Theory, and CRJ 3013 Research Design and Analysis in Criminal Justice.

D. Electives (39 semester credit hours)

39 semester credit hours of electives, of which 15 must be 3000 or 4000 level courses.

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 their academic advisor 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

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
CRJ 1113	The American Criminal Justice System (core and major)	3
WRC 1013	Freshman Composition I (Q) (core)	3
University Core		3
University Core		3
		Credit Hours
		15

Spring

WRC 1023	Freshman Composition II (Q) (core)	3
University Core		3
University Core		3
Non-Core CRJ		3
Elective		3
		Credit Hours
		15

Second Year

Fall

CRJ 2153	Criminological Theory	3
University Core		3
University Core		3
University Core		3
Elective		3
		Credit Hours
		15

Spring

CRJ 3013	Research Design and Analysis in Criminal Justice	3
University Core		3
University Core		3
Elective		3
Upper-division Elective		3
		Credit Hours
		15

Third Year

Fall

University Core		3
Major Core		3
Non-Core CRJ		3
Elective		3
Upper-division Elective		3
		Credit Hours
		15

Spring

Major Core		3
Non-Core CRJ		3
Elective		3
Elective		3
Upper-division Elective		3
		Credit Hours
		15

Fourth Year

Fall

Major Core	3
Non-Core CRJ	3
Elective	3
Elective	3
Upper-division Elective	3
Credit Hours	15

Spring

CRJ 4933 Internship in Criminal Justice	3
Non-Core CRJ	3
Non-Core CRJ	3
Elective	3
Upper-division Elective	3
Credit Hours	15
Total Credit Hours	120

Minor in Criminal Justice

All students pursuing a Minor in Criminal Justice must complete 21 semester credit hours (only available for non-Criminal Justice majors).

A. Required Courses (15 semester credit hours)

1. 6 semester credit hours from the following:	6
CRJ 1113 The American Criminal Justice System	
CRJ 2153 Criminological Theory	
2. 9 semester credit hours of CRJ electives, with at least 3 credits chosen from each of the sub-areas:	9
Sub-Area 1: Policing (3 semester credit hours)	
CRJ 2213 Introduction to Policing	
CRJ 3123 Investigations	
CRJ 4413 Contemporary Police Practices	
CRJ 4443 Special Topics in Policing	
Sub-Area 2: Courts (3 semester credit hours)	
CRJ 2813 Introduction to Courts and the Legal System	
CRJ 3623 Substantive Criminal Law	
CRJ 4633 Constitutional Criminal Procedure	
CRJ 4863 Special Topics in Courts	
Sub-Area 3: Corrections (3 semester credit hours)	
CRJ 2513 Introduction to Corrections	
CRJ 3533 Community Corrections	
CRJ 4603 Institutional Corrections	
CRJ 4663 Special Topics in Corrections	

B. Elective Courses (6 semester credit hours)

6 semester credit hours of non-criminal justice core electives 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.	6
Total Credit Hours	21

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 their academic advisor.

Department of Demography

Currently, degree programs are in effect at the graduate level only.

Department of Public Administration

The Department of Public Administration offers a Bachelor of Public Administration degree which provides the opportunity for the comprehensive study of public administration, a Minor in Civic Engagement, a Minor in Public Administration, and a Minor in Nonprofit Management. Students completing the Bachelor of Public Administration degree may pursue professional careers in government, the nonprofit sector, or the private sector as well as apply for admission to law or graduate schools.

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.

All required and prescribed (elective) public administration (PAD) 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 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.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3

Component Area Option	3
Total Credit Hours	42

Gateway Course

Students pursuing the Bachelor of Public Administration degree must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete this course within two attempts, including dropping the course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

PAD 1113 Public Administration in American Society

Degree Requirements

A. Core Public Administration coursework

15 semester credit hours of core Public Administration coursework:	15
PAD 1113 Public Administration in American Society	
PAD 2013 Introduction to Public Policy	
PAD 2073 Foundations of Civic Engagement	
PAD 3163 Analysis and Assessment for Public Administration	
PAD 4853 Contemporary Issues in Public Administration	

B. Prescribed courses

21 semester credit hours selected from the courses listed below:	21
PAD 3003 Fundraising in Nonprofit Agencies	
PAD 3023 Introduction to Urban Management and Policy	
PAD 3033 Introduction to Nonprofit Agencies	
PAD 3043 Public and Nonprofit Financial Management	
PAD 3053 Urban Economic Development	
PAD 3073 Civic Leadership Integrative Seminar	
PAD 3113 Managing 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 3153 Administrative Law and Policy	
PAD 4843 Study Abroad: International Public Administration	
PAD 4911 Independent Study (prior approval required)	
PAD 4913 Independent Study (prior approval required)	
PAD 4933 Internship in Public Administration (prior approval required)	
PAD 4936 Internship in Public Administration (prior approval required)	
PAD 4963 Special Topics in Public Administration	
PAD 4993 Honors Thesis (prior approval required)	

C. Upper-division support work

18 semester credit hours of upper-division support work, chosen in consultation with an academic advisor	18
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D. Free electives

24 semester hours of free electives (some may need to be upper division in order to meet the 39 hour University requirement)	24
Total Credit Hours	78

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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
PAD 1113	Public Administration in American Society	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (Q) (core)	3
	Credit Hours	15

Spring

HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
PAD 2073	Foundations of Civic Engagement	3
WRC 1023	Freshman Composition II (Q) (core)	3
	Mathematics core	3
	Creative Arts core	3
	Credit Hours	15

Second Year

Fall		
PAD 3163	Analysis and Assessment for Public Administration	3
	Elective	3
	Elective	3
	Language, Philosophy & Culture core	3
	Life & Physical Sciences core	3
	Credit Hours	15

Spring

PAD 2013	Introduction to Public Policy	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
	Life & Physical Sciences core	3

Social & Behavioral Sciences core	3
Prescribed course (see degree requirement B)	3
Credit Hours	15

Third Year

Fall

Component Area Option core	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
Credit Hours	15

Spring

Elective	3
Elective	3
Prescribed course (see degree requirement B)	3
Upper-division support work	3
Upper-division support work	3
Credit 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
Credit Hours	15

Spring

PAD 4853	Contemporary Issues in Public Administration	3
Elective		3
Elective		3
Prescribed course (see degree requirement B)		3
Upper-division support work		3
Credit Hours		15
Total Credit Hours		120

- Minor in Civic Engagement (p. 234)
- Minor in Nonprofit Management (p. 235)
- Minor in Public Administration (p. 236)

Minor in Civic Engagement

The Minor in Civic Engagement is designed as an interdisciplinary minor that is open to all majors in the University. All students pursuing the Minor in Civic Engagement must complete 18 semester credit hours. The Diversity of Communities courses provide students with an opportunity to become competent in a variety of cultural and environmental influences in our society. The Civic Infrastructure courses provide students the opportunity to become competent in the institutions, structures, and systems that affect our community. In addition to the required courses, students will choose two additional courses from each of these competency areas.

A. Required courses:

PAD 2073	Foundations of Civic Engagement	6
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PAD 3073 Civic Leadership Integrative Seminar

B. Electives:

Students must complete 12 hours of electives. Courses to satisfy the electives requirement are divided into two competencies: Diversity of Communities and Civic Infrastructure. Two courses must come from the Diversity of Communities competency and two courses must come from the Civic Infrastructure competency.

1. Diversity of Communities

AAS 3013	African American Cultural Experiences	6
AAS 3123	Civil Rights Movement & African American Education	
AMS 3023	Modern 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	
ANT 3223	Anthropology and the Environment	
ANT 3603	Sex, Gender, and Culture	
ANT 3803	Media, Power, and Public Culture	
ANT 3873	Food, Culture, and Society	
BBL 3023	Mexican American Culture	
BBL 3033	Mexican Americans in the Southwest	
BIO 3263	The Woody Plants	
BIO 3273	Biology of Flowering Plants	
BIO 3283	Principles of Ecology	
BIO 3333	Plants and Society	
COM 3553	Intercultural Communication	
COM 3883	Small Group Communication	
COM 3893	Organizational Communication	
COM 4813	Theory and Practice of Social Interaction	
CRJ 3573	Restorative Justice	
CRJ 4403	Race, Ethnicity, and Criminal Justice	
ENT 4223	Managing the Entrepreneurial Team	
ES 3213	Biology of Flowering Plants	
ES 4213	Conservation Biology	
ES 4233	Restoration Ecology	
GES 3153	Geography of Texas	
GES 3213	Cultural Geography	
GES 3653	Gender and Cities: An Introduction to Feminist Geography	
HIS 3493	History of San Antonio	
HIS 3623	History of the Civil Rights Movement	
HTH 3003	Survey of Drugs and Health	
HTH 3513	Community Health	
IDS 3013	Diversity, Equity, and the Social Sciences	
MAS 3013	Chicana/o Queer Communities, Identities and Theories	
MAS 3033	Mexican Americans in the Southwest	
MAS 3413	Mexican American Family	
MGT 3023	Understanding People and Organizations	
MGT 3123	Organizational Communication	
MGT 3253	Interpersonal Communication	
MGT 4213	Designing Organizations	

MKT 4063	Multicultural Marketing
POL 3183	Women in Politics
POL 3293	Political Movements
SOC 3013	Social Stratification
SOC 3043	Race and Ethnic Relations
SOC 3163	Families in Society
SOC 3253	The Individual and 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 3433	Mexican Immigration and U.S. Society
SOC 4433	Culture and Society
SOC 4683	Health Disparities
WS 4623	Feminist Theories
2. Civic Infrastructure 6	
ANT 3733	Political and Legal Anthropology
ANT 3743	The Anthropology of Cyber Cultures
ANT 3823	Applied Anthropology
ARC 4183	Environmental Systems
BBL 3403	Cultural and Linguistic Equity for Schooling
BIO 4033	Conservation Biology
BIO 4053	Wildlife Biology
CE 3223	Highway Engineering
CE 4293	Geographic Information Systems (GIS)
CE 4603	Water Resources Engineering
CE 4633	Water and Wastewater Treatment
CRJ 3213	Managing Criminal Justice Organizations
CRJ 3533	Community Corrections
CRJ 3563	Juvenile Justice
ECO 3213	Economics of Antitrust and Regulation
ECO 3253	Economics of Public and Social Issues
ECO 4273	Environmental and Resource Economics
ECO 4543	Economics of School System Reform
ENT 4123	Commercialization and Enterprise Planning
ENT 4623	Tools and Objectives of the Social Enterprise
ES 3053	Environmental Remediation
ES 3143	Watershed Processes
ES 3203	Environmental Law
ES 4133	Natural Resource Policy and Administration
ES 4153	Introduction to Sustainability
ES 4163	Renewable Energy
ES 4173	Waste Water Treatment
ES 4183	Environmental Toxicology
ES 4203	Environmental Assessment
ES 4243	Wildlife Management
GES 3314	Introduction to Geographic Information Systems
GES 3453	Population Geography
GES 3513	Urban Geography
GES 3523	Introduction to Urban Planning
GES 3533	Geography of Local Economic Activity
GES 3613	Conservation of Resources

GES 3623	Geography of Natural Hazards
GES 3643	Political Geography
GES 3733	Urban and Regional Analysis
HON 3513	Policy-Making Process
HON 3523	Politics of National Memory
HTH 3503	Theories of Health Behavior
HTH 3523	Worksite Health Promotion
HTH 3563	Child and Adolescent Health Promotion
HTH 3663	Program Planning and Evaluation
HTH 4543	Environmental Health and Safety
IDS 3211	Inquiry in Earth Systems Science
MSC 3013 & MSC 3011	Training Management and the Warfighting Functions and Training Management and the Warfighting Functions Laboratory
MSC 3023 & MSC 3021	Applied Leadership in Small Unit Operations and Applied Leadership in Small Unit Operations Laboratory
MSC 4023 & MSC 4021	Company Grade Leadership and Company Grade Leadership Laboratory
MSC 4033	Practical Leadership
PAD 2013	Introduction to Public Policy
PAD 3003	Fundraising in Nonprofit Agencies
PAD 3023	Introduction to Urban Management and Policy
PAD 3033	Introduction to Nonprofit Agencies
PAD 3053	Urban Economic Development
PAD 3113	Managing Nonprofit Organizations
PAD 3133	Politics and Policies of San Antonio and South Texas
PAD 3143	Urban and Regional Planning
PAL 3113	Minorities and the Law
PAL 4013	Issues in Law and Society
POL 3253	Participation and American National Elections
POL 3413	Urban Development: Politics Planning, and Power
POL 3553	The Welfare State in Comparative Perspective
SOC 3083	Social Change and Development
SOC 3093	Religion and Society
SOC 3113	Criminology
SOC 3203	Gerontology
SOC 3223	Population Dynamics and Demographic Techniques
SOC 3503	Sociology of Education
SOC 4053	Health Care System

Total Credit Hours 18

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 required and prescribed (elective) public administration (PAD) courses must be completed with a grade of "C-" or better.

All students seeking the Minor in Nonprofit Management must complete 18 semester credit hours.

A. Required courses: 9

PAD 3003	Fundraising in Nonprofit Agencies
PAD 3033	Introduction to Nonprofit Agencies
PAD 3113	Managing Nonprofit Organizations

B. 9 semester credit hours selected from the courses listed below: 9

PAD 2013	Introduction to Public Policy
PAD 2073	Foundations of Civic Engagement
PAD 3023	Introduction to Urban Management and Policy
PAD 3043	Public and Nonprofit Financial Management
PAD 3053	Urban Economic Development
PAD 3073	Civic Leadership Integrative Seminar
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 3153	Administrative Law and Policy
PAD 4843	Study Abroad: International Public Administration
PAD 4933	Internship in Public Administration (prior approval required)
PAD 4936	Internship in Public Administration (prior approval required)
PAD 4963	Special Topics in Public Administration

Total Credit Hours 18

Students should not take PAD 4933 Internship in Public Administration or PAD 4936 Internship in Public Administration 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 with their academic advisor.

Minor in Public Administration

The Minor in Public Administration is open to students in any discipline. The minor provides undergraduate students with foundational knowledge of the public sector. This includes fundamentals of public leadership and management, the meaning of public service in a diverse society, ethical decision-making, and the practice of policy formation and implementation. All students seeking the Minor in Public Administration must complete 18 semester credit hours.

All required and prescribed (elective) public administration (PAD) courses must be completed with a grade of "C-" or better.

A. Required courses: 9

PAD 1113	Public Administration in American Society
PAD 2013	Introduction to Public Policy
PAD 2073	Foundations of Civic Engagement

B. 9 upper-division semester credit hours selected from the courses listed below: 9

PAD 3003	Fundraising in Nonprofit Agencies
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PAD 3023	Introduction to Urban Management and Policy
PAD 3033	Introduction to Nonprofit Agencies
PAD 3043	Public and Nonprofit Financial Management
PAD 3053	Urban Economic Development
PAD 3073	Civic Leadership Integrative Seminar
PAD 3113	Managing 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 3153	Administrative Law and Policy
PAD 3163	Analysis and Assessment for Public Administration
PAD 4843	Study Abroad: International Public Administration
PAD 4911	Independent Study (prior approval required)
PAD 4913	Independent Study (prior approval required)
PAD 4933	Internship in Public Administration (prior approval required)
PAD 4936	Internship in Public Administration (prior approval required)
PAD 4963	Special Topics in Public Administration
PAD 4993	Honors Thesis (prior approval required)

Total Credit Hours 18

To declare a Minor in Public Administration, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult with their academic advisor.

Department of Social Work

Currently, programs are in effect at the graduate level only.

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 underrepresented and disadvantaged groups.
- Support the engagement of faculty and students in global partnerships linked to science and education.

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 requirements, 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 institutional and overall grade point average of 3.0 and a minimum grade point average of 3.0 in the degree requirements of 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 prior to graduation. Interested students should contact their faculty advisors for additional information.

Department of Biology

The Department of Biology offers a Bachelor of Science (B.S.) degree in Biology and a B.S. degree in Microbiology and Immunology, as well as a Minor in Biology. The Department also offers Grades 7–12 Biology Teacher Certification in collaboration with UTeachSA, and the Certificate in Pathogenic Outbreak Investigations in collaboration with the Department of Computer Science and the Department Information of Systems and Cyber Security in the College of Business.

The B.S. 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 six area concentrations: Cell and Molecular Biology, Integrative Biology, Neurobiology, Plant Biology, Pre-Medical Sciences, or Grades 7–12 Biology Teacher Certification.

The B.S. degree in Microbiology and Immunology is designed to prepare students for professional careers in the medical and health service fields, research, industry, education and as specialists in industrial quality testing and control, and as regulatory workers in government agencies and public health laboratories. The program of study is structured around a comprehensive core curriculum that is similar to the Biology degree but upper-division level coursework is designed to achieve a deeper education in several specialized areas of microbiology.

Due to extensive curriculum overlap, students cannot receive a double major in Biology and Microbiology and Immunology. Students must choose between a B.S. in Biology or a B.S. in Microbiology and Immunology.

The UTSA Department of Biology offers an accelerated degree program in conjunction with UTHealth San Antonio that allows students to earn both the Bachelor of Science (B.S.) degree in Biology from UTSA and their Doctor of Dental Surgery (D.D.S.) degree at the UTHealth San Antonio Dental School within a seven-year period. For eligibility requirements and application visit the DEAP website (<http://utsa.edu/healthprofessions/deap.html>).

Admission Policy for the B.S. Degree in Biology and the B.S. Degree in Microbiology and Immunology

Admission Policy for Students Admitted Under this Catalog Prior to Fall 2019

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 Pre-Biology (PBI) or Pre-Microbiology and Immunology (PMI) students. In order to declare a major in Biology or a major in Microbiology and Immunology, a student's academic performance will be evaluated after the following criteria are met:

- A grade point average of at least 2.0 for all UTSA coursework
- A grade point average of at least 2.25 for all Biology coursework (UTSA and/or transfer credit). Transfer students, in addition, must have a grade point average of at least 2.0 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	4
BIO 1414	Biosciences II	4
CHE 1103	General Chemistry I	3
MAT 1193	Calculus for the Biosciences (Students in the teaching concentration can substitute STA 1053.)	3
PHY 1943	Physics for Scientists and Engineers I	3
or PHY 1603	Algebra-based Physics I	

PBI and PMI students are restricted from registering for upper-division (3000- and 4000-level) Biology courses without the consent of an undergraduate academic advisor in Life and Health Sciences

Advising. A student who does not meet all the above requirements after completing 60 hours of credit will no longer be considered a PBI or PMI student and their major will be changed from PBI/PMI to undeclared (UND) in the University student record system. The student must choose a major other than Biology or Microbiology and Immunology. 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 or Microbiology and Immunology major, but only after successfully completing all the PBI/PMI requirements, and upon approval of the Biology department.

Admission Policy for Students Admitted Under this Catalog Beginning Fall 2019

Direct Admission Criteria

Freshman applicants entering UTSA will be directly admitted to the Department of Biology if they:

- meet all UTSA undergraduate admission requirements, and
- are ranked in the top 15 percent of their high school class and have a minimum 1350 SAT* or 29 ACT score, and
- are Calculus I ready (<https://future.utsa.edu/ready/calculus-ready>).

* New SAT scores combine Evidence-Based Reading and Writing and Math.

Transfer applicants entering UTSA will be directly admitted to the Department of Biology if they:

- meet all UTSA undergraduate admission requirements, and
- transfer the following or equivalent courses with a grade of "C-" or better:
 - BIO 1404 Biosciences I
 - MAT 1023 College Algebra with Applications, or MAT 1073 Algebra for Scientists and Engineers.

Admission Criteria for Applicants Who Do Not Meet Direct Admission Criteria

Applicants who do not meet the criteria for direct admission stated above will be admitted to University College under "Life and Health Sciences Studies" (XLHS.) Students will have two semesters to complete both of the following courses with a grade of "C-" or better for admission to the major:

- Biosciences I (BIO 1404), and
- College Algebra (MAT 1023 or MAT 1073) or higher.

Students who do not meet the above criteria within two semesters will be classified as undeclared (UND).

Academic Standing Policy for the B.S. Degree in Biology and the B.S. Degree in Microbiology and Immunology

The goal of the Department of Biology is to provide undergraduate students a program of study that maintains high standards, and that promotes graduation in four years. To achieve this goal, the academic standing policy of the Department of Biology is designed to identify those students most likely to succeed in their undergraduate biology education.

All majors in Biology or Microbiology and Immunology must maintain:

- A minimum overall UTSA grade point average of 2.0
- A minimum overall grade point average of 2.25 in all Biology courses (UTSA and transfer credit). Transfer students, in addition, must have a grade point average of at least 2.0 for all UTSA Department of Biology coursework.

Students who do not meet these requirements are placed on Department of Biology academic probation. Once on Department of Biology academic probation, 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 or the B.S. degree in Microbiology and Immunology and classified as undeclared (UND) in the University student record system. The student must choose a major other than Biology or Microbiology and Immunology. 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 either B.S. degree program: such appeals will be granted only under extraordinary circumstances. See Life and Health Sciences Advising for required forms. All Biology majors and Microbiology and Immunology majors must have the required minimum grade point averages in order to receive the Bachelor of Science degree.

- B.S. degree in Biology (p. 238)
- B.S. degree in Microbiology and Immunology (p. 243)

Bachelor of Science Degree in Biology

The minimum number of semester credit hours required for the Bachelor of Science (B.S.) degree in Biology, including the Core Curriculum requirements, is 120. To complete the concentration in Biology Teaching Certification requires a minimum of 126 semester credit hours. 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, in addition, students must meet the grade point average requirements under the Academic Standing Policy.

For students wishing to add focus and expertise to their degree, the Department of Biology also offers the B.S. degree with a concentration in one of six areas: Cell and Molecular Biology, Integrative Biology, Neurobiology, Plant Biology, Pre-Medical Sciences, and Grades 7–12 Biology Teacher Certification. Specific grade point average requirements and courses required for each concentration are listed following the general degree requirements.

Due to extensive curriculum overlap, students cannot receive a double major in Biology and Microbiology and Immunology. Students must choose between a B.S. in Biology or a B.S. in Microbiology and Immunology.

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 B.S. 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.

MAT 1193 may be used to satisfy the core requirement in Mathematics as well as a major requirement. (Students in the teaching concentration can substitute STA 1053 for MAT 1193.) Two of the following courses may be used to satisfy the core requirement in Life and Physical Sciences, as well as major requirements: BIO 1404, BIO 1414, PHY 1943 or PHY 1963. CS 1173 may be used to satisfy the core requirement in Component Area Option as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.S. degree in Biology must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

BIO 1404	Biosciences I
BIO 1414	Biosciences II

Degree Requirements

A. Required courses in the major

1. Biology requirements:		
BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
BIO 2313 & BIO 2322	Genetics and Genetics Laboratory	5
BIO 3413 & BIO 3422	Physiology and Physiology Laboratory	5
BIO 3513 & BIO 3522	Biochemistry and Biochemistry Laboratory	5
BIO 3813 & BIO 3822	Cell Biology and Cell Biology Laboratory *	5
2. Select one of the following sequences:		5
BIO 3283 & BIO 3292	Principles of Ecology and Principles of Ecology Laboratory *	
BIO 3433 & BIO 3442	Neurobiology and Neurobiology Laboratory	
BIO 3713 & BIO 3722	Microbiology and Microbiology 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. Biology electives:

Additional biology electives at the upper-division level	12
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B. 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. Required chemistry courses:

CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	4
CHE 2603 & CHE 2612	Organic Chemistry I and Organic Chemistry I Laboratory	5
CHE 3673 or CHE 3643	Organic Chemistry II with Biological Applications Organic Chemistry II	3

2. Required mathematics and statistics courses:

MAT 1193	Calculus for the Biosciences	3
STA 1403	Probability and Statistics for the Biosciences	3

Students pursuing the Grades 7–12 Teacher Certification concentration can substitute STA 1053 for both MAT 1193 and STA 1403.

3. Required physics courses:

Select one of the following options:	8
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Option 1

PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory *	
PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory *	

Option 2

PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory *	
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory *	

4. Computer-based data visualization and analysis:

CS 1173	Data Analysis and Visualization	3
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C. Free electives

Select 12 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.

Students pursuing the Grades 7–12 Teacher Certification concentration should will take required courses for teacher certification in lieu of free electives (see concentration requirements below).

Total Credit Hours	90
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* Note: Students in the 7–12 Teaching Certification Concentration have a defined program of study outlined below. Laboratories noted by an asterisk (*) are not required for the teaching certification concentration.

Concentrations

For students interested in research, teaching, graduate, or professional programs, the Department of Biology offers six areas of concentration. To declare a concentration or obtain advice, students should consult an undergraduate advisor in Life and Health Sciences Advising. 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. Students who do not satisfy all requirements of a given concentration will receive a standard B.S. degree in Biology.

Concentration in Cell and Molecular Biology

The coursework within the Cell and Molecular Biology concentration must be completed with a minimum cumulative grade point average of 3.0 or better. Students are also encouraged to enroll in BIO 4923 Laboratory Research: Biology Concentrations as part of their program of study.

All candidates for the Concentration in Cell and Molecular Biology must complete the following:

BIO 3913	Molecular Biology	3
Select three of the following:		9
BIO 3933	Principles of Cancer Biology	
BIO 4143	Developmental Biology	
BIO 4453	Endocrinology	
BIO 4723	Virology	
BIO 4743	Immunology	
BIO 4923	Laboratory Research: Biology Concentrations (Research must be in a laboratory engaged in molecular biology research.)	
Total Credit Hours		12

Concentration in Integrative Biology

The coursework within the Integrative Biology concentration must be completed with a minimum cumulative grade point average of 3.0 or better. Students are also encouraged to enroll in BIO 4923 Laboratory Research: Biology Concentrations as part of their program of study.

All candidates for the Concentration in Integrative Biology must complete the following:

BIO 3283 & BIO 3292	Principles of Ecology and Principles of Ecology Laboratory	5
Select two of the following:		6
BIO 3213	Animal Behavior	
BIO 3323	Evolution	
BIO 4033	Conservation 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.)	
Total Credit Hours		11

Concentration in Neurobiology

The coursework within the Neurobiology concentration must be completed with a minimum cumulative grade point average of 3.0 or better. Students are also encouraged to enroll in BIO 4923 Laboratory Research: Biology Concentrations as part of their program of study.

All candidates for the Concentration in Neurobiology must complete the following:

BIO 3433 & BIO 3442	Neurobiology and Neurobiology Laboratory	5
Select two of the following:		6
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.)	
Total Credit Hours		11

Concentration in Plant Biology

The coursework within the Plant Biology concentration must be completed with a minimum cumulative grade point average of 3.0 or better. Students are also encouraged to enroll in BIO 4923 Laboratory Research: Biology Concentrations as part of their program of study.

All candidates for the Concentration in Plant Biology must complete the following:

BIO 3343	Plant Cell Biology	3
Select three of the following:		9
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.)	
Total Credit Hours		12

Concentration in Pre-Medical Sciences

The B.S. degree in Biology with a concentration in Pre-Medical Sciences is designed to prepare students for professional careers in medicine, dentistry, pharmacy or veterinary science. This concentration has a fixed curriculum that is designed to meet the requirements for entry into these professional schools and to prepare students for the MCAT, DAT, PCAT or VCAT examinations. Students will have small specialty courses that are medically focused and have a Pre-Medical Sciences Advisor within the Biology Department. The concentration is limited to 20 students each year.

Admission requirements for the Pre-Medical Sciences Concentration

The admission policy for this concentration is designed to identify those students most likely to succeed in their application to professional

programs in the medical sciences. To declare the Pre-Medical Sciences Concentration a student must:

- have already earned at least 45 semester credit hours at UTSA
- complete BIO 1404, BIO 1414, BIO 2313, CHE 1103, CHE 1113, CHE 2603, PHY 1603 and MAT 1193
- have an overall UTSA grade point average (GPA) of 3.5 or greater
- have a UTSA science GPA of 3.5 or greater
- complete a Pre-Medical Sciences Concentration application and interview.

For completion of the Pre-Medical Sciences Concentration students must have both an overall minimum UTSA GPA of 3.5 or higher, and complete all required coursework within the concentration with a minimum GPA of 3.5 or higher. All candidates for the Concentration in Pre-Medical Sciences must complete the following courses in addition to the Biology coursework, support work and Core Curriculum requirements required for the B.S. Degree in Biology:

BIO 3713	Microbiology	3
BIO 3722	Microbiology Laboratory	2
BIO 3433	Neurobiology	3
BIO 4743	Immunology	3
BIO 4813	Brain and Behavior	3
or		
BIO 3213	Animal Behavior *	
BIO 4841	Seminar in Medical Sciences	1
BIO 4842	Clinical Gross Anatomy	2
PSY 1013	Introduction to Psychology	3
Total Credit Hours		20

* NOTE: BIO 3213 is intended only for students interested in Veterinary Sciences.

Concentration in Grades 7–12 Biology Teacher Certification

The B.S. degree in Biology with Teacher Certification is designed to prepare students for professional careers in teaching Biology at the level of secondary education. The program of study is structured around a comprehensive Biology core curriculum and state requirements for grades 7–12 life science teaching certification. Students cannot receive a B.S. degree with Teacher Certification without completing the teacher certification coursework. A student who does not complete the Biology teacher certification must transfer to the B.S. degree in Biology or the B.S. degree in Microbiology and Immunology in order to receive a degree in Biology. Undergraduates seeking elementary teacher certification must complete the Interdisciplinary Studies degree.

The minimum number of semester credit hours required for the Bachelor of Science degree in Biology with Teacher Certification, including the Core Curriculum requirements, is 126. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level. The coursework within the Biology Teacher concentration must be completed with a minimum cumulative grade point average of 2.5 or better.

All candidates for the Concentration in Grades 7–12 Biology Teacher Certification must complete the following:

BIO 3043	UTeachSA Research Methods	3
BIO 3283	Principles of Ecology	3
BIO 3323	Evolution	3
BIO 3713	Microbiology	3
BIO 4813	Brain and Behavior	3
ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
LTED 3773	Reading and Writing Across the Disciplines- Grades 7–12	3
UTE 1111	Introduction to STEM Teaching Step 1 ¹	1
UTE 1122	Introduction to STEM Teaching Step 2	2
UTE 3023	Perspectives on Science and Mathematics	3
UTE 3203	Knowing and Learning in Mathematics and Science	3
UTE 3213	Classroom Interactions	3
UTE 4203	Project-Based Instruction	3
UTE 4646	Clinical Teaching	6
Total Credit Hours		42

¹ Error in course description: Credit *may* be earned for both UTE 1111 and GEM 1011.

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 their academic advisor 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

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1404	Biosciences I (core and major) ¹	4
CHE 1103	General Chemistry I ¹	3
CHE 1121	General Chemistry I Laboratory ²	1
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		14

Spring

BIO 1414	Biosciences II (core and major) ¹	4
CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory ²	1
CS 1173	Data Analysis and Visualization (core and major)	3
MAT 1193	Calculus for the Biosciences (core and major) ¹	3
WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		17

Second Year

Fall		
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory ²	2
American History core		3
Select one of the following:		4
PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory ¹	
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	
Credit Hours		12

Spring		
BIO 2313	Genetics	3
BIO 2322	Genetics Laboratory	2
CHE 3673 or CHE 3643	Organic Chemistry II with Biological Applications or Organic Chemistry II	3
STA 1403	Probability and Statistics for the Biosciences	3
Select one of the following:		4
PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory	
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	
Credit Hours		15

Third Year		
Fall		
BIO 3413	Physiology	3
BIO 3422	Physiology Laboratory	2
BIO 3513	Biochemistry	3
BIO 3522	Biochemistry Laboratory	2
Language, Philosophy & Culture core		3
Social & Behavioral Sciences core		3
Credit Hours		16

Spring		
BIO 3813	Cell Biology	3
BIO 3822	Cell Biology Laboratory	2
Free elective		3
Upper-division BIO lab (BIO 3XX2)		2
Upper-division BIO lecture (BIO 3XX3)		3
Creative Arts core		3
Credit Hours		16

Fourth Year		
Fall		
Upper-division BIO elective		3
Upper-division BIO elective		3
Upper-division BIO elective		3
American History core		3

Government-Political Science core	3
Credit Hours	15

Spring	
Upper-division BIO elective	3
Upper-division free elective	3
Upper-division free elective	3
Government-Political Science core	3
Free elective (to meet 120 hour minimum)	3
Credit Hours	15
Total Credit Hours	120

¹ 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 their academic advisor to declare a Biology major.

² 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.

B.S. in Biology with Teaching Certification – Recommended Four-Year Academic Plan

First Year		
Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1404	Biosciences I (core and major) ¹	4
CHE 1103	General Chemistry I ¹	3
CHE 1121	General Chemistry I Laboratory ²	1
WRC 1013	Freshman Composition I (Q) (core)	3
UTE 1111	Introduction to STEM Teaching Step 1	1
Credit Hours		15

Spring		Credit Hours
BIO 1414	Biosciences II (core and major) ¹	4
CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory ²	1
WRC 1023	Freshman Composition II (Q) (core)	3
UTE 1122	Introduction to STEM Teaching Step 2	2
Select one of the following: ¹		3
MAT 1193	Calculus for the Biosciences (core)	
STA 1053	Basic Statistics (core)	
Credit Hours		16

Summer		Credit Hours
American History core		3
Government-Political Science core		3
Language, Philosophy & Culture core		3
Credit Hours		9

Second Year		
Fall		
BIO 2313	Genetics	3
BIO 2322	Genetics Laboratory	2

CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory	2
UTE 3203	Knowing and Learning in Mathematics and Science	3
Select one of the following:		3
PHY 1603	Algebra-based Physics I ¹	
PHY 1943	Physics for Scientists and Engineers I	
Credit Hours		16

Spring

CS 1173	Data Analysis and Visualization (core and major)	3
UTE 3023	Perspectives on Science and Mathematics	3
Social & Behavioral Sciences core		3
Select one of the following:		3
CHE 3673	Organic Chemistry II with Biological Applications	
CHE 3643	Organic Chemistry II	
Select one of the following:		3
PHY 1623	Algebra-based Physics II	
PHY 1963	Physics for Scientists and Engineers II	
Credit Hours		15

Summer

American History core		3
Government-Political Science core		3
Creative Arts core		3
Credit Hours		9

Third Year**Fall**

BIO 3283	Principles of Ecology	3
BIO 3513	Biochemistry	3
BIO 3522	Biochemistry Laboratory	2
BIO 3713	Microbiology	3
LTED 3773	Reading and Writing Across the Disciplines-Grades 7–12	3
Credit Hours		14

Spring

BIO 3043	UTeachSA Research Methods	3
BIO 3413	Physiology	3
BIO 3422	Physiology Laboratory	2
BIO 4813	Brain and Behavior	3
UTE 3213	Classroom Interactions	3
Credit Hours		14

Fourth Year**Fall**

BIO 3323	Evolution	3
BIO 3813	Cell Biology	3
ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
UTE 4203	Project-Based Instruction	3
Credit Hours		12

Spring

UTE 4646	Clinical Teaching	6
Credit Hours		6
Total Credit Hours		126

- ¹ 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 their academic advisor to declare a Biology major.
- ² 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.

Bachelor of Science Degree in Microbiology and Immunology

The minimum number of semester credit hours required for the Bachelor of Science (B.S.) degree in Microbiology and Immunology, 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, in addition, students must meet the grade point average requirements under the Academic Standing Policy.

Due to extensive curriculum overlap, students cannot receive a double major in Biology and Microbiology and Immunology. Students must choose between a B.S. in Biology or a B.S. in Microbiology and Immunology.

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 B.S. degree in Microbiology and Immunology 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.

MAT 1193 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 Life and Physical Sciences, as well as major requirements: BIO 1404, BIO 1414, PHY 1943 or PHY 1963.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6

Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.S. degree in Microbiology and Immunology must successfully complete each of the following Gateway Courses with a grade of “C-” or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

BIO 1404	Biosciences I
BIO 1414	Biosciences II

Degree Requirements

A. Required courses in the major, 34 of which must be at the upper-division level

1. Required biology courses:		
BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
BIO 2313 & BIO 2322	Genetics and Genetics Laboratory	5
BIO 3413	Physiology	3
BIO 3513 & BIO 3522	Biochemistry and Biochemistry Laboratory	5
BIO 3713 & BIO 3722	Microbiology and Microbiology Laboratory	5
BIO 3813 & BIO 3822	Cell Biology and Cell Biology Laboratory	5
BIO 4743 & BIO 4752	Immunology and Immunology Laboratory	5
BIO 4783	Microbial Genetics and Physiology	3
BIO 4981	Senior Seminar in Microbiology and Immunology	1
2. All candidates must complete three of the following prescribed 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 4723	Virology	
BIO 4763	Parasitology	
BIO 4923	Laboratory Research: Biology Concentrations (Research must be in a laboratory engaged in microbiology or immunology research.)	
3. Two free elective courses		6

B. 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. Required chemistry courses:	18
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CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	
CHE 2603 & CHE 2612	Organic Chemistry I and Organic Chemistry I Laboratory	
CHE 3673 & CHE 3652	Organic Chemistry II with Biological Applications and Organic Chemistry II Laboratory	
2. Required mathematics and statistics courses:		6
MAT 1193	Calculus for the Biosciences	
STA 1403	Probability and Statistics for the Biosciences	
3. Required physics courses selected from one of the following options:		8
Option 1		
PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory	
PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory	
Option 2		
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	
Total Credit Hours		87

Course Sequence Guide for B.S. Degree in Microbiology and Immunology

This course sequence guide is designed to assist students in completing their UTSA undergraduate Microbiology and Immunology degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor 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 Microbiology and Immunology – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1404	Biosciences I (core and major) ¹	4
CHE 1103	General Chemistry I ¹	3
CHE 1121	General Chemistry I Laboratory ²	1
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		14

Spring

BIO 1414	Biosciences II (core and major) ¹	4
CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory ²	1

MAT 1193	Calculus for the Biosciences (core and major) ¹	3
WRC 1023	Freshman Composition II (Q) (core)	3
Free elective		3
Credit Hours		17

Second Year**Fall**

CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory ²	2
STA 1403	Probability and Statistics for the Biosciences	3
Select one of the following:		4
PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory ¹	
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory ¹	
Credit Hours		12

Spring

BIO 2313	Genetics	3
BIO 2322	Genetics Laboratory	2
CHE 3673 or CHE 3643	Organic Chemistry II with Biological Applications or Organic Chemistry II	3
CHE 3652	Organic Chemistry II Laboratory ²	2
Select one of the following:		4
PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory	
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	
Credit Hours		14

Third Year**Fall**

BIO 3513	Biochemistry	3
BIO 3522	Biochemistry Laboratory	2
BIO 3713	Microbiology	3
BIO 3722	Microbiology Laboratory	2
Language, Philosophy & Culture core		3
Social & Behavioral Sciences core		3
Credit Hours		16

Spring

BIO 3813	Cell Biology	3
BIO 3822	Cell Biology Laboratory	2
BIO 4743	Immunology	3
BIO 4752	Immunology Laboratory	2
Upper-division BIO elective		3
Creative Arts core		3
Credit Hours		16

Fourth Year**Fall**

BIO 3413	Physiology	3
BIO 4783	Microbial Genetics and Physiology	3
Upper-division BIO elective		3
American History core		3
Government-Political Science core		3
Credit Hours		15

Spring

BIO 4981	Senior Seminar in Microbiology and Immunology	1
Free elective		3
Upper-division BIO elective		3
American History core		3
Government-Political Science core		3
Component Area Option core		3
Credit Hours		16
Total Credit Hours		120

¹ In order to declare Microbiology and Immunology as a major, a student's academic performance will be evaluated after these five courses have been completed. Students must see their academic advisor to declare a Microbiology and Immunology major.

² 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 with their academic advisor. All students pursuing the minor must complete a minimum of 20 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. Required courses

BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
BIO 2313	Genetics	3

B. 3000- or 4000-level organized biology courses

Three upper-division biology courses. Excludes laboratory, independent study, research and seminar courses. Substitutions are not allowed without approval of the Biology department.

Total Credit Hours	20
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Certificate in Pathogenic Outbreak Investigations

This interdisciplinary certificate program is designed for students in biology, information systems and cyber security, computer science and

computer engineering disciplines to investigate biological and digital pathogen identification, propagation prediction, and mitigation. The required capstone project reinforces the cross-disciplinary learning fostered by the program and provides real-world practice.

This certificate is open only to biology, information systems and cyber security, computer science, and computer engineering majors. To apply for the Pathogenic Outbreak Investigations certificate, students should consult with the Director of the Office of Undergraduate Research for specific information about certificate requirements and consult with their academic advisors to verify that they have met all University requirements. All courses used to satisfy the requirements of this undergraduate certificate program must be college-level courses taken at UTSA. Students must fulfill all prerequisite requirements for elective courses.

Students pursuing the Certificate in Pathogenic Outbreak Investigations must complete a minimum of 15 semester credit hours:

A. Courses required by all majors:

Topic: Introduction to Pathogenic Outbreak Investigations: 3

- BIO 4953 Special Studies in Biology
- or CS 4593 Topics in Computer Science
- or IS 3313 Introduction to Pathogenic Outbreak Investigations

Topic: Advanced Research in Pathogenic Outbreak Investigations: 3

- BIO 4953 Special Studies in Biology
- or CS 4913 Independent Study
- or IS 4953 Special Studies in Information Systems

B. Required course according to major: 3

- BIO 3713 Microbiology
- CS 4593 Topics in Computer Science (Cloud Computing)
- IS 4953 Special Studies in Information Systems (Topic: Malware Agent Analysis)

C. Elective courses for each major. Select 6 hours from one of the following groups depending on major: 6

Biology elective options¹

- BIO 3513 Biochemistry
- BIO 3743 Bacteriology
- BIO 4743 Immunology
- BIO 5762 Fundamentals of Immunology for Biotechnology
- BIO 6973 Special Problems (Comparative Genomics)
- BIO 6973 Special Problems (Microbial Genomics)

Information Systems/Cyber Security elective options

- IS 3523 Intrusion Detection and Incident Response
- IS 4463 Web Application Security
- IS 4483 Digital Forensic Analysis I
- IS 4513 Industrial Control Systems
- IS 4523 Digital Forensic Analysis II

Computer Science elective options

- CS 3113 Principles of Cyber Security
- CS 3433 Computer and Information Security
- CS 3753 Data Science
- CS 3873 Computer Networks
- CS 4223 Bioinformatics and Big Data
- CS 4353 Unix and Network Security
- CS 4363 Cryptography

CS 4373	Data Mining
CS 4593	Topics in Computer Science
CS 4633	Simulation Techniques
CS 4643	Cellular and Mobile Technologies
CS 4653	Software and Malware Reverse Engineering
CS 4663	Distributed and Cloud Systems Security
CS 4673	Cyber Operations
CS 4683	Secure Software Development and Analysis
CS 4713	Compiler Construction
CS 4823	Parallel Programming
CS 4833	Embedded Systems
CS 4843	Cloud Computing
CS 4853	Advanced Systems Programming
CS 4863	Distributed Computing and Systems
CS 4933	Internship in Computer Science
CS 4963	Advanced Topics in Systems and Cloud
CS 4973	Advanced Topics in Data Science

Total Credit Hours 15

¹ Undergraduate biology students are permitted to take graduate courses based on need, student background/capability, and instructor consent.

Department of Chemistry

The Department of Chemistry offers a Bachelor of Arts degree in Chemistry, a Bachelor of Science degree in Chemistry, and a Bachelor of Science degree in Biochemistry, as well as a minor in Chemistry.

Admission Policy

The goal of the Department of Chemistry is to provide undergraduate students a program of study with the highest possible standards. The admission policy of the Department of Chemistry is designed to identify those students most likely to succeed in their undergraduate chemistry education.

Direct Admission Criteria Students Admitted Under this Catalog Beginning Fall 2019

Applicants entering UTSA will be directly admitted to the Department of Chemistry if they:

- meet all UTSA undergraduate admission requirements, and
- are ranked in the top 15 percent of their high school class and have a minimum 1350 SAT* or 29 ACT score, and
- are Calculus I ready (<https://future.utsa.edu/ready/calculus-ready>).

* New SAT scores combine Evidence-Based Reading and Writing and Math.

Transfer applicants will be directly admitted to the Department of Chemistry if they:

- meet all UTSA undergraduate transfer admission requirements, and
- are Calculus I ready (<https://future.utsa.edu/ready/calculus-ready>).

Students who do not meet the above requirements, but meet UTSA's general admission requirements, will be part of "Life and Health

Sciences Studies" (XLHS) or "Engineering, Mathematics, and Sciences Studies" (XEMS) where students will be able to work towards meeting the prerequisites needed to declare Biochemistry or Chemistry as their major.

Admission Criteria for Applicants Who Do Not Meet Direct Admission Criteria and Applicants Admitted Under this Catalog Prior to Fall 2019

Prior to Fall 2019, all applicants for admission to the Department of Chemistry will be admitted to the Department as Pre-Chemistry (PCM) or Pre-Biochemistry (PBC) students. Beginning Fall 2019, applicants for admission to the Department of Chemistry who do not meet the direct admission requirements, but meet UTSA's general admission requirements, will be part of "Life and Health Sciences Studies" (XLHS) or "Engineering, Mathematics, and Sciences Studies" (XEMS.)

In order to declare Chemistry or Biochemistry as a major, a PCM/PBC or XLHS/XEMS student's academic performance will be evaluated after the following requirements have been met:

- A grade point average of at least 2.0 for all UTSA coursework
- A grade point average of at least 2.5 for the six courses listed below
- 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:

CHE 1103	General Chemistry I	3
	or CHE 1143 Principles of Chemistry I	
CHE 1113	General Chemistry II	3
	or CHE 1153 Principles of Chemistry II	
CHE 1121	General Chemistry I Laboratory	1
CHE 1131	General Chemistry II Laboratory	1
MAT 1214	Calculus I	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4

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 Chemistry or Biochemistry major if they:

- meet all UTSA undergraduate admission requirements, and
- have a cumulative grade point average of 2.5 or better for transfer courses equivalent to the six course listed above, and
- have successfully satisfied all three sections (mathematics, reading, and writing) of the Texas Success Initiative (TSI)

PCM/PBC/XLHS/XEMS students are restricted from registering for upper-division (3000- and 4000-level) Chemistry courses without the consent of an undergraduate academic advisor. A student who does not meet all the above requirements after completing the above 16 credit hours will no longer be considered a PCM, PBC, XLHS, or XEMS student and their major will be changed to undeclared (UND) in the University student record system. The student must choose a major other than chemistry. A chemistry minor is, however, available to all UTSA students who seek to complement a different academic major with a strong foundation in chemistry. Students can be reinstated as a Chemistry or

Biochemistry major, but only after successfully completing all the PCM/PBC requirements, and upon approval of the Chemistry Department.

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.

- B.S. degree in Chemistry (p. 247)
- B.S. degree in Biochemistry (p. 249)
- B.A. degree in Chemistry (p. 251)

Bachelor of Science Degree in Chemistry

The Bachelor of Science (B.S.) 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 B.S 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.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement. The following two courses may be used to satisfy the core requirement in Life and Physical Sciences as well as major requirements: PHY 1943 and PHY 1963. STA 1053 may be used to satisfy the Component Area Option core requirement as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3

Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.S. degree in Chemistry must successfully complete each of the following Gateway Courses with a grade of “C-” or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

CHE 1103	General Chemistry I
or CHE 1143	Principles of Chemistry I
MAT 1214	Calculus I
MAT 1224	Calculus II

Degree Requirements

A. Required courses in chemistry

CHE 1103	General Chemistry I	3
or CHE 1143	Principles of Chemistry I	
CHE 1113	General Chemistry II	3
or CHE 1153	Principles of Chemistry II	
CHE 1121	General Chemistry I Laboratory	1
CHE 1131	General Chemistry II Laboratory	1
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory	2
CHE 2803	Quantitative Topics for Chemists	3
CHE 3214	Analytical Chemistry	4
CHE 3464	Descriptive Inorganic Chemistry	4
CHE 3643	Organic Chemistry II	3
CHE 3652	Organic Chemistry II Laboratory	2
CHE 3804	Physical Chemistry I and Laboratory	4
CHE 3824	Physical Chemistry II and Laboratory	4
CHE 4213	Instrumental Analysis	3
CHE 4303	Biochemistry	3
CHE 4463	Inorganic Chemistry	3
CHE 4913	Independent Study	3
or CHE 4923	Special Project in Chemistry	
CHE 4971	Proseminar	1

B. Approved upper-division chemistry electives

Select 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. Support work in science, mathematics, and statistics

1. Required courses:

MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4

STA 1053	Basic Statistics	3
2. Elective work from the College of Science approved by the advisor		3
D. Electives		
Select 6 semester credit hours of electives		6
Total Credit Hours		87

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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103 or CHE 1143	General Chemistry I or Principles of Chemistry I	3
CHE 1121	General Chemistry I Laboratory ¹	1
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		14

Spring

CHE 1113 or CHE 1153	General Chemistry II or Principles of Chemistry II	3
CHE 1131	General Chemistry II Laboratory ¹	1
MAT 1224	Calculus II	4
STA 1053	Basic Statistics (core and major)	3
WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		14

Second Year

Fall

CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory ¹	2
CHE 3214	Analytical Chemistry	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory (core and major)	4
Credit Hours		13

Spring

CHE 2803	Quantitative Topics for Chemists	3
CHE 3643	Organic Chemistry II	3
CHE 3652	Organic Chemistry II Laboratory ¹	2

PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory (core and major)	4
American History core		3
Credit Hours		15
Summer		
Government-Political Science core		3
College of Sciences elective		3
Credit Hours		6
Third Year		
Fall		
CHE 3804	Physical Chemistry I and Laboratory	4
CHE 4303	Biochemistry	3
Free elective		3
Government-Political Science core		3
Language, Philosophy & Culture core		3
Credit Hours		16
Spring		
CHE 3464	Descriptive Inorganic Chemistry	4
CHE 3824	Physical Chemistry II and Laboratory	4
American History core		3
Social & Behavioral Sciences core		3
Credit Hours		14
Fourth Year		
Fall		
CHE 4463	Inorganic Chemistry	3
CHE 4913 or CHE 4923	Independent Study (or Special Project in Chemistry) or Special Project in Chemistry	3
Upper-division CHE elective		3
Upper-division CHE elective		3
COS elective		3
Credit Hours		15
Spring		
CHE 4213	Instrumental Analysis	3
CHE 4971	Proseminar	1
Free elective		3
Upper-division CHE elective		3
Creative Arts core		3
Credit Hours		13
Total Credit Hours		120

¹ 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 Science Degree in Biochemistry

The Bachelor of Science (B.S.) degree in Biochemistry 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 B.S. degree in Biochemistry, meets the minimum requirements for professional chemists as defined by the American Chemical Society, and recipients receive a certificate from the American Chemical Society. It utilizes courses from the Chemistry, Biology, and Physics departments to structure education in all the major aspects of Biochemistry.

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 B.S. degree in Biochemistry 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.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement. The following two courses may be used to satisfy the core requirement in Life and Physical Sciences as well as major requirements: PHY 1943 and PHY 1963. BIO 1404 may be used to satisfy the Component Area Option core requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.S. degree in Biochemistry must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

CHE 1103	General Chemistry I
or CHE 1143	Principles of Chemistry I
MAT 1214	Calculus I
MAT 1224	Calculus II

Degree Requirements

A. Required chemistry courses

CHE 1103	General Chemistry I	3
CHE 1113	General Chemistry II	3
CHE 1121	General Chemistry I Laboratory	1
CHE 1131	General Chemistry II Laboratory	1
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory	2
CHE 3214	Analytical Chemistry	4
CHE 3643	Organic Chemistry II	3
CHE 3652	Organic Chemistry II Laboratory	2
CHE 3854	Basic Biophysical Chemistry Lecture/Lab	4
CHE 4213	Instrumental Analysis	3
CHE 4303	Biochemistry	3
or BIO 3513	Biochemistry	
CHE 4913	Independent Study	3
CHE 4971	Proseminar	1

B. Required biology and physics courses

BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
BIO 2313	Genetics	3
BIO 3522	Biochemistry Laboratory	2
BIO 3813	Cell Biology	3
BIO 3822	Cell Biology Laboratory	2
BIO 3913	Molecular Biology	3
PHY 4833	Molecular Biophysics	3

C. Upper-division biology and chemistry electives

6 additional semester credit hours of approved upper-division electives which must be organized courses in chemistry or biology at the 4000 level or above; no more than 3 semester credit hours may be from CHE 4913 Independent Study, BIO 4923 Laboratory Research, or CHE 4993 Honors Research, or BIO 4991 Honors Research.

D. Support work in science and mathematics

1. Required courses

MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4

2. Electives

8 additional semester credit hours of elective work from the College of Sciences, as approved by the advisor.

Total Credit Hours		90
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Course Sequence Guide for B.S. Degree in Biochemistry

This course sequence guide is designed to assist students in completing their UTSA undergraduate Biochemistry degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor 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. When available, students may choose to take courses during Summer terms to reduce course loads during long semesters.

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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1404	Biosciences I (core and major)	4
CHE 1103 or CHE 1143	General Chemistry I or Principles of Chemistry I	3
CHE 1121	General Chemistry I Laboratory ¹	1
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		18

Spring

BIO 1414	Biosciences II	4
CHE 1113 or CHE 1153	General Chemistry II or Principles of Chemistry II	3
CHE 1131	General Chemistry II Laboratory	1
MAT 1224	Calculus II	4
Credit Hours		12

Second Year

Fall

BIO 2313	Genetics	3
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory ¹	2
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory (core and major)	4
Credit Hours		12

Spring

CHE 3643	Organic Chemistry II	3
CHE 3652	Organic Chemistry II Laboratory ¹	2
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory (core and major)	4
WRC 1023	Freshman Composition II (Q) (core)	3
American History core		3
Credit Hours		15

Third Year**Fall**

BIO 3522	Biochemistry Laboratory	2
CHE 3214	Analytical Chemistry	4
CHE 4303 or BIO 3513	Biochemistry or Biochemistry	3
Government-Political Science core		3
Social & Behavioral Sciences core		3
Credit Hours		15

Spring

BIO 3913	Molecular Biology	3
CHE 4971	Proseminar	1
CHE 3854	Basic Biophysical Chemistry Lecture/Lab	4
Language, Philosophy, & Culture core		3
Upper-division COS elective		3
Credit Hours		14

Summer

BIO 3813	Cell Biology	3
BIO 3822	Cell Biology Laboratory	2
Credit Hours		5

Fourth Year**Fall**

CHE 4913 or BIO 4923	Independent Study (or Laboratory Research) or Laboratory Research: Biology Concentrations	3
American History core		3
Creative Arts core		3
Upper-division CHE or BIO elective		3
Upper-division COS elective		3
Credit Hours		15

Spring

CHE 4213	Instrumental Analysis	3
PHY 4833	Molecular Biophysics	3
COS elective		2
Government-Political Science core		3
Upper-division CHE or BIO elective		3
Credit Hours		14
Total Credit Hours		120

¹ 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 Departments of Chemistry and Biology for scheduling of courses.

Bachelor of Arts Degree in Chemistry

The Bachelor of Arts (B.A.) degree in Chemistry is a less comprehensive degree than the B.S. 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 B.A. 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.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement. The following two courses may be used to satisfy the core requirement in Life and Physical Sciences as well as major requirements: PHY 1943 and PHY 1963.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.A. degree in Chemistry must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

CHE 1103	General Chemistry I
or CHE 1143	Principles of Chemistry I
MAT 1214	Calculus I
MAT 1224	Calculus II

Degree Requirements**A. Required courses in chemistry**

CHE 1103	General Chemistry I	3
or CHE 1143	Principles of Chemistry I	
CHE 1113	General Chemistry II	3
or CHE 1153	Principles of Chemistry II	

CHE 1121	General Chemistry I Laboratory	1
CHE 1131	General Chemistry II Laboratory	1
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory	2
CHE 3214	Analytical Chemistry	4
CHE 3464	Descriptive Inorganic Chemistry	4
CHE 3643	Organic Chemistry II	3
or CHE 3673	Organic Chemistry II with Biological Applications	
CHE 3652	Organic Chemistry II Laboratory	2
CHE 3854	Basic Biophysical Chemistry Lecture/Lab	4
CHE 4213	Instrumental Analysis	3
CHE 4971	Proseminar	1

B. Upper-division chemistry electives

Select 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. Support work in science and mathematics

1. Required courses:

MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4

2. Select 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 with approval of the advisor of the degree-granting program.

D. Electives

Select 7 semester credit hours of electives	7
Total Credit Hours	87

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 their academic advisor 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**First Year**

Fall	Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core) 3
CHE 1103 or CHE 1143	General Chemistry I or Principles of Chemistry I 3

CHE 1121	General Chemistry I Laboratory ¹	1
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		14

Spring

CHE 1113 or CHE 1153	General Chemistry II or Principles of Chemistry II	3
CHE 1131	General Chemistry II Laboratory ¹	1
MAT 1224	Calculus II	4
WRC 1023	Freshman Composition II (Q) (core)	3
Social & Behavioral Sciences core		3
Credit Hours		14

Second Year**Fall**

CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory ¹	2
CHE 3214	Analytical Chemistry	4
Free elective		3
American History core		3
Credit Hours		15

Spring

CHE 3643 or CHE 3673	Organic Chemistry II or Organic Chemistry II with Biological Applications	3
CHE 3652	Organic Chemistry II Laboratory	2
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory (core)	4
Government-Political Science core		3
Language, Philosophy and Culture core		3
Credit Hours		15
Summer		
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory (core)	4
Credit Hours		4

Third Year**Fall**

Government-Political Science core		3
Upper-division CHE elective		3
Upper-division COS elective		3
Upper-division COS elective		3
Upper-division COS elective		3
Credit Hours		15

Spring

CHE 3464	Descriptive Inorganic Chemistry	4
CHE 3854	Basic Biophysical Chemistry Lecture/Lab	4
Component Area Option core		3
Free elective		4
Credit Hours		15

Fourth Year**Fall**

Upper-division CHE elective	3
Upper-division CHE elective	3
Upper-division COS elective	3
Upper-division COS elective	3
American History core	3
Credit Hours	15

Spring

CHE 4213	Instrumental Analysis	3
CHE 4971	Proseminar	1
Upper-division CHE elective		3
Upper-division COS elective		3
Creative Arts core		3
Credit Hours		13
Total Credit Hours		120

¹ 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 minor is to permit students majoring in other areas to obtain a solid, broad-based knowledge of chemistry. The minor 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. All students pursuing the Minor in Chemistry must complete 23 semester credit hours.

A. Required courses

CHE 1103	General Chemistry I	3
or CHE 1143	Principles of Chemistry I	
CHE 1113	General Chemistry II	3
or CHE 1153	Principles of Chemistry II	
CHE 1121	General Chemistry I Laboratory	1
CHE 1131	General Chemistry II Laboratory	1
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory	2
CHE 3643	Organic Chemistry II	3
or CHE 3673	Organic Chemistry II with Biological Applications	

B. Additional chemistry courses

Select 7 additional 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 Lecture/Lab	

Total Credit Hours 23

To declare a Minor in Chemistry, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

Department of Computer Science

The Department of Computer Science offers a Bachelor of Science degree in Computer Science with concentrations in Cloud and Systems, Cyber Security, Data Science, and Software Engineering, and a Minor in Computer Science. The department also offers the Certificate in Pathogenic Outbreak Investigations in collaboration with the Department of Biology and the Department of Information Systems and Cyber Security in the College of Business.

Admission Policy

The goal of the Department of Computer Science 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 Computer Science is designed to identify those students most likely to succeed in their undergraduate computer science education.

Direct Admission Criteria for Students Admitted Under this Catalog Beginning Fall 2019

Applicants entering UTSA will be directly admitted to the Department of Computer Science if they:

- meet all UTSA undergraduate admission requirements, and
- are ranked in the top 15 percent of their high school class and a minimum 1350 SAT* or 29 ACT score, and
- are Calculus I ready (<https://future.utsa.edu/ready/calculus-ready>).

* *New SAT scores combine Evidence-Based Reading and Writing and Math.*

Transfer applicants will be directly admitted to the Department of Computer Science if they:

- meet all UTSA undergraduate transfer admission requirements, and
- are Calculus I ready (<https://future.utsa.edu/ready/calculus-ready>).

Students who do not meet the above requirements, but meet UTSA's general admission requirements, will be part of "Engineering, Mathematics, and Sciences Studies" (XEMS) where students will be able to work towards meeting the prerequisites needed to declare Computer Science as their major.

A directly admitted computer science (CS) student who fails to complete each of the gateway courses within two attempts from the date of first admission to the Department of Computer Science will be changed from CS to undeclared (UND) in the University student record system. The student must choose a major other than computer science. A computer science minor is, however, available to all UTSA students who seek to complement a different academic major with a strong foundation in computer science.

Admission Criteria for Applicants Who Do Not Meet Direct Admission Criteria and Applicants Admitted Under this Catalog Prior to Fall 2019

Prior to Fall 2019, all applicants for admission to the Department of Computer Science will be admitted to the Department as a Pre-Computer Science (PCS) major. Beginning Fall 2019, applicants for

admission to the Department of Computer Science who do not meet the direct admission requirements, but meet UTSA's general admission requirements, will be part of "Engineering, Mathematics, and Sciences Studies" (XEMS).

All PCS or XEMS students seeking admission to the Department of Computer Science must be qualified to take MAT 1093 Precalculus or higher. In order to declare Computer Science as a major, a PCS or XEMS student must satisfy the following criteria:

- completion of CS 1083 Programming I for Computer Scientists with a grade of "C-" or better, and
- completion of CS 1713 Computer Programming II and CS 1711 Computer Programming II Recitation with a grade of "C-" or better, and
- completion of MAT 1214 Calculus I with a grade of "C-" or better, and
- have an overall GPA of 2.00 or higher on all coursework at UTSA.

A PCS or XEMS student who fails to complete the criteria to change the major to CS within two years from the date of first admission to the Department of Computer Science will be changed from PCS/XEMS to undeclared (UND) in the University student record system. The student must choose a major other than computer science. A computer science minor is, however, available to all UTSA students who seek to complement a different academic major with a strong foundation in computer science.

Bachelor of Science Degree in Computer Science

The Bachelor of Science (B.S.) degree in Computer Science is designed to prepare students 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 Cloud and Systems, Cyber Security, Data Science, and Software Engineering.

The B.S. 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 B.S. 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.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.S. degree in Computer Science must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

CS 1713	Computer Programming II
CS 1711	Computer Programming II Recitation
CS 2123	Data Structures
CS 2121	Data Structures Recitation

Degree Requirements

A. Required courses (this also satisfies the 3 hours of core curriculum requirement for Mathematics)

CS 1083	Programming I for Computer Scientists	3
CS 1713 & CS 1711	Computer Programming II and Computer Programming II Recitation	4
CS 2123 & CS 2121	Data Structures and Data Structures Recitation	4
CS 2233	Discrete Mathematical Structures	3
CS 3333	Mathematical Foundations of Computer Science	3
CS 3343	Analysis of Algorithms	3
CS 3423 & CS 3421	Systems Programming and Systems Programming Recitation	4
CS 3443	Application Programming	3
CS 3723	Programming Languages	3
CS 3733	Operating Systems	3
CS 3743	Database Systems	3
CS 3843 & CS 3841	Computer Organization and Computer Organization Recitation	4
CS 3853	Computer Architecture	3
MAT 1214	Calculus I (The student who is not prepared for MAT 1214 must take MAT 1093 Precalculus.)	4
MAT 1224	Calculus II	4

B. Upper-Division computer science courses

With prior written approval of the Undergraduate Advisor of Record, 24 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. Free electives

Electives	6
Total Credit Hours	81

Concentration in Cloud and Systems

Students may declare a Concentration in Cloud and Systems after completing CS 3423 Systems Programming with a grade of "C-" or better. All candidates for the Concentration in Cloud and Systems 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 4843	Cloud Computing	3
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plus three additional courses selected from the following (an elective can only be counted towards one concentration):

CS 3873	Computer Networks	3
CS 4243	Large-Scale Data Management	3
CS 4633	Simulation Techniques	3
CS 4663	Distributed and Cloud Systems Security	3
CS 4713	Compiler Construction	3
CS 4823	Parallel Programming	3
CS 4833	Embedded Systems	3
CS 4853	Advanced Systems Programming	3
CS 4863	Distributed Computing and Systems	3
CS 4963	Advanced Topics in Systems and Cloud	3

Concentration in Cyber Security

Students may declare a Concentration in Cyber Security after completing CS 2123 Data Structures with a grade of "C-" or better. All candidates for the Concentration in Cyber Security must fulfill the Core Curriculum requirements and the Computer Science degree requirements including, as part of the computer science electives in item B in the degree requirements, the following course:

CS 3113	Principles of Cyber Security	3
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plus three additional courses selected from the following (an elective can only be counted towards one concentration):

CS 3433	Computer and Information Security	3
CS 4353	Unix and Network Security	3
CS 4363	Cryptography	3
CS 4643	Cellular and Mobile Technologies	3
CS 4653	Software and Malware Reverse Engineering	3
CS 4663	Distributed and Cloud Systems Security	3
CS 4673	Cyber Operations	3
CS 4683	Secure Software Development and Analysis	3

Concentration in Data Science

Students may declare a Concentration in Data Science after completing CS 3343 Analysis of Algorithms with a grade of "C-" or better. All candidates for the Concentration in Data Science 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 3753	Data Science	3
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plus two additional courses selected from the following (an elective can only be counted towards one concentration):

CS 3793	Artificial Intelligence	3
CS 4223	Bioinformatics and Big Data	3
CS 4233	Computational Biology and Bioinformatics	3
CS 4243	Large-Scale Data Management	3
CS 4373	Data Mining	3
CS 4973	Advanced Topics in Data Science	3

Concentration in Software Engineering

Students may declare a Concentration in Software Engineering after completing CS 3443 Application Programming with a grade of "C-" or better. 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	3
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plus two additional courses selected from the following (an elective can only be counted towards one concentration):

CS 4393	User Interfaces	3
CS 4683	Secure Software Development and Analysis	3
CS 4723	Software Validation and Quality Assurance	3
CS 4743	Enterprise Software Engineering	3
CS 4773	Object-Oriented Systems	3
CS 4783	Advanced Software Engineering	3

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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
CS 1083	Programming I for Computer Scientists	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
Creative Arts core		3
Credit Hours		16

Spring

CS 1713	Computer Programming II	3
CS 1711	Computer Programming II Recitation	1
MAT 1224	Calculus II	4
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		14

Second Year

Fall

CS 2123	Data Structures	3
CS 2121	Data Structures Recitation	1
CS 2233	Discrete Mathematical Structures	3
CS 3333	Mathematical Foundations of Computer Science	3
POL 1013	Introduction to American Politics (core)	3
Life & Physical Sciences core		3
Credit Hours		16

Spring

CS 3423	Systems Programming	3
CS 3421	Systems Programming Recitation	1
CS 3443	Application Programming	3
CS 3843	Computer Organization	3
CS 3841	Computer Organization Recitation	1
Social & Behavioral Sciences core		3
Credit Hours		14

Third Year

Fall

CS 3343	Analysis of Algorithms	3
CS 3723	Programming Languages	3
CS 3743	Database Systems	3
Life & Physical Sciences core		3
Free Elective		3
Credit Hours		15

Spring

CS 3733	Operating Systems	3
CS 3853	Computer Architecture	3
Upper-division CS elective		3

Upper-division CS elective	3	
Free Elective	3	
Credit Hours		15

Fourth Year

Fall

Upper-division CS elective	3	
Upper-division CS elective	3	
Upper-division CS elective	3	
Component Area Option core	3	
American History core	3	
Credit Hours		15

Spring

Upper-division CS elective	3	
Upper-division CS elective	3	
Upper-division CS elective	3	
Language, Philosophy & Culture core	3	
American History core	3	
Credit Hours		15
Total Credit Hours		120

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. All required and elective courses must be completed with a grade of "C-" or better.

A. Required courses

CS 1083	Programming I for Computer Scientists	3
CS 1713 & CS 1711	Computer Programming II and Computer Programming II Recitation	4
CS 2123 & CS 2121	Data Structures and Data Structures Recitation	4

B. CS core courses or approved CS electives

Select 9 hours of additional CS core courses or approved CS electives, at least 6 hours of which must be at the upper-division level	9
Total Credit Hours	20

To declare a Minor in Computer Science, obtain advice, or seek approval of substitutions for course requirements, students should consult with their academic advisor.

Certificate in Pathogenic Outbreak Investigations

This interdisciplinary certificate program is designed for students in biology, information systems and cyber security, computer science and computer engineering disciplines to investigate biological and digital pathogen identification, propagation prediction, and mitigation. The required capstone project reinforces the cross-disciplinary learning fostered by the program and provides real-world practice.

This certificate is open only to biology, information systems and cyber security, computer science, and computer engineering majors. To apply for the Pathogenic Outbreak Investigations certificate, students should consult with the Director of the Office of Undergraduate Research for

specific information about certificate requirements and consult with their academic advisors to verify that they have met all University requirements. All courses used to satisfy the requirements of this undergraduate certificate program must be college-level courses taken at UTSA. Students must fulfill all prerequisite requirements for elective courses.

Students pursuing the Certificate in Pathogenic Outbreak Investigations must complete a minimum of 15 semester credit hours:

A. Courses required by all majors:

Topic: Introduction to Pathogenic Outbreak Investigations: 3

BIO 4953 Special Studies in Biology
or CS 4593 Topics in Computer Science
or IS 3313 Introduction to Pathogenic Outbreak Investigations

Topic: Advanced Research in Pathogenic Outbreak Investigations: 3

BIO 4953 Special Studies in Biology
or CS 4913 Independent Study
or IS 4953 Special Studies in Information Systems

B. Required course according to major: 3

BIO 3713 Microbiology
CS 4593 Topics in Computer Science (Cloud Computing)
IS 4953 Special Studies in Information Systems (Topic: Malware Agent Analysis)

C. Elective courses for each major. Select 6 hours from one of the following groups depending on major: 6

Biology elective options¹

BIO 3513 Biochemistry
BIO 3743 Bacteriology
BIO 4743 Immunology
BIO 5762 Fundamentals of Immunology for Biotechnology
BIO 6973 Special Problems (Comparative Genomics)
BIO 6973 Special Problems (Microbial Genomics)

Information Systems/Cyber Security elective options

IS 3523 Intrusion Detection and Incident Response
IS 4463 Web Application Security
IS 4483 Digital Forensic Analysis I
IS 4513 Industrial Control Systems
IS 4523 Digital Forensic Analysis II

Computer Science elective options

CS 3113 Principles of Cyber Security
CS 3433 Computer and Information Security
CS 3753 Data Science
CS 3873 Computer Networks
CS 4223 Bioinformatics and Big Data
CS 4353 Unix and Network Security
CS 4363 Cryptography
CS 4373 Data Mining
CS 4593 Topics in Computer Science
CS 4633 Simulation Techniques
CS 4643 Cellular and Mobile Technologies
CS 4653 Software and Malware Reverse Engineering
CS 4663 Distributed and Cloud Systems Security
CS 4673 Cyber Operations

CS 4683 Secure Software Development and Analysis
CS 4713 Compiler Construction
CS 4823 Parallel Programming
CS 4833 Embedded Systems
CS 4843 Cloud Computing
CS 4853 Advanced Systems Programming
CS 4863 Distributed Computing and Systems
CS 4933 Internship in Computer Science
CS 4963 Advanced Topics in Systems and Cloud
CS 4973 Advanced Topics in Data Science

Total Credit Hours 15

¹ Undergraduate biology students are permitted to take graduate courses based on need, student background/capability, and instructor consent.

Department of Environmental Science and Ecology

The Department of Environmental Science and Ecology offers a Bachelor of Science degree in Environmental Science and a Bachelor of Science degree in Multidisciplinary Science. The Environmental Science degree aims to provide students with both basic and advanced training in the field of Environmental Science, while the Multidisciplinary Science degree is designed for future secondary science teachers.

- B.S. degree in Environmental Science (p. 257)
- B.S. degree in Multidisciplinary Science (p. 260)

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 conservation and restoration ecology, environmental management, or natural resources and wildlife management. 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. Coursework includes a variety of interdisciplinary topics ranging from fundamentals of Geographic Information Systems, environmental systems, soil, water, global change, environmental law, and environmental assessment. 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. 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 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 B.S. 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.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.S. degree in Environmental Science must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

CHE 1083	Introduction to the Molecular Structure of Matter
CHE 1093	Introduction to Molecular Transformations
MAT 1193	Calculus for the Biosciences

Degree Requirements

A. Required environmental science courses (must be completed with a grade of "C-" or better)(54 hours of which 6 are in the core).

ES 1113 & ES 1111	Environmental Botany and Environmental Botany Laboratory	4
ES 1123 & ES 1121	Environmental Zoology and Environmental Zoology Laboratory	4
ES 1213 & ES 1211	Environmental Geology and Environmental Geology Laboratory	4
ES 1314	Environmental Statistics	4
ES 2013 & ES 2021	Introduction to Environmental Science I and Introduction to Environmental Science I Laboratory	4
ES 2023 & ES 2031	Introduction to Environmental Science II and Introduction to Environmental Science II Laboratory	4
ES 2113	Fundamentals of Geographic Information Systems (GIS)	3

ES 3033 & ES 3042	Environmental Ecology and Environmental Ecology Laboratory	5
ES 3123 & ES 3121	Introduction to Soils and Introduction to Soils Laboratory	4
ES 3143 & ES 3141	Watershed Processes and Watershed Processes Laboratory	4
ES 3203	Environmental Law	3
ES 4103	Global Change	3
ES 4203	Environmental Assessment	3
ES 4212	Senior Seminar	2
ES 4253	Sources, Fate, and Transport of Chemicals in the Environment	3

B. Required support courses (must be completed with a grade of "C-" or better)(15 hours of which 6 are in the core).

CHE 1083	Introduction to the Molecular Structure of Matter	3
CHE 1093	Introduction to Molecular Transformations	3
MAT 1193	Calculus for the Biosciences	3
COM 2113	Public Speaking	3
ENG 2413	Technical Writing	3

C. Area of Study courses (upper-division environmental science 21 courses completed with a grade of "C-" or better)

Twenty-one (21) semester credit hours of additional environmental science courses are required of which 15 hours must be upper division. While the degree is a general degree in environmental science, four areas of study have been identified within the B.S. degree program for students interested in conservation and restoration ecology, environmental management, natural resources and wildlife management, or aquatic sciences. Depending on their area of interest, students must select courses from the following areas of study:

Conservation and Restoration Ecology

Required courses:

ES 4213	Conservation Biology
ES 4233	Restoration Ecology

Select three courses from the following:

ES 3053	Environmental Remediation
ES 3103	Environmental Microbiology
ES 3113	Ichthyology
ES 3133	Oceanography
ES 3153	Environmental Chemistry
ES 3163	Ornithology
ES 3173	Mammalogy
ES 3183	Entomology
ES 3193	Herpetology
ES 3213	Biology of Flowering Plants
ES 3223	Woody Plants
ES 3953	Topics in Environmental Science
ES 4023	Aquatic Ecology
ES 4113	Field Biology
ES 4123	Desert Biology
ES 4133	Natural Resource Policy and Administration
ES 4143	Environmental Geomorphology
ES 4153	Introduction to Sustainability
ES 4163	Renewable Energy

ES 4183	Environmental Toxicology
ES 4243	Wildlife Management
ES 4913	Independent Study
ES 4953	Special Studies in Environmental Science

Environmental Management

Required courses:

ES 3053	Environmental Remediation
ES 3103	Environmental Microbiology
ES 4183	Environmental Toxicology

Select two courses from the following:

ES 3113	Ichthyology
ES 3133	Oceanography
ES 3153	Environmental Chemistry
ES 3953	Topics in Environmental Science
ES 4023	Aquatic Ecology
ES 4153	Introduction to Sustainability
ES 4163	Renewable Energy
ES 4173	Waste Water Treatment
ES 4243	Wildlife Management
ES 4913	Independent Study
ES 4953	Special Studies in Environmental Science

Natural Resources and Wildlife Management

Required courses:

ES 4133	Natural Resource Policy and Administration
ES 4243	Wildlife Management

Select three courses from the following:

ES 3053	Environmental Remediation
ES 3103	Environmental Microbiology
ES 3113	Ichthyology
ES 3133	Oceanography
ES 3153	Environmental Chemistry
ES 3163	Ornithology
ES 3173	Mammalogy
ES 3183	Entomology
ES 3193	Herpetology
ES 3213	Biology of Flowering Plants
ES 3223	Woody Plants
ES 3953	Topics in Environmental Science
ES 4023	Aquatic Ecology
ES 4113	Field Biology
ES 4123	Desert Biology
ES 4143	Environmental Geomorphology
ES 4153	Introduction to Sustainability
ES 4163	Renewable Energy
ES 4173	Waste Water Treatment
ES 4183	Environmental Toxicology
ES 4213	Conservation Biology
ES 4233	Restoration Ecology
ES 4913	Independent Study
ES 4953	Special Studies in Environmental Science

Aquatic Sciences

Required courses:

ES 3113	Ichthyology
ES 3133	Oceanography
ES 4023	Aquatic Ecology

Select three courses from the following:

ES 3053	Environmental Remediation
ES 3103	Environmental Microbiology
ES 3153	Environmental Chemistry
ES 3133	Oceanography
ES 3163	Ornithology
ES 3173	Mammalogy
ES 3183	Entomology
ES 3193	Herpetology
ES 3213	Biology of Flowering Plants
ES 3223	Woody Plants
ES 3953	Topics in Environmental Science
ES 4113	Field Biology
ES 4123	Desert Biology
ES 4133	Natural Resource Policy and Administration
ES 4143	Environmental Geomorphology
ES 4153	Introduction to Sustainability
ES 4163	Renewable Energy
ES 4183	Environmental Toxicology
ES 4243	Wildlife Management
ES 4913	Independent Study
ES 4953	Special Studies in Environmental Science

Total Credit Hours	90
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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 their academic advisor 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**First Year**

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
ES 1123	Environmental Zoology (core and major)	3
ES 1121	Environmental Zoology Laboratory (major)	1
MAT 1193	Calculus for the Biosciences (core and support work)	3
WRC 1013	Freshman Composition I (Q) (core)	3
Creative Arts core		3
Credit Hours		16

Spring

COM 2113	Public Speaking (core and support work)	3
ES 1113	Environmental Botany (core and major)	3
ES 1111	Environmental Botany Laboratory (major)	1
ES 1314	Environmental Statistics (major)	4
WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		14

Second Year

Fall

ES 2013	Introduction to Environmental Science I (major)	3
ES 2021	Introduction to Environmental Science I Laboratory (major)	1
ES 2113	Fundamentals of Geographic Information Systems (GIS) (major)	3
CHE 1083	Introduction to the Molecular Structure of Matter (support work)	3
POL 1013	Introduction to American Politics (core)	3
American History core		3
Credit Hours		16

Spring

ES 2023	Introduction to Environmental Science II (major)	3
ES 2031	Introduction to Environmental Science II Laboratory (major)	1
ES 1213	Environmental Geology (major)	3
ES 1211	Environmental Geology Laboratory (major)	1
CHE 1093	Introduction to Molecular Transformations (support work)	3
ENG 2413	Technical Writing (support work)	3
Credit Hours		14

Third Year

Fall

ES 3123	Introduction to Soils (major)	3
ES 3121	Introduction to Soils Laboratory (major)	1
ES 3033	Environmental Ecology (major)	3
ES 3042	Environmental Ecology Laboratory (major)	2
ES Area of Study Required (major)		3
POL 1133	Texas Politics and Society (core)	3
Credit Hours		15

Spring

ES 3143	Watershed Processes (major)	3
ES 3141	Watershed Processes Laboratory (major)	1
ES 4253	Sources, Fate, and Transport of Chemicals in the Environment (major)	3
ES Area of Study Required (major)		3

ES Area of Study Elective (major)	3	
American History core	3	
Credit Hours		16

Fourth Year

Fall

ES 4103	Global Change (major)	3
ES 3203	Environmental Law (major)	3
ES Area of Study Elective (major) ²		3
ES Area of Study Elective (major)		3
Language, Philosophy & Culture core		3
Credit Hours		15

Spring

ES 4203	Environmental Assessment (major)	3
ES 4212	Senior Seminar (major)	2
ES Area of Study Elective (major)		3
ES Area of Study Elective (major)		3
Social and Behavioral Science core		3
Credit Hours		14
Total Credit Hours		120

¹ These laboratory courses include a lecture component as indicated on the University Schedule of Classes. (Note: The prerequisite for CHE 1131 General Chemistry II Laboratory is CHE 1121 General Chemistry I Laboratory.)

² For Environmental Management and Aquatic Studies, this is the third required Area of Study course.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Environmental Science Academic Programs department for scheduling of courses.

Bachelor of Science Degree in Multidisciplinary Science

The Bachelor of Science (B.S.) degree in Multidisciplinary Science (MDS) is designed for future secondary science teachers and gives students broad training across the sciences. The MDS degree 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. Students seeking teacher certification should contact the Interdisciplinary Education 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 major and support work 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 B.S. 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.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Course

Students pursuing the B.S. degree in Multidisciplinary Science must successfully complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete the course within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

BIO 1414 Biosciences II

Degree Requirements

A. Required science and mathematics courses

AST 1013	Introduction to Astronomy	3
AST 1033	Exploration of the Solar System	3
BIO 1404	Biosciences I	4
BIO 1414	Biosciences II	4
BIO 2313	Genetics	3
BIO 3413	Physiology	3
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	4
ES 1213	Environmental Geology	3
ES 2013 & ES 2021	Introduction to Environmental Science I and Introduction to Environmental Science I Laboratory	4
ES 2023 & ES 2031	Introduction to Environmental Science II and Introduction to Environmental Science II Laboratory	4
ES 3133	Oceanography	3
GEO 3004	Rocks, Fossils, and Global Tectonics	4
MAT 1193 or STA 1053	Calculus for the Biosciences Basic Statistics	3

Select one of the following options: 8

Option 1

PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory
PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory

Option 2

PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory ¹
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory ¹

Total Credit Hours 57

¹ 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.

Certification Requirements (composite science emphasis)

B. Electives to satisfy certification requirements

C&I 4646	Clinical Teaching: Grades 7–12	6
ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
LTED 3773	Reading and Writing Across the Disciplines- Grades 7–12	3
UTE 1111	Introduction to STEM Teaching Step 1	1
UTE 1122	Introduction to STEM Teaching Step 2	2
UTE 3023	Perspectives on Science and Mathematics	3
UTE 3043	UTeachSA Research Methods	3
UTE 3203	Knowing and Learning in Mathematics and Science	3
UTE 3213	Classroom Interactions	3
UTE 4203	Project-Based Instruction	3
Total Credit Hours		30

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. 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 an undergraduate academic advisor as early as possible in their course of study, and continue to check in on a course-by-course basis should those plans change.

B.S. in Multidisciplinary Science with Grades 7–12 Teaching Certification – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1404	Biosciences I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3

UTE 1111	Introduction to STEM Teaching Step 1	1
American History core		3
Credit Hours		14

Spring

BIO 1414	Biosciences II (core and major)	4
MAT 1193 or STA 1053	Calculus for the Biosciences (core and major) or Basic Statistics	3
WRC 1023	Freshman Composition II (Q) (core)	3
UTE 1122	Introduction to STEM Teaching Step 2	2
American History core		3
Credit Hours		15

Summer

CS 1173	Data Analysis and Visualization (core)	3
PSY 1013	Introduction to Psychology (core)	3
Government-Political Science core		3
Language, Philosophy & Culture core		3
Credit Hours		12

Second Year

Fall

CHE 1103	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory ¹	1
ES 2013	Introduction to Environmental Science I	3
ES 2021	Introduction to Environmental Science I Laboratory	1
UTE 3203	Knowing and Learning in Mathematics and Science	3
Creative Arts core		3
Credit Hours		14

Spring

CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory ¹	1
ES 2023	Introduction to Environmental Science II	3
ES 2031	Introduction to Environmental Science II Laboratory	1
UTE 3213	Classroom Interactions	3
Government-Political Science core		3
Credit Hours		14

Third Year

Fall

AST 1013	Introduction to Astronomy	3
ES 1213	Environmental Geology	3
UTE 3023	Perspectives on Science and Mathematics	3
Select one of the following:		4
PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory	

PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	
Credit Hours		13

Spring

BIO 3413	Physiology	3
GEO 3004	Rocks, Fossils, and Global Tectonics	4
UTE 3043	UTeachSA Research Methods	3
UTE 4203	Project-Based Instruction	3
Select one of the following:		4
PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory	
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	
Credit Hours		17

Fourth Year

Fall

AST 1033	Exploration of the Solar System	3
BIO 2313	Genetics	3
ES 3133	Oceanography	3
ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
LTED 3773	Reading and Writing Across the Disciplines-Grades 7–12	3
Credit Hours		15

Spring

C&I 4646	Clinical Teaching: Grades 7–12	6
Credit Hours		6
Total Credit Hours		120

¹ 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 Environmental Science and Ecology for scheduling of courses.

Minor in Environmental Science

The Minor in Environmental Science is open to all majors in the University. To declare a Minor in Environmental Science or obtain advice, students should consult with an undergraduate or Environmental Science advisor. All students pursuing the Minor in Environmental Science must complete 22 semester credit hours of Environmental Science courses including a minimum of 6 hours of upper-division courses. All coursework must be completed with a grade of "C-" or better.

A. 16 semester credit hours of required courses:		16
ES 2013	Introduction to Environmental Science I	
ES 2021	Introduction to Environmental Science I Laboratory	
ES 2023	Introduction to Environmental Science II	

ES 2031	Introduction to Environmental Science II Laboratory	
ES 3033	Environmental Ecology	
ES 3042	Environmental Ecology Laboratory	
ES 3203	Environmental Law	
B. 6 additional semester credit hours from the following courses:		6
ES 3123	Introduction to Soils	
ES 3143	Watershed Processes	
ES 4133	Natural Resource Policy and Administration	
ES 4163	Renewable Energy	
ES 4203	Environmental Assessment	
ES 4213	Conservation Biology	
ES 4233	Restoration Ecology	
Total Credit Hours		22

Department of Geological Sciences

The undergraduate degree programs offered by the Department of Geological Sciences—a Bachelor of Science degree in 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.

- B.S. degree in Geology (p. 263)
- B.A. degree in Geology (p. 265)

Bachelor of Science Degree in Geology

The Bachelor of Science (B.S.) degree in Geology provides opportunities to prepare for careers in the geosciences 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 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 B.S. 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.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.S. degree in Geology must successfully complete each of the following Gateway Courses with a grade of “C-” or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory
MAT 1224	Calculus II

Degree Requirements

A. Major courses

1. Required courses		
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory	4
GEO 1123 & GEO 1131	Life Through Time and Life Through Time Laboratory	4
GEO 2003 & GEO 2011	Mineralogy and Mineralogy Laboratory	4
GEO 2113	Fundamentals of Geographic Information Systems (GIS)	3
GEO 3043 & GEO 3051	Petrology and Petrology Laboratory	4
GEO 3063 & GEO 3071	Paleontology and Paleontology Laboratory	4
GEO 3103 & GEO 3111	Structural Geology and Structural Geology Laboratory	4
GEO 3113	Geologic Field Investigations	3
GEO 3123 & GEO 3131	Sedimentation and Stratigraphy and Sedimentation and Stratigraphy Laboratory	4
GEO 4933	Field Geology Part I	3
GEO 4943	Field Geology Part II	3
2. Select 20 additional semester credit hours from the following list of 20 courses. Students should meet with their academic advisor and/or a member of the Department of Geological Sciences to verify that they have taken the necessary prerequisites.		
GEO 3013	Fundamentals of Plate Tectonics	

GEO 3143 & GEO 3151	Economic Geology and Economic Geology Laboratory	
GEO 3163	Oceanography	
GEO 3173	Polar Regions and Climate Change	
GEO 3343	Introduction to Geospatial Technologies	
GEO 3374	Geochemistry	
GEO 3383	General Geophysics	
GEO 3393	Introduction to Isotope Geochemistry	
GEO 4013	Volcanology	
GEO 4033	Profession of Geology	
GEO 4063	Advanced Environmental Geology	
GEO 4093	Principles of Remote Sensing	
GEO 4113 & GEO 4121	Geomorphology and Geomorphology Laboratory	
GEO 4623	Groundwater Hydrogeology	
GEO 4911	Independent Study	
GEO 4912	Independent Study	
GEO 4913	Independent Study	
GEO 4951	Special Studies in Geology	
GEO 4952	Special Studies in Geology	
GEO 4953	Special Studies in Geology	
GEO 4961	Special Studies in Geology Laboratory	
GEO 4993	Honors Research	

B. Courses within the College of Sciences

CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	4
CS 1173	Data Analysis and Visualization	3
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4

Total Credit Hours 87

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 their academic advisor 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

First Year		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory ¹	4
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory	4
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		14

Spring		Credit Hours
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory ¹	4
CS 1173	Data Analysis and Visualization	3
GEO 1123 & GEO 1131	Life Through Time and Life Through Time Laboratory (core and major)	4
MAT 1214	Calculus I (core and major)	4
Credit Hours		15

Second Year		Credit Hours
Fall		
GEO 2003 & GEO 2011	Mineralogy and Mineralogy Laboratory	4
GEO 3063 & GEO 3071	Paleontology and Paleontology Laboratory	4
MAT 1224	Calculus II	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory (core and major)	4
Credit Hours		16

Spring		Credit Hours
GEO 2113	Fundamentals of Geographic Information Systems (GIS)	3
GEO 3043 & GEO 3051	Petrology and Petrology Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		14

Third Year		Credit Hours
Fall		
GEO 3113	Geologic Field Investigations	3
POL 1013	Introduction to American Politics (core)	3
Upper-division GEO elective		3
Upper-division GEO elective		3

Component Area Option core		3
Credit Hours		15
Spring		
GEO 3103 & GEO 3111	Structural Geology and Structural Geology Laboratory	4
GEO 3123 & GEO 3131	Sedimentation and Stratigraphy and Sedimentation and Stratigraphy Laboratory	4
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Upper-division GEO elective		3
Credit Hours		14
Summer		
GEO 4933	Field Geology Part I	3
GEO 4943	Field Geology Part II	3
Credit Hours		6
Fourth Year		
Fall		
American History core		3
Language, Philosophy & Culture core		3
Upper-division GEO elective		3
Upper-division GEO elective		3
Credit Hours		12
Spring		
American History core		3
Creative Arts core		3
Social & Behavioral Sciences core		3
Upper-division GEO elective		3
Upper-division GEO elective		2
Credit Hours		14
Total Credit Hours		120

¹ 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 (B.A.) 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 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 B.A. 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.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.A. degree in Geology must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory
MAT 1214	Calculus I

Degree Requirements

A. Major courses

1. Required courses		
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory	4
GEO 1123 & GEO 1131	Life Through Time and Life Through Time Laboratory	4
GEO 2003 & GEO 2011	Mineralogy and Mineralogy Laboratory	4
GEO 2113	Fundamentals of Geographic Information Systems (GIS)	3
GEO 3043 & GEO 3051	Petrology and Petrology Laboratory	4
GEO 3063 & GEO 3071	Paleontology and Paleontology Laboratory	4
GEO 3123 & GEO 3131	Sedimentation and Stratigraphy and Sedimentation and Stratigraphy Laboratory	4

2. Select 16 semester credit hours at the upper-division level from among the remaining GEO course offerings. Students should meet with their academic advisor and/or a member of the Department of Geological Sciences to verify that they have taken the necessary prerequisites.

B. Courses within the College of Sciences

CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
CHE 1113 & CHE 1131 or GEO 3374	General Chemistry II and General Chemistry II Laboratory or Geochemistry	4
CS 1173	Data Analysis and Visualization	3
MAT 1214	Calculus I	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4

C. Electives

Select 18 semester credit hours of electives to meet the 120 semester credit hour degree minimum with an appropriate number of credit hours at the upper-division level to meet the UTSA minimum of 39 upper-division hours.

Total Credit Hours 84

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 their academic advisor 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

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory ¹	4
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory	4
WRC 1013	Freshman Composition I (Q) (core)	3
		Credit Hours 14

Spring

CS 1173	Data Analysis and Visualization	3
GEO 1123 & GEO 1131	Life Through Time and Life Through Time Laboratory (core and major)	4

MAT 1214	Calculus I (core and major)	4
Life & Physical Sciences core		3
		Credit Hours 14

Second Year

Fall

GEO 2003 & GEO 2011	Mineralogy and Mineralogy Laboratory	4
WRC 1023	Freshman Composition II (Q) (core)	3
Creative Arts core		3
Select one of the following:		4
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory ¹	
GEO 3374	Geochemistry	
		Credit Hours 14

Spring

GEO 2113	Fundamentals of Geographic Information Systems (GIS)	3
GEO 3043 & GEO 3051	Petrology and Petrology Laboratory	4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
Free elective		3
Free elective		3
		Credit Hours 17

Third Year

Fall

GEO 3063 & GEO 3071	Paleontology and Paleontology Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
Language, Philosophy & Culture core		3
Upper-division GEO elective		3
		Credit Hours 14

Spring

GEO 3123 & GEO 3131	Sedimentation and Stratigraphy and Sedimentation and Stratigraphy Laboratory	4
POL 1013	Introduction to American Politics (core)	3
Upper-division GEO elective		3
Upper-division GEO elective		3
Component Area Option core		3
		Credit Hours 16

Fourth Year

Fall

Free elective		3
Free elective		3
Upper-division Free elective		3
Upper-division GEO elective		3

American History core	3	
Credit Hours	15	
Spring		
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
American History core	3	
Social & Behavioral Sciences core	3	
Upper-division Free elective	3	
Upper-division GEO elective	3	
Upper-division GEO elective	1	
Credit Hours	16	
Total Credit Hours	120	

¹ 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.

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. Required courses

GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory	4
GEO 1123 & GEO 1131	Life Through Time and Life Through Time Laboratory	4
GEO 2003 & GEO 2011 or GEO 3004	Mineralogy and Mineralogy Laboratory Rocks, Fossils, and Global Tectonics	4

B. Electives

Approved upper-division geology electives	9
Total Credit Hours	21

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 their academic advisor.

Department of Mathematics

The Department of Mathematics offers a Bachelor of Science (B.S.) 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. Starting in summer 2019, the department also offers a B.S. degree in General Mathematics Studies, replacing the concentration in General Mathematical Studies under the BS. degree in Mathematics.

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 (p. 267)
- Bachelor of Science Degree in General Mathematics Studies (p. 271)

Bachelor of Science Degree in Mathematics

The Bachelor of Science (B.S.) 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 B.S. 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.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.S. degree in Mathematics must successfully complete each of the following Gateway Courses with a grade of “C-” or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1214	Calculus I
MAT 1224	Calculus II

Mathematics Degree Requirements

All candidates for the B.S. 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.)	4
MAT 1224	Calculus II	4
MAT 2214	Calculus III	4
MAT 2233	Linear Algebra	3
MAT 3013	Foundations of Mathematics	3
MAT 3213	Foundations of Analysis	3
MAT 4213	Real Analysis I	3
Total Credit Hours		24

In addition, a candidate for the B.S 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. Computer Science

Select one of the following:		3-4
CS 1063	Introduction to Computer Programming I	
CS 1713 & CS 1711	Computer Programming II and Computer Programming II Recitation	
CS 2073	Computer Programming with Engineering Applications	

B. Required courses

MAT 3613	Differential Equations I	
MAT 3633	Numerical Analysis	
MAT 4223	Real Analysis II	
MAT 4233	Modern Abstract Algebra	
MAT 4273	Topology	
STA 3003	Applied Statistics	
STA 3513	Probability and Statistics	

C. Upper-division courses in mathematics or statistics

Select 9 semester credits of upper-division courses in mathematics or statistics approved by the student's advisor

D. Electives

Select 23 or 24 semester credit hours of electives	23-24
Total Credit Hours	57

General Mathematical Studies Concentration

Note: Starting summer 2019, this concentration is replaced by the B.S. degree in General Mathematics Studies (see below (p. 271)).

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. Support work

3 semester credit hours of approved, supporting coursework that uses mathematics but is in a field other than mathematics. Courses in Computer Science, Statistics, Physics, Engineering or other disciplines may be used to satisfy this requirement.

B. Mathematics and/or Statistics

24 semester credit hours of mathematics and/or statistics

1. Mathematics

MAT 3103	Data Analysis and Interpretation	3
MAT 3123	Fundamentals of Geometry	3
or MAT 4263	Geometry	
MAT 3233	Modern Algebra	3
or MAT 4233	Modern Abstract Algebra	
MAT 4113	Computer Mathematical Topics	3
MAT 4303	Capstone Course for Mathematics	3

2. 9 approved upper-division credit hours in mathematics or statistics

C. Electives

Select 30 semester credit hours of electives. Students seeking teacher certification should use these hours for the required certification courses. Others 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.

Total Credit Hours	57
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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 Teacher 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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
American History core		3
Life & Physical Sciences core		3
Credit Hours		16

Spring

MAT 1224	Calculus II	4
WRC 1023	Freshman Composition II (Q) (core)	3
Life & Physical Sciences core		3
Select one of the following:		3-4
CS 1063	Introduction to Computer Programming I	
CS 1713 & CS 1711	Computer Programming II and Computer Programming II Recitation	
CS 2073	Computer Programming with Engineering Applications	
Credit Hours		13-14

Second Year

Fall		Credit Hours
MAT 2214	Calculus III	4
MAT 2233	Linear Algebra	3
Government-Political Science core		3
Free elective		3
Free elective		3
Credit Hours		16

Spring

MAT 3013	Foundations of Mathematics	3
STA 3003	Applied Statistics	3
Creative Arts core		3
Government-Political Science core		3
Free elective		3
Credit Hours		15

Third Year

Fall		Credit Hours
MAT 3613	Differential Equations I	3
STA 3513	Probability and Statistics	3
Social & Behavioral Sciences core		3
Upper-division MAT or STA elective		3
Free elective		3
Credit Hours		15

Spring

MAT 3213	Foundations of Analysis	3
MAT 4233	Modern Abstract Algebra	3
Component Area Option core		3
Free elective		3

Upper-division MAT or STA elective	3
Credit Hours	15

Fourth Year

Fall		Credit Hours
MAT 3633	Numerical Analysis	3
MAT 4213	Real Analysis I	3
MAT 4273	Topology	3
Free elective		3
Upper-division Free elective		3
Credit Hours		15

Spring

MAT 4223	Real Analysis II	3
Free elective ¹		2-3
Upper-division MAT or STA elective		3
American History core		3
Language Philosophy & Culture core		3
Credit Hours		15-14
Total Credit Hours		120

¹ 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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
Life & Physical Sciences core		3
Free elective		3
Credit Hours		16

Spring

MAT 1224	Calculus II	4
WRC 1023	Freshman Composition II (Q) (core)	3
Free elective		3
Life & Physical Sciences core		3

Approved support work		3
	Credit Hours	16
Second Year		
Fall		
MAT 2214	Calculus III	4
MAT 2233	Linear Algebra	3
Free elective		3
American History core		3
	Credit Hours	13
Spring		
MAT 3013	Foundations of Mathematics	3
MAT 3103	Data Analysis and Interpretation	3
Government-Political Science core		3
Free elective		3
Free elective		3
	Credit Hours	15
Third Year		
Fall		
MAT 3123 or MAT 4263	Fundamentals of Geometry or Geometry	3
Free elective		3
Upper-division free elective		3
Government-Political Science core		3
Social & Behavioral Sciences core		3
	Credit Hours	15
Spring		
MAT 3213	Foundations of Analysis	3
MAT 3233 or MAT 4233	Modern Algebra or Modern Abstract Algebra	3
Component Area Option core		3
Upper-division free elective		3
Upper-division MAT or STA elective		3
	Credit Hours	15
Fourth Year		
Fall		
MAT 4213	Real Analysis I	3
MAT 4303	Capstone Course for Mathematics	3
Free elective		3
Free elective		3
Upper-division MAT elective (not MAT 3253)		3
	Credit Hours	15
Spring		
MAT 4113	Computer Mathematical Topics	3
Upper-division MAT or STA elective		3
American History core		3
Creative Arts core		3
Language, Philosophy & Culture core		3
	Credit Hours	15
	Total Credit Hours	120

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 their academic advisor 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

First Year		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1214	Calculus I (core and major)	4
UTE 1111	Introduction to STEM Teaching Step 1	1
WRC 1013	Freshman Composition I (Q) (core)	3
American History core		3
	Credit Hours	14
Spring		
MAT 1224	Calculus II	4
UTE 1122	Introduction to STEM Teaching Step 2	2
WRC 1023	Freshman Composition II (Q) (core)	3
Life & Physical Sciences core		3
Language, Philosophy & Culture core		3
	Credit Hours	15
Summer		
American History core		3
Component Area Option core		3
Social & Behavioral Sciences core		3
	Credit Hours	9
Second Year		
Fall		
MAT 2214	Calculus III	4
MAT 3013	Foundations of Mathematics	3
UTE 3203	Knowing and Learning in Mathematics and Science	3
Creative Arts core		3
Government-Political Science core		3
	Credit Hours	16
Spring		
MAT 2233	Linear Algebra	3
MAT 3103	Data Analysis and Interpretation	3
UTE 2113	Functions and Modeling	3
UTE 3213	Classroom Interactions	3

Life & Physical Sciences core		3
	Credit Hours	15
Summer		
MAT 4113	Computer Mathematical Topics	3
Government-Political Science core		3
	Credit Hours	6
Third Year		
Fall		
MAT 3123 or MAT 4263	Fundamentals of Geometry or Geometry	3
MAT 3233 or MAT 4233	Modern Algebra or Modern Abstract Algebra	3
UTE 3023	Perspectives on Science and Mathematics	3
Approved support work		3
Upper-division MAT or STA elective		3
	Credit Hours	15
Spring		
ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
MAT 3213	Foundations of Analysis	3
Upper-division MAT elective (not MAT 3253)		3
Upper-division MAT or STA elective		3
	Credit Hours	12
Fourth Year		
Fall		
MAT 4213	Real Analysis I	3
MAT 4303	Capstone Course for Mathematics	3
LTED 3773	Reading and Writing Across the Disciplines-Grades 7–12	3
UTE 4203	Project-Based Instruction	3
	Credit Hours	12
Spring		
C&I 4646	Clinical Teaching: Grades 7–12	6
	Credit Hours	6
	Total Credit Hours	120

Note: Some courses are only offered once a year; fall or spring. Check with the Department of Mathematics for scheduling of courses.

Bachelor of Science Degree in General Mathematics Studies

This program became effective summer 2019.

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.

Requirements for students pursuing teacher certification are different from degree requirements. In addition to specific course requirements, teacher certification in Texas also requires passing scores on the Texas Success Initiative approved assessment instrument test and acceptable scores on the state-mandated exit competency test. Complete information may be obtained in the Teacher Certification Center at UTSA.

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 B.S. degree in General Mathematics Studies 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.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.S. degree in General Mathematics Studies must successfully complete each of the following Gateway Courses with a grade of “C-” or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of “W” or taking an equivalent course at another institution, will be required to change his or her major.

MAT 1214	Calculus I
MAT 1224	Calculus II

General Mathematics Studies Degree Requirements

A. Required Mathematics courses

MAT 1214	Calculus I (The student who is not prepared to begin MAT 1214 must take MAT 1093 Precalculus.)	4
MAT 1224	Calculus II	4
MAT 2214	Calculus III	4
MAT 2233	Linear Algebra	3
MAT 3013	Foundations of Mathematics	3
MAT 3213	Foundations of Analysis	3
MAT 4213	Real Analysis I	3

B. Support work

3 semester credit hours of approved, supporting coursework that uses mathematics but is in a field other than mathematics. Courses in Computer Science, Statistics, Physics, Engineering or other disciplines may be used to satisfy this requirement.

C. Mathematics and/or Statistics

24 semester credit hours of mathematics and/or statistics

1. Mathematics

MAT 3103	Data Analysis and Interpretation	3
MAT 3123	Fundamentals of Geometry	3
or MAT 4263	Geometry	
MAT 3233	Modern Algebra	3
or MAT 4233	Modern Abstract Algebra	
MAT 4113	Computer Mathematical Topics	3
MAT 4303	Capstone Course for Mathematics	3

2. 9 approved upper-division credit hours in mathematics or statistics 9

D. Electives

Select 30 semester credit hours of electives. Students seeking teacher certification should use these hours for the required certification courses. Others 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.

Total Credit Hours 81

Requirements for students pursuing teacher certification 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 Teacher Certification Center at UTSA.

Course Sequence Guide for B.S. Degree in General Mathematics Studies

This course sequence guide is designed to assist students in completing their UTSA undergraduate General Mathematics Studies degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor 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 General Mathematics Studies – Recommended Four-Year Academic Plan

First Year

		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
	Life & Physical Sciences core	3
	Free elective	3
	Credit Hours	16

Spring

MAT 1224	Calculus II	4
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WRC 1023	Freshman Composition II (Q) (core)	3
	Free elective	3
	Life & Physical Sciences core	3
	Approved support work	3

Credit Hours 16

Second Year

Fall

MAT 2214	Calculus III	4
MAT 2233	Linear Algebra	3
	Free elective	3
	American History core	3

Credit Hours 13

Spring

MAT 3013	Foundations of Mathematics	3
MAT 3103	Data Analysis and Interpretation	3
	Government-Political Science core	3
	Free elective	3
	Free elective	3

Credit Hours 15

Third Year

Fall

MAT 3123	Fundamentals of Geometry	3
or MAT 4263	or Geometry	
	Free elective	3
	Upper-division free elective	3
	Government-Political Science core	3
	Social & Behavioral Sciences core	3

Credit Hours 15

Spring

MAT 3213	Foundations of Analysis	3
MAT 3233	Modern Algebra	3
or MAT 4233	or Modern Abstract Algebra	
	Component Area Option core	3
	Upper-division free elective	3
	Upper-division MAT or STA elective	3

Credit Hours 15

Fourth Year

Fall

MAT 4213	Real Analysis I	3
MAT 4303	Capstone Course for Mathematics	3
	Free elective	3
	Free elective	3
	Upper-division MAT elective (not MAT 3253)	3

Credit Hours 15

Spring

MAT 4113	Computer Mathematical Topics	3
	Upper-division MAT or STA elective	3
	American History core	3
	Creative Arts core	3

Language, Philosophy & Culture core	3
Credit Hours	15
Total Credit Hours	120

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 General Mathematics Studies with teacher certification

This course sequence guide is designed to assist students in completing their UTSA undergraduate General Mathematics Studies degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with their academic advisor 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 General Mathematics Studies with teacher certification – Recommended Four-Year Academic Plan

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1214	Calculus I (core and major)	4
UTE 1111	Introduction to STEM Teaching Step 1	1
WRC 1013	Freshman Composition I (Q) (core)	3
American History core		3
	Credit Hours	14

Spring

MAT 1224	Calculus II	4
UTE 1122	Introduction to STEM Teaching Step 2	2
WRC 1023	Freshman Composition II (Q) (core)	3
Life & Physical Sciences core		3
Language, Philosophy & Culture core		3
	Credit Hours	15

Summer

American History core		3
Component Area Option core		3
Social & Behavioral Sciences core		3
	Credit Hours	9

Second Year

Fall		
MAT 2214	Calculus III	4
MAT 3013	Foundations of Mathematics	3
UTE 3203	Knowing and Learning in Mathematics and Science	3
Creative Arts core		3
Government-Political Science core		3
	Credit Hours	16

Spring

MAT 2233	Linear Algebra	3
MAT 3103	Data Analysis and Interpretation	3
UTE 2113	Functions and Modeling	3
UTE 3213	Classroom Interactions	3
Life & Physical Sciences core		3
	Credit Hours	15

Summer

MAT 4113	Computer Mathematical Topics	3
Government-Political Science core		3
	Credit Hours	6

Third Year

Fall

MAT 3123 or MAT 4263	Fundamentals of Geometry or Geometry	3
MAT 3233 or MAT 4233	Modern Algebra or Modern Abstract Algebra	3
UTE 3023	Perspectives on Science and Mathematics	3
Approved support work		3
Upper-division MAT or STA elective		3
	Credit Hours	15

Spring

ESL 3063	Second Language Teaching and Learning for Grades 4–8 and 7–12	3
MAT 3213	Foundations of Analysis	3
Upper-division MAT elective (not MAT 3253)		3
Upper-division MAT or STA elective		3
	Credit Hours	12

Fourth Year

Fall

MAT 4213	Real Analysis I	3
MAT 4303	Capstone Course for Mathematics	3
LTED 3773	Reading and Writing Across the Disciplines-Grades 7–12	3
UTE 4203	Project-Based Instruction	3
	Credit Hours	12

Spring

C&I 4646	Clinical Teaching: Grades 7–12	6
	Credit Hours	6
	Total Credit Hours	120

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 23 semester credit hours. All required and elective mathematics, computer science, and statistics courses must be completed with a grade of “C-” or better.

A. Required courses

MAT 1214	Calculus I	4
MAT 1224	Calculus II	4

MAT 2214 or CS 3333	Calculus III ¹ Mathematical Foundations of Computer Science	3-4
MAT 2233	Linear Algebra	3
MAT 3613	Differential Equations I ²	3

B. Approved upper-division mathematics electives

Select a minimum of 6 semester credit hours of approved upper-division mathematics electives	6
Total Credit Hours	23-24

- ¹ For Computer Science majors, substitute CS 3333 Mathematical Foundations of Computer Science and Recitation.
- ² Computer Science majors may substitute 3 hours of an approved upper-division mathematics elective.

To declare a Minor in Mathematics, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor and the Undergraduate Advisor of Record for the Department of Mathematics.

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 the ability to apply for positions in industry and government, as well as entry into professional and graduate schools.

- B.S. degree in Physics (p. 274)
- B.A. degree in Physics (p. 276)

Bachelor of Science Degree in Physics

The Bachelor of Science (B.S.) 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 B.S. 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.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement. PHY 1943 and PHY 1963 may be used to satisfy the core requirement in Life and Physical Sciences as well as major requirements.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.S. degree in Physics must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

PHY 2103 & PHY 2111	Modern Physics and Modern Physics Laboratory
PHY 2823	Mathematical Physics I
PHY 3203	Classical Mechanics I

Degree Requirements

A. Physics and Astronomy courses

1. Required courses completed with a grade of "C-" or better:		
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
PHY 2103 & PHY 2111	Modern Physics and Modern Physics Laboratory	4
PHY 2823	Mathematical Physics I	3
PHY 3203	Classical Mechanics I	3
PHY 3293	Thermal Physics	3
PHY 3343	Physics Research Laboratory	3
PHY 3423	Electricity and Magnetism	3
PHY 3443	Modern Optics	3
PHY 3513	Electrodynamics	3
PHY 3583	Mathematical Physics II	3
PHY 4263	Quantum Mechanics I	3
PHY 4423	Quantum Mechanics II	3
PHY 4983	Unifying Concepts in Physics	3

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	9
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 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	Independent Study	
PHY 4953	Special Studies in Physics	
PHY 4993	Honors Research	

B. Required courses in the College of Sciences

1. Required courses (excluding physics):

CHE 1103	General Chemistry I	3
CHE 1113	General Chemistry II	3
CHE 1121	General Chemistry I Laboratory	1
CS 1063	Introduction to Computer Programming I	3
or CS 1173	Data Analysis and Visualization	
or CS 2073	Computer Programming with Engineering Applications	
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
MAT 2214	Calculus III	4
MAT 2233	Linear Algebra	3
MAT 3613	Differential Equations I	3

2. Additional approved courses in the College of Sciences. 5

Total Credit Hours 87

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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103 or CHE 1143	General Chemistry I or Principles of Chemistry I	3
CHE 1121	General Chemistry I Laboratory ¹	1
CS 1063 or CS 1173 or CS 2073	Introduction to Computer Programming I or Data Analysis and Visualization or Computer Programming with Engineering Applications	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		17

Spring

CHE 1113 or CHE 1153	General Chemistry II or Principles of Chemistry II	3
MAT 1224	Calculus II	4
PHY 1943	Physics for Scientists and Engineers I (core and major)	3
PHY 1951	Physics for Scientists and Engineers I Laboratory	1
WRC 1023	Freshman Composition II (Q) (core)	3
Credit Hours		14

Second Year

Fall		Credit Hours
MAT 2214	Calculus III	4
MAT 2233	Linear Algebra	3
PHY 1963	Physics for Scientists and Engineers II (core and major)	3
PHY 1971	Physics for Scientists and Engineers II Laboratory	1
POL 1013	Introduction to American Politics (core)	3
Credit Hours		14

Spring

MAT 3613	Differential Equations I	3
PHY 2103	Modern Physics	3
PHY 2111	Modern Physics Laboratory	1
PHY 2823	Mathematical Physics I	3
PHY 3203	Classical Mechanics I	3
American History core		3
Credit Hours		16

Third Year

Fall		Credit Hours
PHY 3293	Thermal Physics	3
PHY 3423	Electricity and Magnetism	3
PHY 3443	Modern Optics	3
PHY 3583	Mathematical Physics II	3

POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Credit Hours		15
Spring		
PHY 3343	Physics Research Laboratory	3
PHY 3513	Electrodynamics	3
PHY 4263	Quantum Mechanics I	3
Language, Philosophy & Culture core		3
Social & Behavioral Sciences core		3
Credit Hours		15
Fourth Year		
Fall		
PHY 4423	Quantum Mechanics II	3
College of Sciences elective		3
Upper-division AST or PHY elective ²		3
Upper-division AST or PHY elective ²		3
American History core		3
Credit Hours		15
Spring		
PHY 4983	Unifying Concepts in Physics	3
College of Sciences elective		2
Upper-division AST or PHY elective ²		3
Creative Arts core		3
Component Area Option core		3
Credit Hours		14
Total Credit Hours		120

¹ This laboratory course includes a lecture component as indicated on the University Schedule of Classes.

² 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 (B.A.) 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 B.A. 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.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement. PHY 1943 and PHY 1963 may be used to satisfy the core requirement in Life and Physical Sciences as well as major requirements.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Gateway Courses

Students pursuing the B.A. degree in Physics must successfully complete each of the following Gateway Courses with a grade of "C-" or better in no more than two attempts. A student who is unable to successfully complete these courses within two attempts, including dropping a course with a grade of "W" or taking an equivalent course at another institution, will be required to change his or her major.

PHY 2103 & PHY 2111	Modern Physics and Modern Physics Laboratory
PHY 2823	Mathematical Physics I
PHY 3203	Classical Mechanics I

Degree Requirements

A. Physics and Astronomy courses

1. Required courses completed with a grade of "C-" or better:

PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
PHY 2103 & PHY 2111	Modern Physics and Modern Physics Laboratory	4
PHY 2823	Mathematical Physics I	3
PHY 3203	Classical Mechanics I	3
PHY 3293	Thermal Physics	3
PHY 3343	Physics Research Laboratory	3
PHY 3423	Electricity and Magnetism	3

2. Select two additional courses from the following:

AST 3013	Fundamentals of Astronomy	6
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 4263	Quantum Mechanics I	
PHY 4843	Condensed Matter Theory	

B. Required courses in the College of Sciences

1. Required courses (excluding physics):

CHE 1103	General Chemistry I	3
CHE 1113	General Chemistry II	3
CHE 1121	General Chemistry I Laboratory	1
CS 1063	Introduction to Computer Programming I	3
or CS 1173	Data Analysis and Visualization	
or CS 2073	Computer Programming with Engineering Applications	
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
MAT 2214	Calculus III	4

2. Additional approved courses from the College of Sciences. 32

Total Credit Hours 87

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 their academic advisor 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**First Year**

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103	General Chemistry I	3
or CHE 1143	or Principles of Chemistry I	
CHE 1121	General Chemistry I Laboratory ¹	1
CS 1063	Introduction to Computer Programming I (or Data Analysis and Visualization, or Computer Programming with Engineering Applications)	3
or CS 1173	or Data Analysis and Visualization	
or CS 2073	or Computer Programming with Engineering Applications	
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (Q) (core)	3
Credit Hours		17

Spring

CHE 1113	General Chemistry II	3
or CHE 1153	or Principles of Chemistry II	

MAT 1224	Calculus II	4
PHY 1943	Physics for Scientists and Engineers I (core and major)	3
PHY 1951	Physics for Scientists and Engineers I Laboratory	1
WRC 1023	Freshman Composition II (Q) (core)	3
College of Sciences elective ²		2
Credit Hours		16

Second Year**Fall**

MAT 2214	Calculus III	4
PHY 1963	Physics for Scientists and Engineers II (core and major)	3
PHY 1971	Physics for Scientists and Engineers II Laboratory	1
Social & Behavioral Sciences core		3
American History core		3
Credit Hours		14

Spring

PHY 2103	Modern Physics	3
PHY 2111	Modern Physics Laboratory	1
PHY 2823	Mathematical Physics I	3
PHY 3203	Classical Mechanics I	3
American History core		3
Component Area Option core		3
Credit Hours		16

Third Year**Fall**

PHY 3293	Thermal Physics	3
PHY 3423	Electricity and Magnetism	3
College of Sciences elective ²		3
College of Sciences elective ²		3
Language, Philosophy & Culture core		3
Credit Hours		15

Spring

PHY 3343	Physics Research Laboratory	3
POL 1133	Texas Politics and Society (or Civil Rights in Texas and America (core))	3
or POL 1213	or Civil Rights in Texas and America	
College of Sciences elective ²		3
College of Sciences elective ²		3
Credit Hours		12

Fourth Year**Fall**

POL 1013	Introduction to American Politics (core)	3
College of Sciences elective ²		3
College of Sciences elective ²		3
College of Sciences elective ²		3
Upper-division AST or PHY elective ³		3
Credit Hours		15

Spring

College of Sciences elective ²	3
College of Sciences elective ²	3
College of Sciences elective ²	3
Upper-division AST or PHY elective ³	3
Creative Arts core	3
Credit Hours	15
Total Credit Hours	120

- ¹ This laboratory course includes a lecture component as indicated on the University Schedule of Classes.
- ² At least 18 semester credit hours of College of Sciences electives must be at the upper-division level.
- ³ 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 Astronomy/Astrophysics (p. 278)
- Minor in Physics (p. 278)

Minor in Astronomy/Astrophysics

The Department of Physics and Astronomy offers a Minor in Astronomy/Astrophysics, which serves to increase the value of the student's major concentration. The minor provides a more comprehensive foundation in physics to those wishing to teach science at the middle and high school levels through applications of important physics concepts. Further, it is a key Science, Technology, Engineering and Mathematics (STEM) subject, due to its critical science, technology, and math components, combined with a popular appeal. All students pursuing the Minor in Astronomy/Astrophysics must complete 20 semester credit hours.

A. Required Courses

AST 3013	Fundamentals of Astronomy	3
AST 3023	Introduction to Astrophysics	3
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4

B. Select two of the following courses 6

AST 3033	Observational Techniques in Astronomy
AST 3103	Observational Astronomy Laboratory
PHY 3603	Cosmology
AST 4203	Stellar Astrophysics
AST 4953	Special Studies in Astronomy

Total Credit Hours	20
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To declare a Minor in Astronomy/Astrophysics, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

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.

Required courses:

PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	4
PHY 2103 & PHY 2111	Modern Physics and Modern Physics Laboratory	4
PHY 3203	Classical Mechanics I	3
PHY 3293	Thermal Physics	3
PHY 3423	Electricity and Magnetism	3
Total Credit Hours		21

To declare a Minor in Physics, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.

University College

The University College offers students the opportunity to realize their potential for academic success and ensure they have the opportunity to enrich their experience at the University through student development programs. The University College houses the Writing Program, the University Health Professions Office, the Institute for Law & Public Affairs, the Center for Civic Engagement, and the Office of Scholar Development. The University College also offers the Bachelor of Arts degree in Multidisciplinary Studies, and partners with other University offices to offer coursework that is accessible to students from all majors.

All first-year college students are admitted into University College and participate in a comprehensive First Year Experience Program designed to help transition to university life. In UTSA's First-Year Experience Program students will participate in a peer mentor program and complete Academic Inquiry and Scholarship (AIS 1203). Students must meet the following criteria within their first year of studies to ensure successful transition to their respective colleges of major:

1. Complete 30 UTSA semester credit hours¹
2. Have no Texas Success Initiative (TSI) deficiencies
3. Earn credit for AIS 1203 Academic Inquiry and Scholarship
4. Earn credit for WRC 1013 Freshman Composition I (Q)
5. Earn credit for the Core Curriculum Mathematics requirement
6. Complete the First-Year Experience Program.

Students within the University College may be required to register with the freshman cohort, regardless of hours earned, unless they have a designated priority registration.

Transfer students with 30 or more hours majoring in selective programs and undeclared majors will be admitted into University College and remain in the College until they have met all requirements to declare a major. At that point, such students will transition to their appropriate college of major.

¹ There is a distinction for freshmen and freshmen transfers entering UTSA with 15 or more credit hours. Such individuals may satisfy this requirement by completing 30 total hours, 15 of which must be UTSA hours with a UTSA grade point average (GPA) of 2.5 or higher. Freshmen and freshmen transfers entering UTSA with 15 or more credit hours may be designated as University College Accelerated Students as soon as they meet the first six exiting requirements above. Upon completion of these first six requirements, University College Accelerated Students will be able to register with their appropriate cohort based upon hours earned (30-59 sophomore, 60-89 junior, etc.).

Bachelor of Arts Degree in Multidisciplinary Studies

The Bachelor of Arts (B.A.) 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.

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 B.A. 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.

Core Curriculum Component Area Requirements (p. 7)

First Year Experience Requirement	3
Communication	6
Mathematics	3
Life and Physical Sciences	6
Language, Philosophy and Culture	3
Creative Arts	3
American History	6
Government-Political Science	6
Social and Behavioral Sciences	3
Component Area Option	3
Total Credit Hours	42

Degree Requirements

All candidates for the B.A. degree in Multidisciplinary Studies must complete the following 78 semester credit hours.

A. Multidisciplinary Studies Foundation Courses

Technology Requirement. Select one of the following:	3
CS 1033	Microcomputer Applications

IS 1403	Business Information Systems Fluency	
Communications Requirement. Select one of the following:		3
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

All candidates for the degree must select courses to satisfy the requirements of the following three focus areas based on three distinct disciplines: 48

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 Director. 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.

C. Multidisciplinary Studies Courses

MDS 2013	Introduction to Multidisciplinary Studies	3
MDS 4983	Senior Seminar for Multidisciplinary Studies	3

D. Free Electives

All candidates for this degree must complete 18 semester hours of free electives, at least 6 of which must be at the upper-division level. 18

Total Credit Hours 78

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 their academic advisor 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

First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
MDS 2013	Introduction to Multidisciplinary Studies	3
WRC 1013	Freshman Composition I (Q) (core)	3

Mathematics core		3
Credit Hours		15

Spring

CS 1033 or IS 1403	Microcomputer Applications or Business Information Systems Fluency	3
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HIS 1043 or HIS 1053 or HIS 2053	United States History: Pre-Columbus to Civil War Era (core) or United States History: Civil War Era to Present or Texas History	3
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WRC 1023	Freshman Composition II (Q) (core)	3
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Focus Area 1 lower-division course		3
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Life & Physical Sciences core		3
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Credit Hours		15
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Second Year

Fall

COM 1043 or COM 1053 or COM 2113 or ENG 2413	Introduction to Communication or Business and Professional Speech or Public Speaking or Technical Writing	3
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POL 1013	Introduction to American Politics (core)	3
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Focus Area 2 lower-division course		3
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Focus Area 3 lower-division course		3
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Life & Physical Sciences core		3
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Credit Hours		15
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Spring

POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
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Focus Area 1 lower-division course		3
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Focus Area 2 lower-division course		3
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Creative Arts core		3
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Language, Philosophy & Culture core		3
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Credit Hours		15
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Third Year

Fall

Focus Area 1 upper-division course		3
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Focus Area 2 upper-division course		3
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Focus Area 3 lower-division course		3
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Social and Behavioral Sciences core		3
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Component Area Option core		3
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Credit Hours		15
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Spring

Focus Area 1 upper-division course		3
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Focus Area 2 upper-division course		3
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Focus Area 3 upper-division course		3
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Free elective		3
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Free elective		3
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Credit Hours		15
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Fourth 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
Credit Hours	15

Spring

MDS 4983	Senior Seminar for Multidisciplinary Studies	3
Focus Area 1 upper-division course		3
Focus Area 3 upper-division course		3
Free elective		3
Free elective (upper-division)		3
Credit Hours		15
Total Credit Hours		120

Writing Program

Writing Program courses are designed to help students become the most proficient writers possible. The courses stress the writing process, along with purpose, audience, correctness, research techniques, and visual layout. Integrated Reading and Writing is designed to prepare students for success in Freshman Composition. Freshman Composition I focuses primarily on informative academic writing and introduces persuasive writing, while Freshman Composition II focuses on argument and persuasion. Freshman Composition I and II papers emphasize the use of source material and appropriate documentation of that material. All of the classes include an oral component, providing time for students to practice and sharpen their oral presentation skills. These courses prepare students for demands of the academic and professional worlds. Freshman Composition I and II are also enhanced with quantitative literacy. 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 critical skill.

First Year Experience

The First Year Experience Program (<http://utsa.edu/fye>) offers programming for first-year students that is designed to ease the transition from high school to college and facilitate academic and personal success at UTSA. Specifically, the First Year Experience Program provides a Peer Mentor Program, linked-course offerings, and guidance in choosing an appropriate major.

All first-year college students are admitted into University College and participate in a comprehensive First Year Experience Program designed to help transition to university life. In UTSA's First-Year Experience Program students will participate in a Peer Mentor Program; complete Academic Inquiry and Scholarship (AIS 1203), a Core Curriculum course designed to orient first-year students to the different fields of study within an Academic Pathway while enhancing essential academic skills such as critical thinking and communication skills; have the opportunity to enroll in linked courses; and participate in various campus events designed to enhance the success of first-year students.

Honors College

The Honors College

The Honors College is a non-traditional, liberal arts and sciences college at the University of Texas at San Antonio. It recruits and develops elite students. While in Honors, students are immersed in a small-college culture while having total access to all of the unique resources of one of the nation's top emerging research universities.

Emphasizing student development within a real-world context, UTSA Honors has one of the most unique experiential honors curricula in the nation. Using the seventh largest city in the U.S., San Antonio, as our laboratory, honors students have the distinct advantages of learning and networking in a vibrant, culturally-rich, and innovative city setting.

Honors students also have the benefit of working with the top students of all disciplines. Our emphasis on student life encourages a family atmosphere and helps students develop lifelong friendships with those who are sure to be tomorrow's leaders.

Mission

The Honors College uses an experiential approach to assist students of all majors to become servant leaders, develop as professionals, and intellectually achieve beyond their GPA. We help our students to emerge as culturally sophisticated global citizens, live engaged and intentional lives, and acquire skills that will help them to flourish.

We genuinely value our community, always seeking new and innovative ways to help students to gain a deep sense of belonging. We believe in honoring those whose actions uphold the highest standards of virtue and excellence; promoting equity, justice, and fairness; practicing resilience in the face of hardships and adversity; contributing to the wellbeing of all, human or otherwise, through acting benevolently and kindly; and supporting those who need our help. We are a community that cares.

Our Philosophy

UTSA Honors focuses upon student outcomes. We develop students in order to succeed in what we call the S.P.I.C.E.S. areas. We know that the most successful graduates stand out in six areas:

Service and Civic Engagement

Professional and Vocational Development

Intellectual Achievement Beyond GPA

Cultural Sophistication & Global Awareness

Engaged and Intentional Lifestyle Choices

Skill Acquisition

We have intentionally designed our curriculum to help students produce demonstrable achievements in all of these areas.

Our Ethos

UTSA is devoutly committed to having a "small-college feel." We model our ethos after small, private liberal arts colleges. We want our students to feel like they are part of a family. Though our students are exceptional, we privilege collaboration over cutthroat competition, a healthy lifestyle

above unhealthy stress. We ask our students to remain steadfastly committed to living our H.E.R.B.S., always reminding them to be

Honorable

Equitable, Just, and Fair

Resilient

Benevolent

Supportive

We strive to help students understand their learning as a public good and hope to inspire them to use what they learn for the betterment of others.

Admission and Retention

Admission

Admission to the Honors College is offered to a select number of highly motivated and successful students who wish to take charge of their education and achieve their highest potential at UTSA.

All admissions to the Honors College are on an invitation-only basis. Incoming freshmen and transfer students are automatically considered for Honors College eligibility based on the student's information at the time of application to UTSA. Current UTSA students are automatically considered for Honors College eligibility based on their cumulative grade point average (GPA) and completed credit hours as of the semester prior to invitation. Admission is competitive and contingent upon number of seats available for any given year. Admission information is posted at <http://honors.utsa.edu/admissions/the-process>.

Retention in the Honors College

Good Academic Standing

Good Academic Standing in the Honors College is defined as having a minimum cumulative UTSA grade point average (GPA) of 3.3 and making satisfactory progress with both the curricular and noncurricular requirements toward graduating from the College. (See Honors Handbook for details on satisfactory progress.) Academic Standing is determined by the student's UTSA cumulative GPA at the conclusion of Spring Semester. Note students need a graduation UTSA GPA of 3.5 or higher to be classified as an Honors College graduate. Students who have a 3.3–3.49 GPA may graduate as an Honors College Member if they complete the minimum requirements.

Dismissal

Students who are not in Good Academic Standing as of June 1 will be dismissed from the College unless they formally request a probationary year.

Probation

Probation is granted at the discretion of the Associate Dean of the Honors College. Except in rare cases, students will be granted no more than two semesters of probation. Please see the Honors College Handbook for probation procedures.

Benefits and Services

The UTSA Honors College provides the following opportunities to members of the College:

Early Registration

Priority registration gives honors students the ability register for their courses as soon as the registration period opens. In other words, honors students may register for classes on the very first day of registration.

Dual College Membership

All Honors College students are also members of a degree-granting college. Admission to the Honors College is independent of admission to any other academic unit.

Honors Counseling and Major Advising

In their first year, honors students have an Honors Counselor who helps them get off on the right foot. They will also have a peer coach, there to help them find the best opportunities to get involved. After the first year, an advisor in the college of the student's major becomes the primary advisor.

Throughout their time in Honors, students continue to have access to our whole Honors Counselor Team. This group helps the student to find study abroad, service learning, professional development, and internship opportunities, all the while ensuring that the student stays on track to graduate from Honors.

Honors Scholarships

The Honors College, in conjunction with the UTSA Scholarship Office, annually awards numerous Honors scholarships. Many Honors scholarships are renewable for up to three years for students who maintain the requisite 3.3 grade point average and complete an Honors course each semester. More information on scholarships is available at <http://honors.utsa.edu/students/scholarships>.

Honors Events

The heart of the honors community is the events. Honors students host many events each year that are funded by honors student fees. These events are social, ceremonial, academic, or sometimes just silly. This is the best way for an Honors student to build their network.

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.

Professional Networking

Every year honors students have access to many unique professional, academic, and cultural networking opportunities that are not available to other students.

Recognition for Honors Graduation

Members of the Honors College who complete the requirements for any of the listed distinctions qualify to graduate through the Honors College and to participate in the Honors College Stole & Laurel Ceremony, where they receive an Honors stole to wear with their academic regalia. Recognition for Honors at the UTSA Graduation includes a notation on the transcript and diploma and mention in the commencement bulletin.

Honors College Requirements

To graduate with diploma-level recognition from the Honors College, a student must meet **all** of the following requirements:

- Be accepted and enrolled in the Honors College,
- Declare and complete Undergraduate Bachelor's Degree requirements for any UTSA program under a student's specific catalog of record,
- Be in Good Standing with the Honors College at the time of graduation (i.e., have a minimum UTSA grade point average of 3.50 on a 4.00 scale), **and**
- Complete the below-listed Honors College Curriculum and Noncurricular Requirements

Honors College Curriculum Requirements

The UTSA Honors College is committed to students' community engagement, mindful living, and civic engagement, which may best be understood through the S.P.I.C.E.S.; students are required to actively participate in the following: service, professional development, intellectual achievement beyond the classroom, cultural sophistication, engaged and intentional living, and skill development. As such, the UTSA Honors curriculum is designed to help students have the types of experiences that will create lifelong learners and dexterous thinkers. To allow students the ability to take on multiple majors (should they choose to), and to potentially graduate early, and to utilize previously acquired credits, our curriculum is intentionally flexible. This intentional curriculum flexibility and malleability also provide students the opportunity to customize their Honors College experience, thus crafting a curriculum that will make them most marketable to graduate schools and potential employers. In fact, our flexibility allows a student to graduate with as few as 4 credit hours of formal HON coursework. Nonetheless, the curriculum and co-curricular requirements are comparable to course equivalencies of 30 or more credit hours.

Noncurricular Requirements:

In addition to the below-mentioned Honors College curricular requirements, all Honors College students must also complete the following Honors Involvement noncurricular requirements:

- Students are required to meet with their Honors College Academic Counselors once a semester
- Students must complete either the Honors 101 Workshop or one semester of Top Scholars, **and**
- Students must attend a minimum of three (3) Honors College Events per semester (see the Honors College Handbook for details).

Curricular Requirements:

I. Required Coursework (8 Credit Equivalencies)

Complete all of the following:

HON 2301	Honors: The Civic Ethos	1
HON 2983	Honors Tutorial I	3
HON 3984	Honors Tutorial II	4

OR

Honors Tutorial II Exam (4 credit hours) (students can complete this option via test; the test is offered once per semester for each tutorial pathway. A special testing fee applies.)

II. Experiences (15 Credit Equivalencies)

15

Students are required to complete five (5) of the following Honors Experiences. While Experiences 10-12 may NOT be repeated for credit, Experiences 1-9 may be repeated once for credit toward completing the five Honors Experiences requirement (for example, a student who completes HON 3503 twice must now only complete three additional experiences).

In addition to being able to complete Honors College curricular requirements through Experiences 1-9 through HON coursework, students may opt to meet their Required Experiences component by using specially designated UTSA courses and/or UTSA co-curricular experiences officially approved by the Honors College. For a complete and current list of approved substitutions, students should refer to the most recent edition of the Honors College Handbook and consult with their Honors College Academic Counselor.

Experience 1. First-Year Experience:

AIS 1203 Academic Inquiry and Scholarship

This course must be completed as an honors section specifically. This course is a Core Curriculum requirement for all FTIC (First Time In College) Freshman students, regardless of Dual or AP credits completed. This course is NOT required for Transfer students who have completed 30 or more hours or who transfer in as Core Complete from their transfer institution, however, they do have the option of completing an AIS 1203 honors section should they choose to do so.

Experience 2. Service (select one of the following):

HON 3103 Honors Service and Social Entrepreneurship

HON 3533 Advocacy and Politics

3 credit hours of any honors section of a course designated as an Honors Service Course: when appropriate, honors sections of courses will carry designations that identify experience requirements that they will satisfy. These designations will be publicized to students by the Honors College and in the comments of the published course schedule.

Experience 3. Professional Development (select one of the following):

HON 3263 Honors Professional Development

3 credit hours of any Honors section of a course designated as an honors Professional Development Course: when appropriate, Honors sections of courses will carry designations that identify experience requirements that they will satisfy. These designations will be publicized to students by the Honors College and in the comments of the published course schedule.

HON 4933 Honors Internship

HON 4936 Honors Internship

Experience 4. Research and Intellectual Achievement (select one of the following):

HON 3313 Honors Research

HON 4993 Honors Capstone Project

3 credit hours of any Honors section of a course designated as an honors Research Course: when appropriate, honors sections of courses will carry designations that identify experience requirements that they will satisfy. These designations will be publicized to students by the Honors College and in the comments of the published course schedule.

Experience 5. Cultural Exploration (select one of the following):

HON 3951 Honors Study Abroad/Away

HON 3403 Honors Practicum in Culture

3 credit hours of any honors section of a course designated as an Honors Cultural Exploration Course: when appropriate, honors sections of courses will carry designations that identify experience requirements that they will satisfy. These designations will be publicized to students by the Honors College and in the comments of the published course schedule.

Experience 6. Engaged Living (select one of the following):

HON 3503 Honors Intentional Living and the Good Life

3 credit hours of any honors section of a course designated as an Honors Intentional Living Course: when appropriate, honors sections of courses will carry designations that identify experience requirements that they will satisfy. These designations will be publicized to students by the Honors College and in the comments of the published course schedule.

Experience 7. Skill Development (select one of the following):

HON 3603 Honors Special Topics: Skills

3 credit hours of any honors section of a course designated as an Honors Skills Course: when appropriate, honors sections of courses will carry designations that identify experience requirements that they will satisfy. These designations will be publicized to students by the Honors College and in the comments of the published course schedule.

Experience 8. Interdisciplinary Seminar (select one of 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

Experience 9. Leadership (select one of the following):

HON 4403 San Antonio Seminar

HON 4941 Honors Leadership

HON 4951 Honors Practicum in Leadership

Experience 10. Independent Study (select one of the following):

HON 4913 Honors Independent Study

3 credit hours of Honors Independent Study in any related discipline

Experience 11. Elective (select one 3-credit-hour Honors course or Honors section):

Students must complete any 3-credit-hour Honors College course or honors section that does not count towards fulfilling the requirements in the Honors Required Coursework or toward fulfilling the requirements for Experiences 1-9.

Experience 12. Double Major/Honors Program; students may complete any one of the following:

Option 1: Complete the requirements for at least two majors at UTSA.

Option 2: Complete the requirements for the F.A.M.E. Program.

Option 3: Enter UTSA as a graduate of a two-year Honors Program.

III. Students are required to complete one of the following: 3-4

HON 4984 Honors Tutorial III 4

Complete a sixth Experience from the Section II: Experiences above

Complete all of the requirements for the Business Honors Program: Students pursuing both graduation from the Honors College and the College of Business Honors Program may count up to 3 credit hours of Business Honors coursework as an Elective experience. The Business International Immersion Program satisfies the Cultural Exploration Experience and any Business internship for academic credit satisfies the Professional Development Experience. As such, a Business Honors Graduate would only need to complete two additional experiences and the Required Coursework in Section I above to graduate from both the COB Honors Program and the Honors College.

Total Credit Hours 30-31

Honors College Graduation with Distinction

A student may graduate from the Honors College “With Distinction” by meeting the following conditions:

1. Complete required coursework: 26-27

Complete all above-mentioned curricular and noncurricular requirements for graduating from the Honors College

2. Complete one of the following conditions: 3-4

HON 4984 and a total of six Experiences from the above

Complete Business Honors and either HON 4984 or six Experiences

Complete HON 3513, HON 3523 and HON 3533 (The Archer Program)

Total Credit Hours 29-31

Honors College Member Graduates

Students who do not complete the requirements for graduation from the Honors College may graduate as “Members of the Honors College” by having an institutional grade point average of 3.3 upon graduation, being in good standing, and completing the following:

1. Required coursework: 4

HON 2301 Honors: The Civic Ethos

HON 2983 Honors Tutorial I

2. Additional HON coursework: 12

12 additional semester credit hours of HON coursework

Total Credit Hours 16

Honors College Programs Open to Non-Honors College Students and Jointly Sponsored Programs

The UTSA Honors College partners with several honors programs on our campus. Honors College students in good standing are automatically accepted to those programs, provided they meet all stated requirements. However, those programs are also open to non-Honors College students.

UTSA College of Business Honors Program

The Business Honors distinction is available only to students admitted to the Business Honors Program (BHP). Students pursuing B.B.A. majors in the College of Business are eligible to apply and participate. The Business Honors Program provides outstanding students with opportunities to benefit from an enriched first-class education. Business Honors students will take smaller classes taught by some of the best faculty in the College. Additionally, the program is designed to give our

students a competitive edge in the job market. Students are required to complete a total of 18 credit hours of business honors coursework as well as experiential learning activities during their undergraduate education.

Business honors students may participate in the Honors College along with the Business Honors Program.

Program Admission

Undergraduate pre-business or business majors and community college transfer students interested in business as an area of study are encouraged to apply. Students interested in being admitted to the Business Honors Program must complete an application for admission. Every Honors applicant is evaluated on an individual basis.

Admission to the Business Honors Program is competitive. Selection will be based on the following criteria:

- Students must have at least 15 UTSA semester credit hours that apply toward graduation with at least one semester completed at UTSA.
- Students must demonstrate high academic achievement with a minimum UTSA and College of Business grade point average of 3.25.
- Students must have well-documented involvement in extracurricular activities and/or work experience.
- Students must demonstrate exceptional involvement and leadership in the business school and/or at UTSA.
- Students must prepare and submit an application essay.

Students who are admitted to the Honors College Program have direct admission to the Business Honors Program.

Applications are only accepted in the spring semester. Information about application forms and deadlines is available on the College of Business website (<https://business.utsa.edu/undergraduate-studies/business-honors-program>).

Program Requirements

The Business Honors Program requires its member to meet academic and experiential learning requirements in order to graduate with the Business Honors designation. In order to earn the Business Honors designation program participants must:

1. Maintain a minimum cumulative UTSA and COB grade point average of 3.25
2. Complete 18 semester credit hours of honors courses including the following:
 - a. Honors sections of five of the following: ACC 2013, ACC 2033, ECO 2013, ECO 2023, FIN 3013, GBA 2013, IS 3003, MGT 3013, MKT 3013, MS 1023, or MS 3043 and;
 - b. MGT 4893 designated honors course
These undergraduate courses are offered once per year. 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.
3. Experiential learning requirements

The Business Honors Program promotes participation in activities outside of the classroom to enhance the undergraduate experience. Therefore, Business Honors Program students must demonstrate that they have

participated in experiential learning activities during their undergraduate education. The experiential learning requirements will be provided in the COB Honors Program handbook. Other program requirements may apply.

UTSA Citymester

UTSA Citymester is a semester-long academic emersion experience in the San Antonio community. Students will complete a major internship, significant service learning, and engage the issues and life of the nation's seventh largest city.

Required coursework:

HON 3103	Honors Service and Social Entrepreneurship	3
HON 4403	San Antonio Seminar	3
HON 4933	Honors Internship (Summer)	3
HON 4936	Honors Internship (Spring)	6
Total Credit Hours		15

Reserve Officer Training Corps (ROTC) Programs

The Office of the Associate Provost for Veteran and Military Affairs (<http://provost.utsa.edu/veteran/>) oversees the Air Force and Army ROTC programs at UTSA.

The Air Force Reserve Officer Training Corps (AFROTC) program trains students to become scholar warrior leaders who make a positive impact in the world. This award-winning program combines traditional college education with military instruction in order to develop exceptional United States Air Force officers. Multiple enrollment options give students an opportunity to participate in AFROTC without initial commitment for military service. This program is for students who want to learn how to be leaders. The AFROTC program requirements are described in detail in the UTSA Undergraduate Catalog.

All students in Air Force ROTC are issued books and uniforms for use in ROTC classes. In addition, most upperclassman cadets enlisted in the Air Force Reserve receive a monthly subsistence allowance. Cadets may apply for Air Force ROTC scholarships, which are available on a competitive basis to those who meet the basic minimum requirements of a 2.5 cumulative grade point average, are a U.S. citizen, pass a physical fitness test, and pass a Department of Defense medical exam. For further information, contact the AFROTC office at 210-458-4624. Walk-ins are also welcome on the first floor of the Graduate Studies/Research Building (GSR), Room 1.220.

The Army Reserve Officer Training Corps (ROTC) program gives students the opportunity to obtain a commission as an officer in the United States Army. The program offers the option of completing either a four-year program or a two-year program in Military Science while pursuing a baccalaureate or graduate degree in one of the disciplines offered by UTSA. Students who may want to try military science without incurring a military commitment can register for the first- and second-year courses in Military Science.

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. In addition, students enrolled in Army ROTC courses are furnished, free of charge, complete uniforms, texts, and necessary equipment. For more information, contact the Army ROTC office at 210-458-5628. Walk-ins are also welcome on the first floor of the Graduate School/Research Building (GSR), Room 1.220.

Air Force Reserve Officer Training Corps (AFROTC) Program

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) (<http://www1.utsa.edu/afrotc>) 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 UT Health San Antonio may also enroll in Air Force ROTC at UTSA.

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 on the first floor of the Graduate Studies and Research Building (GSR), Room 1.220.

Credit for aerospace studies courses may be applied toward a baccalaureate degree, but are generally classified as free electives. There is no 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 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 GSR 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. Required core courses

ASC 2031	The Evolution of United States Air Force Air and Space Power I	1
ASC 2041	The Evolution of United States Air Force Air and Space Power II	1

B. Additional courses

Select 3 of the following, two of which must be at the upper-division level):

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. Additional courses

Select 3 of the following, 2 of which must be at the upper-division level

GES 1023	World Regional Geography	
GES 3314	Introduction to Geographic Information Systems	
GES 3643	Political Geography	
HIS 3543	History of Modern Warfare	
HIS 3823	History of American Foreign Relations	
POL 1213	Civil Rights in Texas and America	
POL 2603	Introduction to International Relations	
POL 3293	Political Movements	
POL 3403	European Governments	
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	

Total Credit Hours 20

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 the Office of the Associate Provost for Veteran and Military Affairs in conjunction with an advisor in the office of Undergraduate Studies Support and Technology Services.

Army Reserve Officer Training Corps (ROTC) Program

The Army Reserve Officer Training Corps (ROTC) (<http://www.utsa.edu/armyrotc>) program gives students the opportunity to obtain a commission as an officer in the United States Army. 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. There is no maximum number of semester credit hours of military science that may be applied to the degree requirements for each major. Credit for military science courses awarded by another 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 31 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 1012/MSC 1001, MSC 1122/MSC 1101, MSC 2012/MSC 2011, and MSC 2022/MSC 2021, 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 3033, MSC 4013, and MSC 4023 and their associated laboratory courses. 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 3011, MSC 3023/MSC 3021, MSC 4013/MSC 4011, and MSC 4023/MSC 4021 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.

Reserve Officer Training Corps (ROTC) Programs

The program requirements for the Basic and Advanced courses are as follows:

MSC 1001	Introduction to the Army and Critical Thinking Laboratory	1
MSC 1012	Introduction to the Army and Critical Thinking	2
MSC 1101	Adaptive Leadership and Professional Competence Laboratory	1
MSC 1122	Adaptive Leadership and Professional Competence	2
MSC 2011	Leadership and Decision Making Laboratory	1
MSC 2012	Leadership and Decision Making	2
MSC 2021	Army Doctrine and Team Development Laboratory	1
MSC 2022	Army Doctrine and Team Development	2
MSC 3011	Training Management and the Warfighting Functions Laboratory	1
MSC 3013	Training Management and the Warfighting Functions	3
MSC 3021	Applied Leadership in Small Unit Operations Laboratory	1
MSC 3023	Applied Leadership in Small Unit Operations	3
MSC 3033	American Military History	3
MSC 4011	The Army Officer Laboratory	1
MSC 4013	The Army Officer	3
MSC 4021	Company Grade Leadership Laboratory	1
MSC 4023	Company Grade Leadership	3
Total Credit Hours		31

POL 3523	Force in International Politics	
POL 3563	Current Issues in World Politics	
Total Credit Hours		21

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 the Office of the Associate Provost for Veteran and Military Affairs in conjunction with an advisor in the office of Undergraduate Studies Support and Technology Services.

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. Core Military Science and Leadership coursework

MSC 3013	Training Management and the Warfighting Functions	3
MSC 3023	Applied Leadership in Small Unit Operations	3
MSC 4013	The Army Officer	3
MSC 4023	Company Grade Leadership	3

B. Select 3 of the following:

GES 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	

Additional Course Fees

In addition to tuition, additional fees and charges may be assessed for the incidental cost of services of the major pursued or the courses selected by a student. Course descriptions in this catalog will list any Additional Course Fee(s) to be charged for the course. Students should be aware of additional fees and charges incurred by their major or course selection that will be added to the total cost of tuition.

Additional Course Fees are subject to change by the Texas Legislature or The University of Texas System Board of Regents and become effective on the date enacted. The Texas Legislature does not set the specific amount for any particular student fee. The student fees described in this catalog are authorized by state statute; however, the specific fee amounts and the determination to increase fees are made by The University of Texas at San Antonio and The University of Texas System Board of Regents.

For a more detailed description of each Additional Course Fee, please refer to Additional College and Course Fees and Incidental Charges (<http://catalog.utsa.edu/policies/tuitionfees/additionalfees>) in *UTSA Student Policies*.

Differential Tuition is assessed all students taking upper-division Undergraduate College of Engineering and College of Business courses. For more information on differential tuition, please refer to Tuition (<http://catalog.utsa.edu/policies/tuitionfees/tuition>) in *UTSA Student Policies*.

Additional Course Fee Codes and Amounts

Note: All courses may be charged the Digital Learning Fee (DL01) depending on the manner in which the course is taught.

Fall 2019 Update: The DNMF (Dietetics Teaching Kitchen) and M001 (Individual Instruction-Music) course fees will increase starting Fall 2019.

Fee Code	Fee Amount	Charged Per	Fee Description
BISP	\$10 lower-division / \$20 upper-division	Course	Global Business Skills Charge – College of Business International Programs
BTSI	\$15	Course	Technology Services and Instructional Support Charge – College of Business
CJIF	\$65	Course	Internship Fee – Department of Criminal Justice
COUN	\$35	Course	Counseling Support Fee – Department of Counseling
DL01	\$25	Credit Hour	Digital Learning Fee
DNMF *	\$112 (increasing to \$225 Fall 2019)	Credit Hour	Dietetics and Nutrition Program Teaching Kitchen Fee (formerly Materials Fee) – College of Education and Human Development
DNPF	\$20	Credit Hour	Dietetics and Nutrition Program Practicum Fee – College of Education and Human Development

DNTM	\$112	Credit Hour	Dietetics and Nutrition Program Testing Materials Fee – College of Education and Human Development
DBU	\$42	Credit Hour	Differential Tuition – College of Business Upper-division Undergraduate Courses
DEU	\$55	Credit Hour	Differential Tuition – College of Engineering Upper-division Undergraduate Courses
GIS1	\$32	Course	Equipment and Materials Fee (Geographic Information Systems Materials) – Department of Political Science and Geography
IUB1	\$10	Course	Instrument Users Fee – Department of Biology
IUC1	\$15	Course	Instrument Users Fee – Department of Chemistry
IUE1	\$15	Course	Instrument Users Fee – Department of Geological Sciences
IUM1	\$30	Course	Instrument Users Fee – Department of Music
IUP1	\$20	Course	Instrument Users Fee – Department of Physics and Astronomy
IUS1	\$15	Course	Instrument Users Fee – Department of Environmental Science and Ecology
KSM1	\$10	Course	Physical Education Fee (Kinesiology Supply and Maintenance Fee) – Department of Kinesiology, Health, and Nutrition
L001	variable (\$2-\$30)	Course	Laboratory Fee
LB01	\$5	Course	Writing Materials Fee – College of Liberal and Fine Arts
LEA1	\$15	Course	Educational Assessment Course Fee – College of Education and Human Development
LEA2	\$15	Course	Educational Assessment Course Fee (BBL courses) – College of Education and Human Development
LRB1	\$15 lower-division / \$21 upper-division	Course	Learning Resource Fee – College of Business undergraduate courses
LRC1	\$4	Credit Hour	Learning Resource Fee – Core Curriculum courses
LRE1	\$20	Course	Learning Resource Fee – College of Engineering courses
LRF1	\$4	Credit Hour	Learning Resource Fee – Writing Program courses
LRH1	\$10	Course	Learning Resource Fee – College of Education and Human Development courses
LRLF	\$10	Course	Learning Resource Fee – College of Liberal and Fine Arts courses
LRS1	\$5	Credit Hour	Learning Resource Fee – College of Sciences courses
LRU1	\$12	Credit Hour	Learning Resource Fee – Academic Inquiry (AIS) courses

Additional Course Fees

M001 *	\$100	Course	Individual Instruction Fee – Department of Music (changing to per Credit Hour Fall 2019)
MC01	\$25	Course	Music Course Fee – Department of Music
MEFH	\$5	Course	Equipment and Materials Fee – Department of History
MEPA	\$18	Course	Equipment and Materials Fee – Department of Physics and Astronomy
MFSM	\$30	Course	Manipulatives Fee – Department of Mathematics
MM01	\$7	Course	Foreign Language Multimedia Learning Center Fee – College of Liberal and Fine Arts
MST1	\$30	Course	Equipment and Materials Fee (Media Equipment and Materials) – Department of Political Science and Geography
OCCF	\$5	Credit Hour	Off-Campus Cohort Fee – College of Education and Human Development
PAG1	\$20	Course	Physical Education Fee (Kinesiology Activity Fee) – Department of Kinesiology, Health, and Nutrition
PAH1	\$80	Semester	Physical Education Fee (Golf Activity Fee) – Department of Kinesiology, Health, and Nutrition
PARC	\$40	Semester	Physical Education Fee (Outdoor Activity Fee) – Department of Kinesiology, Health, and Nutrition
SAF1	\$35	Course	Studio Art Fee – Department of Art and Art History
SAP1	\$25	Course	College of Architecture, Construction and Planning Programs Fee
STF1	\$40	Course	Educational Field Instruction Fee – College of Education and Human Development
STFB	\$40	Course	Biology Field Trip Fee – College of Sciences
STFE	\$40	Course	Environmental Science and Ecology Field Trip Fee – College of Sciences
STFK	\$57	Course	Educational Field Instruction Fee – College of Education and Human Development
STSA	\$5	Credit Hour	Technology Services and Instructional Support Charge – College of Architecture, Construction and Planning
STSE	\$10	Credit Hour	Technology Services and Instructional Support Charge – College of Engineering
STSF	\$2	Credit Hour	Technology Services and Instructional Support Charge – Writing Program
STSH	\$5	Credit Hour	Technology Services and Instructional Support Charge – College of Education and Human Development

STSI	\$5	Credit Hour	Technology Services and Instructional Support Charge – College of Sciences
STSP	\$3	Credit Hour	Technology Services and Instructional Support Charge – College of Public Policy
WRC1	\$5	Course	Writing Core Program Fee

* The DNMF (Dietetics Teaching Kitchen) and M001 (Individual Instruction-Music) course fees will increase starting Fall 2019.

Course Descriptions

Course descriptions may indicate the usual semester(s) in which the course is offered: Fall, Spring, Summer. This is based on past offerings of the course and is not a guarantee the course will be offered during the semester(s) indicated in the description. Please check with the academic department to verify that the course will be offered in a specific semester.

Course descriptions may indicate additional course fees charged for the course. For a description of each fee code, refer to the course fees table (p. 291) in this catalog.

Academic Inquiry and Scholarship (AIS)

Academic Inquiry and Scholarship (AIS) Courses

AIS 1203. Academic Inquiry and Scholarship. (3-0) 3 Credit Hours. Academic Inquiry and Scholarship is designed to orient first-year college students to the fields of study within an academic pathway. This course develops critical thinking, communication, social responsibility, and leadership skills. This course also provides an opportunity for students to better understand the core values, cultures, and assumptions within fields of study through involvement in a signature experience within an academic pathway. This course is required to fulfill the Core Curriculum First Year Experience requirement. Generally offered: Fall. Course Fee: LRU1 \$36.

AIS 2913. Independent Study: Advanced Academic Inquiry. (0-0) 3 Credit Hours.

Prerequisite: AIS 1203. Independent reading, research, and writing under the direction of a faculty member. Intensive coverage of the fields of study within an academic pathway and fulfillment of signature experience. 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.

Accounting (ACC)

Note: Beginning Fall 2019, course fees will be replaced with differential tuition at a rate of \$42 per semester credit hour for upper-division College of Business courses.

Accounting (ACC) Courses

ACC 2003. Foundations of Accounting. (3-0) 3 Credit Hours. 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. Generally offered: Fall, Spring. Course Fees: BISP \$10; BTSI \$15; LRB1 \$15.

ACC 2013. Principles of Accounting I. (3-0) 3 Credit Hours. (TCCN = ACCT 2301)

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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$10; BTSI \$15; LRB1 \$15.

ACC 2033. Principles of Accounting II. (3-0) 3 Credit Hours. (TCCN = ACCT 2302)

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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$10; BTSI \$15; LRB1 \$15.

ACC 3023. Intermediate Accounting I. (3-0) 3 Credit Hours.

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 website), and declared major in the College of Business or approval of Department Chair and Dean of the College of Business. 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). Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ACC 3033. Intermediate Accounting II. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in ACC 3023 and declared accounting major or approval of Department Chair and Dean of the College of Business. 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). Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ACC 3043. Federal Income Taxation. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in ACC 3023 and declared accounting major or approval of Department Chair and Dean of the College of Business. A conceptual introduction to the U.S. federal income tax system. Concepts include gross income, statutory deductions, property transactions, and computation of tax liabilities. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ACC 3053. Intermediate Accounting for Finance Majors. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in ACC 2013 and ACC 2033. An intermediate accounting course with emphasis on interpretation of general-purpose financial statements and the related disclosure notes as they apply to credit analysis and other aspects of corporate finance. Common and significant accounts/transactions will be analyzed, especially those relating to the financing and equity sections of the financial statements. This course cannot be applied toward an accounting major. This course does not satisfy any of the educational requirements of the Texas State Board of Public Accountancy for qualification to sit for the Uniform Certified Public Accounting Examination. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ACC 3113. Accounting Information Systems. (3-0) 3 Credit Hours.

Prerequisites: ACC 2033 with a grade of "C-" or better, IS 3003, IS 1413 or Microsoft Office Specialist Certification in Excel, and declared accounting major or approval of Department Chair and Dean of the College of Business. 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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ACC 3123. Cost Analysis. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in ACC 2033 and declared accounting major or approval of Department Chair and Dean of the College of Business. 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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ACC 3163. Quantitative Analysis for Accountants. (3-0) 3 Credit Hours.

Prerequisites: ACC 3113 with a grade of "C-" or better and declared accounting major or approval of Department Chair and Dean of the College of Business. This course will provide a hands-on introduction to data analysis, summarizing and reporting tools, and data manipulation and search functions used by accountants. This is an application-oriented course that will provide students with a knowledge of the most commonly used techniques to successfully analyze, interpret, forecast and present accounting data for improved decision making. Big data analysis will also be covered. This course may not be repeated for credit. Generally offered: Fall, Spring, and Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ACC 4013. Principles of Auditing. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in both ACC 3033 and ACC 3113, and declared accounting major or approval of Department Chair and Dean of the College. 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 in accordance with the standards established by the Auditing Standards Board or the Public Company Accounting Oversight Board. Topics also covered include professional ethics, accounting and review services, and the public accounting profession. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ACC 4163. Contemporary Issues in Accounting Practice. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in all 3000-level 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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ACC 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: A 3.0 College of Business grade point average, 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 academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

ACC 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: A 3.0 College of Business grade point average, 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 academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

ACC 4933. Internship in Accounting. (0-0) 3 Credit Hours.

Prerequisites: 12 semester credit hours of upper-division accounting courses including ACC 3033, a 3.0 UTSA 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 academic advisor for required forms. Provides students with on-the-job training in public, industry, not-for-profit, or governmental accounting units. A written report is required. ACC 4933 may be completed only once for undergraduate degree credit. Credit cannot be earned for both ACC 4933 and ACC 4963. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15.

ACC 4953. Special Studies in Accounting. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

Aerospace Studies (ASC)

Aerospace Studies (ASC) Courses

ASC 1031. The Foundation of the United States Air Force I. (1-2) 1 Credit Hour.

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. Generally offered: Fall.

ASC 1041. The Foundation of the United States Air Force II. (1-1) 1 Credit Hour.

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. Generally offered: Spring.

ASC 2031. The Evolution of United States Air Force Air and Space Power I. (1-1) 1 Credit Hour.

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. Generally offered: Fall.

ASC 2041. The Evolution of United States Air Force Air and Space Power II. (1-1) 1 Credit Hour.

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. Generally offered: Spring.

ASC 3013. Air Force Leadership Studies I. (3-2) 3 Credit Hours.

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. Generally offered: Fall.

ASC 3023. Air Force Leadership Studies II. (3-1) 3 Credit Hours.

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. Generally offered: Spring.

ASC 4013. National Security Affairs/Preparation for Active Duty I. (3-1) 3 Credit Hours.

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. Generally offered: Fall.

ASC 4023. National Security Affairs/Preparation for Active Duty II. (3-1) 3 Credit Hours.

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. Generally offered: Spring.

African American Studies (AAS)

African American Studies (AAS) Courses

AAS 2013. Introduction to African American Studies. (3-0) 3 Credit Hours.

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, literary, and/or popular responses to and representation of African Americans in the United States. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRH1 \$10; STSH \$15.

AAS 2113. African American Culture, Leadership and Social Issues. (3-0) 3 Credit Hours.

This course examines topics related to twentieth-century African American culture, leadership, and social experiences. The focus of this course includes emphasis on civic engagement, leadership, and/or cultural expression (i.e., music, performance arts, film, visual arts) that informs collective identities, social movements, and/or relevant social issues. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Course Fees: LRC1 \$12; LRH1 \$10; STSH \$15.

AAS 3013. African American Cultural Experiences. (3-0) 3 Credit Hours.

This course examines cultural expressions (e.g., art, music, film, literature, cultural identity) in the African American experience. The substantive and disciplinary emphasis can vary from one semester to another. Course Fees: LRH1 \$10; STSH \$15.

AAS 3113. African American Studies Research Seminar. (3-0) 3 Credit Hours.

This course is designed to introduce students to basic research methods and methodological issues in African American Studies. The course covers methods of social science research, research conceptualization, and research design. Students will become familiar with various methods of data collection, data analysis, and theoretical concepts that pertain to developing critical thinking, analytical, and writing skills. Course Fees: LRH1 \$10; STSH \$15.

AAS 3123. Civil Rights Movement & African American Education. (3-0) 3 Credit Hours.

This course provides an introduction to the period of struggle in American history known as the Civil Rights Movement. The objective is to survey the major historical figures, organizations, locations, strategies and ideas that coalesce to make the history of the movement. The course will analyze the historical trajectory of educational policies with particular emphasis on the Brown v. Board of Education decision in 1954 and its implications over the following 20 years. Course Fees: LRH1 \$10; STSH \$15.

AAS 3133. African Americans in Higher Education. (3-0) 3 Credit Hours.

This course explores the history of African Americans in higher education. The course examines especially significant post-secondary issues and topics in the twentieth century, such as access, equity, diversity, student organizations, institutional leadership, and current events. Course Fees: LRH1 \$10; STSH \$15.

AAS 4013. Topics in African American Studies. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

AAS 4911. Independent Study. (0-0) 1 Credit Hour.

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. Course Fee: STSH \$5.

AAS 4912. Independent Study. (0-0) 2 Credit Hours.

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. Course Fee: STSH \$10.

AAS 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fees: LRH1 \$10; STSH \$15.

AAS 4933. Internship in African American Studies. (0-0) 3 Credit Hours.

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. Course Fees: LRH1 \$10; STSH \$15.

American Studies (AMS)

American Studies (AMS) Courses

AMS 2043. Approaches to American Culture. (3-0) 3 Credit Hours.

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. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRLF \$10.

AMS 3013. Early American Culture. (3-0) 3 Credit Hours.

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.

AMS 3023. Modern American Culture. (3-0) 3 Credit Hours.

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. Generally offered: Spring.

AMS 3123. Applications of American Studies. (3-0) 3 Credit Hours.

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. Generally offered: Fall.

AMS 3243. Studies in Transnationalism. (3-0) 3 Credit Hours.

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. Generally offered: Fall.

AMS 3343. Studies in Race and Ethnicity. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

AMS 3443. Studies in Gender and Sexuality. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

AMS 4823. Topics in American Culture. (3-0) 3 Credit Hours.

An in-depth study of a selected issue or topic in American Studies. May be repeated for credit when topics vary. Generally offered: Fall, Spring.

AMS 4913. Independent Study. (0-0) 3 Credit Hours.

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.

AMS 4933. Internship in American Studies. (0-0) 3 Credit Hours.

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.

AMS 4936. Internship in American Studies. (0-0) 6 Credit Hours.

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.

AMS 4973. Advanced Seminar in American Studies. (3-0) 3 Credit Hours.

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. Generally offered: Spring.

AMS 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for Honors in American Studies during their last two semesters. Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval.

Anthropology (ANT)

Anthropology (ANT) Courses

ANT 1013. Introduction to Anthropology. (3-0) 3 Credit Hours. (TCCN = ANTH 2346)

Course content spans the study of human culture, past and present; its origins, development, and contemporary change; and the exploration of human physical and cultural differences using the paradigm of adaptation. This course fulfills all required learning objectives for the Social and Behavioral Sciences component of the core curriculum. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

ANT 2033. Introduction to Biological Anthropology. (3-0) 3 Credit Hours. (TCCN = ANTH 2301)

A comprehensive evaluation of human biological diversity and its origins. Topics include anatomy, genetics, primate biology, and the human fossil record. Students will gain critical understanding of key theoretical and methodological issues in this anthropological sub-discipline. This course fulfills all required learning objectives for the Life and Physical Sciences component of the core curriculum. (Formerly titled "Introduction to Physical Anthropology.") Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

ANT 2043. Introduction to Archaeology. (3-0) 3 Credit Hours. (TCCN = ANTH 2302)

This course presents archaeological approaches to understanding human cultures of the past. Students receive instruction in general anthropological concepts and specific archaeological methods and theories. Particular case studies are presented to illustrate several aspects of archaeological practice, and to show how archaeologists develop their understandings of cultural variation and change. The course fulfills all required learning objectives for the Social and Behavioral Sciences component of the core curriculum. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRLF \$10.

ANT 2053. Introduction to Cultural Anthropology. (3-0) 3 Credit Hours. (TCCN = ANTH 2351)

This course offers students the opportunity to examine cross-cultural variation in contemporary societies around the world in an anthropological context. It emphasizes ethnographic descriptions to highlight cultural variability in economics, social structures, and ideologies. The course fulfills all required learning objectives for the Social and Behavioral Sciences component of the core curriculum. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRLF \$10.

ANT 2063. Language, Thought, and Culture. (3-0) 3 Credit Hours.

This course surveys anthropological approaches to the cross-cultural study of language, emphasizing linkages among language, expressive culture, systems of belief and value, and the production of cultural meaning. The effects of social context upon speech are examined as are relations of inequality and power that shape linguistic interaction. Instruction is also given in the fundamentals of descriptive linguistics. The course fulfills all required learning objectives for the Language, Philosophy, and Culture component of the core curriculum. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRLF \$10.

ANT 3013. Evolutionary Medicine. (3-0) 3 Credit Hours.

This course incorporates principles from evolutionary theory into our understanding of various diseases common to human populations both past and present. Topics include the evolutionary origins and histories of common infectious diseases; the evolution of virulence and antimicrobial resistance; vaccine development and controversies; comparative immunology; the origins of allergy, asthma, and autoimmune disorders; and the evolutionary biology of stress and mental health. The course focuses on health analyses at the population level and discusses how evolutionary theory can lead to better prevention and treatment regimens. This course will be accessible to all students, and it will be particularly useful for those interested in health professions.

ANT 3023. Great Discoveries in Archaeology. (3-0) 3 Credit Hours.

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. (Formerly ANT 1103. Credit cannot be earned for both ANT 3023 and ANT 1103).

ANT 3133. Ritual and Symbol. (3-0) 3 Credit Hours.

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.

ANT 3153. Indians of the Great Plains. (3-0) 3 Credit Hours.

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.

ANT 3203. Native North Americans. (3-0) 3 Credit Hours.

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.

ANT 3223. Anthropology and the Environment. (3-0) 3 Credit Hours.

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").

ANT 3233. Frauds, Myths, and Mysteries. (3-0) 3 Credit Hours.

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.

ANT 3253. Archaeology of South America. (3-0) 3 Credit Hours.

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.

ANT 3263. Archaeology of North America. (3-0) 3 Credit Hours.

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.

ANT 3273. Civilizations of Mexico. (3-0) 3 Credit Hours.

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").

ANT 3293. Research Methods in Archaeology. (3-0) 3 Credit Hours.

Prerequisite: ANT 2043 or ANT 2053 recommended. Focuses on the study, analysis and interpretation of material cultural in archaeological research. Provides hands-on experience using methods and techniques that archaeologists use to study ceramics, lithics, and other types of artifacts and ecofacts. It also provides an overview of data analysis and archaeological report preparation. (Formerly titled "Analytical Methods in Anthropology").

ANT 3303. Nature and Culture in Greater Amazonia. (3-0) 3 Credit Hours.

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.

ANT 3333. Human Adaptability. (3-0) 3 Credit Hours.

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. (Formerly titled "Physical Anthropology of Human Populations.")

ANT 3343. The Contemporary Pacific. (3-0) 3 Credit Hours.

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.

ANT 3363. Indians of Mesoamerica. (3-0) 3 Credit Hours.

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.

ANT 3383. Folklore and Folklife. (3-0) 3 Credit Hours.

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.

ANT 3393. Anthropology of Frontiers and Borderlands. (3-0) 3 Credit Hours.

This course asks the questions: what are frontiers and borderlands? How do they matter in our understanding of belonging and being human across time and space? We will use ethnographic and/or archaeological texts to consider how geopolitical, linguistic, and other cultural frontiers and borderlands shape what it means to belong and to be human. This course may be repeated for credit if taught by a different instructor.

ANT 3403. Field Course in Archaeology. (0-0) 3 Credit Hours.

Prerequisite: Consent of instructor. 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. Generally offered: Summer.

ANT 3406. Field Course in Archaeology. (0-0) 6 Credit Hours.

Prerequisite: Consent of instructor. 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. Generally offered: Summer.

ANT 3413. The Ethnographic Experience. (3-0) 3 Credit Hours.

Drawing upon the ethnographic experiences of current and historical anthropologists, this course explores field research in cultural anthropology. Ethnographic methods and techniques are discussed, with emphasis on theoretical and ethical considerations. Students may engage in short-term ethnographic projects.

ANT 3453. Public Archaeology. (3-0) 3 Credit Hours.

Prerequisite: ANT 2043. Most archaeologists do not work in universities—they work in government agencies, private firms, NGOs, and museums. This course prepares students for careers in archaeology by discussing these different career paths. It provides concrete skills such as research design, fieldwork planning, budgeting, report writing, public outreach, community engagement, and/or economic impact assessment.

ANT 3503. Human Origins. (3-0) 3 Credit Hours.

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.

ANT 3513. The Human Skeleton. (3-0) 3 Credit Hours.

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.

ANT 3523. Medical Anthropology. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013, ANT 2033, or ANT 2053 recommended. This course explores primary concepts and research questions in medical anthropology by looking at how humans experience and understand health, illness, and healing. Theoretical and methodological approaches will be considered using case studies, with an emphasis on the potential that medical anthropologists have to improve health and wellbeing.

ANT 3543. Museum Studies in Anthropology. (3-0) 3 Credit Hours.
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.

ANT 3563. Anthropology of Complementary and Alternative Medicine. (3-0) 3 Credit Hours.
Prerequisite: ANT 2053 recommended. This course examines the concepts of health and healing across cultures with an emphasis on non-biomedical healing systems. It explores historical and ethnographic case studies of afflictions and the cross-cultural, non-conventional modalities for treatment and healing. Additionally the course surveys the cultural strategies and complexities of the role of the healer in various cultures.

ANT 3603. Sex, Gender, and Culture. (3-0) 3 Credit Hours.
Prerequisite: ANT 1013 or ANT 2033 recommended. Examination of the biological and cultural sources of differences between men and women.

ANT 3653. Field Course in Anthropology. (0-0) 3 Credit Hours.
Prerequisites: Consent of instructor. Offers the opportunity to gain intensive training in anthropological field methods in cultural and/or biological anthropology. 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. Generally offered: Summer.

ANT 3656. Field Course in Anthropology. (0-0) 6 Credit Hours.
Prerequisite: Consent of instructor. Offers the opportunity to gain intensive training in anthropological field methods in cultural and/or biological anthropology. 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. Generally offered: Summer.

ANT 3663. Hunters and Gatherers - Past and Present. (3-0) 3 Credit Hours.
Prerequisite: ANT 1013 or ANT 2043 recommended. Hunter-gatherer societies are frequently referred to in discussions of what it means to be human. Their knowledge of the environment and capacity for sharing have long captured our imagination. This course examines the lifeways of hunters and gatherers from around the world in both ethnographic and archaeological contexts. It considers examples of societies from the Arctic to Tropical Rainforests and explores such research topics as hunter-gatherer sharing, mobility, subsistence, and warfare among others.

ANT 3693. Research in Health and the Environment. (0-0) 3 Credit Hours.
Prerequisite: Consent of instructor. Offers the opportunity for research and service-based learning in topics of health and the environment. May be repeated for credit with advisor's permission, but not more than 6 semester credit hours will apply to a bachelor's degree.

ANT 3696. Research in Health and the Environment. (0-0) 6 Credit Hours.
Prerequisite: Consent of instructor. Offers the opportunity for research and service-based learning in topics of health and the environment. May be repeated for credit with advisor's permission, but not more than 6 semester credit hours will apply to a bachelor's degree.

ANT 3713. Anthropology of Material Culture. (3-0) 3 Credit Hours.
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").

ANT 3723. Ancient Civilizations. (3-0) 3 Credit Hours.
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").

ANT 3733. Political and Legal Anthropology. (3-0) 3 Credit Hours.
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.

ANT 3743. The Anthropology of Cyber Cultures. (3-0) 3 Credit Hours.
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.

ANT 3803. Media, Power, and Public Culture. (3-0) 3 Credit Hours.
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.

ANT 3823. Applied Anthropology. (3-0) 3 Credit Hours.
Prerequisite: ANT 1013 or ANT 2053 recommended. Applied anthropology uses anthropological theories and methods to help solve real-world problems. Through case studies, this course will explore how, where and why applied anthropology is conducted in each subfield of the discipline. Course materials and assignments will help students identify and develop anthropological skills and experiences relevant to their career aspirations.

ANT 3833. Indians of Texas. (3-0) 3 Credit Hours.
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).

ANT 3843. Introduction to Primate Diversity. (3-0) 3 Credit Hours.
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.

ANT 3853. Modern Ape Behavior, Ecology, and Cognition. (3-0) 3 Credit Hours.

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.

ANT 3863. The Evolution of Human Nature. (3-0) 3 Credit Hours.

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.

ANT 3873. Food, Culture, and Society. (3-0) 3 Credit Hours.

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. Generally offered: Summer.

ANT 3883. Death and Dying. (3-0) 3 Credit Hours.

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.

ANT 3893. Primate Ecology. (3-0) 3 Credit Hours.

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.

ANT 3903. Introduction to Linguistics. (3-0) 3 Credit Hours.

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 ANT 3903 and ENG 3343 or LNG 3813).

ANT 3933. Anthropology of Superheroes. (3-0) 3 Credit Hours.

This course will examine the world of superheroes as both an imagined universe and a fan culture. Superheroes are not simply characters in illustrated books, but reflections of our own ideas about what it does and does not mean to be human, offering dystopic/utopic reflections of our own reality and imagined future. Ultimately, our goal is to discover what an anthropology of superheroes potentially can be. The course will delve into classic anthropological concepts including: Gender, Ethnicity, Nature vs. Culture, Utopia/Dystopia, media studies, ritual, creativity, etc. while considering comic and real world superheroes.

ANT 3963. The Evolution of Sex. (3-0) 3 Credit Hours.

Prerequisite: ANT 2033 recommended. Why is there sex? This course explores the evolution of sexual reproduction as an alternative to asexual cloning that is found in most organisms. We will explore why sexual reproduction evolved, its costs and benefits, and the diversity of sexual strategies across all kingdoms of life. It concludes by examining the sexual behavior of humans and our closest primate relatives. Topics will include sexual selection, mating systems, same-sex behavior, and the evolution of monogamy.

ANT 4013. Maya Civilization. (3-0) 3 Credit Hours.

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.

ANT 4023. Histories of Anthropology. (3-0) 3 Credit Hours.

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.

ANT 4113. Archaeology of Texas. (3-0) 3 Credit Hours.

Prerequisite: ANT 2043 or ANT 3263 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.

ANT 4123. Archaeology of the American Southwest. (3-0) 3 Credit Hours.

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.

ANT 4143. Primate Feeding Biology. (3-0) 3 Credit Hours.

Prerequisite: ANT 2033, ANT 3843, or ANT 3893 recommended. An investigation into the ecology and evolution of wild primate feeding biology and nutrition. Topics include primate-plant interactions, nutritional requirements, plant defensive chemistry, foraging theory, sensory ecology, evolution of body size and its implications for feeding, and evolution of primate feeding-related anatomy.

ANT 4213. Witchcraft and Magic: Anthropological Perspectives. (3-0) 3 Credit Hours.

This course introduces the historical and contemporary treatment of witchcraft and magic from a socio-cultural perspective. It draws on anthropological models which are applied to Western European, African, Pacific, and other cultural areas to amplify the adaptive, rational, and political contexts for why and how witchcraft and magic exist.

ANT 4233. Conservation of Primates in Global Perspective. (3-0) 3 Credit Hours.

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.

ANT 4243. Ethnographic Film. (3-0) 3 Credit Hours.

Prerequisite: ANT 1013 or ANT 2053 recommended. Critique of major ethnographic films, concentrating on field methodology, production values, and the issue of representation.

ANT 4263. Anthropology of Globalization and Development. (3-0) 3 Credit Hours.

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").

ANT 4273. The Anthropology of Oil. (3-0) 3 Credit Hours.

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.

ANT 4303. Water, Sustainability, and Health. (3-0) 3 Credit Hours.

Drawing on environmental and medical anthropology, this course explores how anthropologists study issues related to water, sustainability, and health and how these are shaped by political, economic, and ecologic factors over time. This course introduces students to several of the key theoretical frameworks through which anthropologists examine struggles around water and the human consequences of water scarcity.

ANT 4333. Ecology and Evolution of Human Diseases. (3-0) 3 Credit Hours.

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. Generally offered: Spring.

ANT 4363. Primate Evolutionary Biology. (3-0) 3 Credit Hours.

Prerequisite: ANT 2033 recommended. 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.

ANT 4393. Anthropology and Public Health. (3-0) 3 Credit Hours.

This course examines public health topics from an anthropological perspective, and explores how anthropological methods can contribute to the field of public health. Topics include infectious epidemics, chronic disease, and environmental health.

ANT 4413. Genes and Human Diversity. (3-0) 3 Credit Hours.

Prerequisite: ANT 2033 recommended. What's in your genes? And which genetic changes made us human? This course will explore the intersection of genetics and anthropology with a focus on applying genetics to current topics such as behavior, life history, adaptation, migration, and disease. We will cover the use of molecular methods and the ways that recent advances in genetics provide new insights into the evolution of humans and non-human primates. Topics covered include adaptation and selection on the human genome, genetic diseases, human origins and peopling of world, the use of DNA in forensic science, and/or the genetics of behavioral traits.

ANT 4433. One Health: Global Health and Conservation Medicine. (3-0) 3 Credit Hours.

A One Health perspective explores the deep connections between human health, the health of wildlife and livestock, and the ecosystems we share. This course examines the complex environmental causes of infectious diseases, the ecological and population factors responsible for the emergence and spread of infectious diseases in humans and nonhuman animals, the roles of zoonotic diseases in human health, and the importance of community-based conservation medicine in addressing the spread of infectious diseases.

ANT 4911. Independent Study. (0-0) 1 Credit Hour.

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.

ANT 4912. Independent Study. (0-0) 2 Credit Hours.

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.

ANT 4913. Independent Study. (0-0) 3 Credit Hours.

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.

ANT 4933. Internship in Anthropology. (0-0) 3 Credit Hours.

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.

ANT 4936. Internship in Anthropology. (0-0) 6 Credit Hours.

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.

ANT 4953. Special Studies in Anthropology. (3-0) 3 Credit Hours.

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.

ANT 4973. Seminar in Anthropology. (3-0) 3 Credit Hours.

Prerequisite: Junior or senior standing as an anthropology major. A seminar reserved for anthropology majors during their junior or senior year. Areas of significant new research in each subfield of the discipline will be reviewed in conjunction with individualized research projects.

ANT 4983. Anthropology Honors Research. (0-0) 3 Credit Hours.

Prerequisite: Enrollment limited to candidates for Department Honors with 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.

ANT 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for University Honors in Anthropology and consent of the Honors College. Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval.

Arabic (ARA)

Arabic (ARA) Courses

ARA 1014. Elementary Arabic I. (3-2) 4 Credit Hours. (TCCN = ARAB 1411)

Fundamentals of Arabic offering the opportunity to develop speaking, listening, reading, and writing skills. Introduction to Arabic culture. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall. Course Fees: LRC1 \$16; LRLF \$10; MM01 \$7.

ARA 1024. Elementary Arabic II. (3-2) 4 Credit Hours. (TCCN = ARAB 1412)

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. Generally offered: Spring. Course Fee: MM01 \$7.

ARA 2013. Intermediate Arabic I. (3-1) 3 Credit Hours. (TCCN = ARAB 2311)

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. Course Fee: MM01 \$7.

ARA 2023. Intermediate Arabic II. (3-1) 3 Credit Hours. (TCCN = ARAB 2312)

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. Course Fee: MM01 \$7.

Architecture (ARC)

Architecture (ARC) Courses

ARC 1113. Introduction to the Built Environment. (3-0) 3 Credit Hours. (TCCN = ARCH 1311)

Prerequisites: Completion of or concurrent enrollment in ARC 1213 and ARC 1313. An introduction to the design and construction of the built environment. Includes consideration of professional practice, ethics, interior design, landscape architecture, planning, urbanism and construction. May be applied toward the core curriculum requirement in Language, Philosophy and Culture. (Formerly COA 1113. Credit cannot be earned for both ARC 1113 and COA 1113). Course Fees: LRC1 \$12; SAP1 \$25; STSA \$15.

ARC 1133. Construction Material and Concepts. (3-0) 3 Credit Hours.

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 historic role of materials in architectural and interior design. (Formerly ARC 2213 and COA 1133. Credit cannot be earned for ARC 1133 and either ARC 2213 or COA 1133.) Course Fees: SAP1 \$25; STSA \$15.

ARC 1151. Introduction to Architecture and Design. (1-0) 1 Credit Hour.

A lecture course introducing ideas and concepts associated with architectural and interior design. Course Fees: SAP1 \$25; STSA \$5.

ARC 1213. Design I. (0-8) 3 Credit Hours. (TCCN = ARCH 1303)

Introduction to design through a focus on design literacy and the creative conceptualization through direct engagement with materials and processes of making. Introduction to architectural design processes, materials, precedents, and architectural ideas. Projects investigate basic issues fundamental to design and experience of human environments. (Formerly ARC 1214 and COA 1213. Credit cannot be earned for more than one of the following: ARC 1214, ARC 1213, or COA 1213.) Course Fees: SAP1 \$25; STSA \$15.

ARC 1224. Design II. (1-8) 4 Credit Hours.

Prerequisites: ARC 1213 and ARC 1313. Introduction to design as a broadly creative process that stresses creative and conceptual development through representational visualization. Explores the role of spatial experience, context, program, architectural form, circulation, elements, materials, human factors, color, and light in the design of human environments. Introduction to spatial types and ordering systems, architectural precedents, architectural conventions, and critical thought pertaining to design of the built environment. Includes a weekly lecture. (Formerly ARC 1223. Credit cannot be earned for both ARC 1223 and ARC 1224.) Course Fees: SAP1 \$25; STSA \$15.

ARC 1313. Design Visualization. (0-8) 3 Credit Hours.

Prerequisites: Completion of or concurrent enrollment in ARC 1113 and ARC 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. (Formerly COA 1313. Credit cannot be earned for both ARC 1313 and COA 1313.) Course Fees: SAP1 \$25; STSA \$15.

ARC 1513. Great Buildings and Cities of the World. (3-0) 3 Credit Hours.

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. May be applied toward the core curriculum requirement in Creative Arts. Course Fees: LRC1 \$12; SAP1 \$25; STSA \$15.

ARC 2133. Principles of Architectural Structures. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major. An introduction to the principles of architectural structures as related to architectural design. Includes consideration of spatial, structural, and aesthetic issues of building structural systems, and introduces structural behavior, forces and responses in structural systems. Course Fees: SAP1 \$25; STSA \$15.

ARC 2156. Drawing and Modeling Studio. (0-14) 6 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major. Architectural design through the agency of model building and drawing. Course focuses on the design of buildings (including consideration of structure, material, space, and form) responsive to the site and context. Course Fees: SAP1 \$25; STSA \$30.

ARC 2166. Digital Design Studio. (0-14) 6 Credit Hours.

Prerequisites: Enrollment as an ARC or IDE major. Architectural design through the agency of digital design media. Course focuses on the design of buildings (including consideration of structure, material, space, and form) responsive to the site and context. Course Fees: SAP1 \$25; STSA \$30.

ARC 2233. Principles of Environmental Systems. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major. Introduction to the design of environmentally responsive buildings and the natural and artificial systems that support them. Includes consideration of topics such as, embodied energy, active and passive heating and cooling, indoor air quality, solar orientation, daylighting and artificial illumination, acoustics, and building services systems. Course Fees: SAP1 \$25; STSA \$15.

ARC 2413. History of Architecture I. (3-0) 3 Credit Hours. (TCCN = ARCH 1301)

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. May be applied toward the core curriculum requirement in Creative Arts. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; SAP1 \$25; STSA \$15.

ARC 2423. History of Architecture II. (3-0) 3 Credit Hours. (TCCN = ARCH 1302)

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. Generally offered: Spring. Course Fees: SAP1 \$25; STSA \$15.

ARC 2513. Digital Design Media. (2-2) 3 Credit Hours.

Prerequisites: Enrollment as an ARC or IDE major and consent of instructor. Introduction to 2-dimensional and 3-dimensional digital design media. Addresses design skills, principles, techniques, procedures, and knowledge of how digital media impacts the design process, profession, and design culture. Generally offered: Fall. Course Fees: SAP1 \$25; STSA \$15.

ARC 3113. Advanced Design Visualization. (0-6) 3 Credit Hours.

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. May be repeated for credit when topics vary. Generally offered: Fall, Spring. Course Fees: SAP1 \$25; STSA \$15.

ARC 3433. Topics in Architecture and Thought. (3-0) 3 Credit Hours.

Prerequisites: Enrollment as an Architecture or Interior Design major and consent of instructor. A lecture/seminar course that provides students the opportunity to explore a variety of architectural ideas, concepts, theories, approaches, or topics related to architectural design. May be repeated for credit when topics vary. Generally offered: Fall, Spring. Course Fees: SAP1 \$25; STSA \$15.

ARC 3613. History of Modern Architecture. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: SAP1 \$25; STSA \$15.

ARC 4143. Architecture Topics. (3-0) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. A course exploring issues in architecture. May be repeated for credit when topics vary. Course Fees: SAP1 \$25; STSA \$15.

ARC 4156. Building Design Studio. (0-14) 6 Credit Hours.

Prerequisites: ARC 2156, ARC 2166, and ARC 2233. Architectural design with emphasis on building technology, materials, assemblies, tectonics, structure, environmental systems, and the inter-relationship of building and environment. Course may be repeated for credit. No more than 24 credit hours of ARC 4156 may count towards the degree. Course Fees: SAP1 \$25; STSA \$30.

ARC 4183. Environmental Systems. (2-2) 3 Credit Hours.

Prerequisites: ARC 2156, ARC 2166, and ARC 2233. Advanced issues in the design of environmentally responsive buildings and the natural and artificial systems that support them, such as embodied energy, active and passive heating and cooling, indoor air quality, solar orientation, daylighting and artificial illumination, acoustics, and building services systems. Includes the use of appropriate performance assessment tools. Course Fees: SAP1 \$25; STSA \$15.

ARC 4213. Furniture Design and Construction. (0-8) 3 Credit Hours.

Prerequisite: ARC 2156, ARC 2166, or consent of instructor. Focuses on essential elements of furniture design and construction, emphasizing relations to architectural space, human factors, and the use of materials, connections, and finishes. Course Fees: SAP1 \$25; STSA \$15.

ARC 4223. Topics in Design Computing. (2-2) 3 Credit Hours.

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. Course Fees: SAP1 \$25; STSA \$15.

ARC 4233. Computer Projects in Design. (2-2) 3 Credit Hours.

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.) Course Fees: SAP1 \$25; STSA \$15.

ARC 4246. Systems Studio. (0-14) 6 Credit Hours.

Prerequisite: ARC 4156 (taken twice). Advanced architectural design studio addressing the theoretical and practical issues of considerate and responsible design and detailing of a small building from the ground up. Addresses the whole building in terms of its integration with the site and climate, its structural, environmental, daylighting, and envelope systems as well as accessibility, life safety, and vertical circulation. Course Fees: SAP1 \$25; STSA \$30.

ARC 4283. Architectural Structures. (2-2) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166. Advanced study of architectural structures; 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 in the design of buildings. Course Fees: SAP1 \$25; STSA \$15.

ARC 4333. Practicum/Internship. (0-0) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 and consent of instructor. Offers students majoring in architecture or interior design a supervised professional practice experience with public agencies or private firms. Individual conferences and written reports required. Generally offered: Summer. Course Fees: SAP1 \$25; STSA \$15.

ARC 4816. International Studies Studio. (0-14) 6 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. An architecture or planning studio associated with a study abroad program. (Formerly titled "Study Abroad: Studio.") (Same as IDE 4816. Credit cannot be earned for both ARC 4816 and IDE 4816.) Generally offered: Fall, Spring. Course Fees: SAP1 \$25; STSA \$30.

ARC 4823. International Studies Theory Seminar. (3-0) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. A lecture/seminar course associated with a study abroad program; involves field trips. (Formerly titled "Study Abroad: History/Theory.") (Same as IDE 4823. Credit cannot be earned for both ARC 4823 and IDE 4823.) Generally offered: Spring. Course Fees: SAP1 \$25; STSA \$15.

ARC 4833. International Studies Drawing Seminar. (0-8) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. A drawing course associated with a study abroad program; involves field trips. (Formerly titled "Study Abroad: Observational Drawing.") (Same as IDE 4833. Credit cannot be earned for both ARC 4833 and IDE 4833.) Generally offered: Fall, Spring. Course Fees: SAP1 \$25; STSA \$15.

ARC 4843. International Studies History Seminar. (3-0) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. A lecture/seminar course associated with a study abroad program; involves field trips. (Same as IDE 4843. Credit cannot be earned for both ARC 4843 and IDE 4843.) Course Fees: SAP1 \$25; STSA \$15.

ARC 4911. Independent Study. (0-0) 1 Credit Hour.

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. Course Fees: SAP1 \$25; STSA \$5.

ARC 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fees: SAP1 \$25; STSA \$15.

ARC 4916. Independent Study. (0-0) 6 Credit Hours.

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. Course Fees: SAP1 \$25; STSA \$30.

ARC 4953. Special Studies in Architecture. (3-0) 3 Credit Hours.

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. Course Fees: SAP1 \$25; STSA \$15.

ARC 4956. Special Studies in Architecture. (0-14) 6 Credit Hours.

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. Course Fees: SAP1 \$25; STSA \$15.

Art (ART)

NOTE: Due to the instructional format of studio/laboratory classes, auditors will not be approved for ART courses.

Art (ART) Courses

ART 1003. Two Dimensional Foundations. (0-6) 3 Credit Hours. (TCCN = ARTS 1311)

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.") Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 1013. Three Dimensional Foundations. (0-6) 3 Credit Hours. (TCCN = ARTS 1312)

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.") Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 1023. Digital Arts Foundations. (0-6) 3 Credit Hours.

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 digital approaches, technology and programs, with an emphasis on the development of creative and critical skills as applied to the making of fine art. This course may not be applied to Core Curriculum requirements. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 1103. Introduction to Visual Arts. (3-0) 3 Credit Hours. (TCCN = ARTS 1301)

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 Creative 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. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRLF \$10; SAF1 \$35.

ART 1143. Art for Non-Art Majors. (0-6) 3 Credit Hours. (TCCN = ARTS 1325)

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 not be applied to the degree requirements for a major in art. Generally offered: Fall, Spring, Summer. Course Fees: LRLF \$10; SAF1 \$35.

ART 1213. Drawing I. (0-6) 3 Credit Hours. (TCCN = ARTS 1316)

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. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 1223. Drawing II. (0-6) 3 Credit Hours. (TCCN = ARTS 1317)

Prerequisite: 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. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 2113. Painting: Basic. (0-6) 3 Credit Hours. (TCCN = ARTS 2316)

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. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 2223. New Media: Basic. (0-6) 3 Credit Hours.

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 in time-based media, providing an opportunity to learn a broad range of skills and techniques such as the fundamentals of sound and moving image production, projection, and multimedia installation. Basic digital concepts covered include Mac OSX operating system techniques, digital capturing of A/V media, non-linear editing, storage and backup of media files, and file conversions. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 2313. Photography: Basic. (0-6) 3 Credit Hours. (TCCN = ARTS 2356)

Prerequisites: ART 1003 and ART 1023. This introductory level course will offer instruction on 35mm camera controls and black & white and color image development in both digital and analog darkroom environments. This course covers 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 in addition to analog film processing and black & white printing. Projects emphasize both aesthetic and conceptual development through the introduction of historic and contemporary photographic genres. Students must have access to both digital and film SLR cameras; some cameras are available through the Visual Resource Center to students enrolled in this course. Transfer students who have not had access to both digital and analog darkroom techniques will need to enroll in this course prior to proceeding to Photography Intermediate and Advanced Topics (ART 3513 and ART 4533). (Formerly ART 2513.) Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 2413. Printmaking: Basic. (0-6) 3 Credit Hours. (TCCN = ARTS 2333)

Prerequisites: ART 1003 and ART 1213. Introduction to printmaking processes, concepts, and materials. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 2613. Sculpture: Basic. (0-6) 3 Credit Hours. (TCCN = ARTS 2326)

Prerequisites: ART 1013 and ART 1223. Instruction in basic sculptural concepts and materials. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 2713. Ceramics: Basic. (0-6) 3 Credit Hours. (TCCN = ARTS 2346)

Prerequisite: ART 1013. 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. Generally offered: Fall, Spring, Summer. Course Fee: SAF1 \$35.

ART 3023. Color Theory and Practice. (0-6) 3 Credit Hours.

Prerequisites: ART 1003, ART 1013, and ART 1213. 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. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 3033. Contemporary Studio: Concepts and Practice. (0-6) 3 Credit Hours.

Prerequisite: 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 Modern and Contemporary Art. Projects encourage collaborative efforts and nontraditional solutions and focus on conceptual development. Required of all B.A. in Art and B.F.A. degree candidates. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 3113. Painting II. (0-6) 3 Credit Hours.

Prerequisites: ART 1003, ART 1023, 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. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 3133. Painting III. (0-6) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 3223. Drawing: Figure. (0-6) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 3233. Drawing: Intermediate. (0-6) 3 Credit Hours.

Prerequisite: ART 1223. Structured drawing projects assigned with an emphasis on the interrelationship of drawing and space. Explores a range of spatial models including observational, abstract, and physical. May be repeated once for credit. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 3513. Photography: Intermediate. (0-6) 3 Credit Hours.

Prerequisite: ART 2313. This course builds on technical knowledge through the introduction of 35mm and medium film formats as well as black & white techniques and laboratory procedures. The course provides 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 may be repeated for credit. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 4033. Studio Art Problems. (0-6) 3 Credit Hours.

Prerequisite: Satisfactory completion of 9 semester credit hours of any three 2000-level basic art courses, and consent of instructor. 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. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 4133. Painting / Drawing IV. (0-6) 3 Credit Hours.

Prerequisites: ART 3133 or ART 4233 and consent of instructor. Development of an individual direction in painting or drawing (including mixed media, hybrid forms, and experimental approaches) emphasizing the successful synthesis of material, technical, formal and conceptual qualities specific to each student's work. Additional emphasis is given to the understanding and articulation of historical and contemporary issues in the theory and practice of painting and drawing. Other course work, such as reading and/or writing assignments may be required to complement individual studio work. Students repeating ART 4133 will be required to demonstrate an advanced and expanded performance building on their accomplishments in prior sections of ART 4133. Permission of instructor is required for enrollment in this course. Admission is based on student's demonstrated ability to undertake the development of a focused and proficient body of work with dedicated time in the studio environment. May be repeated for credit. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 4233. Drawing: Advanced. (0-6) 3 Credit Hours.

Prerequisites: ART 3233 and consent of instructor. Diverse topics with an emphasis on contemporary drawing practices such as drawing and the body, drawing and duration, and drawing and site. May be repeated for credit. (Formerly titled "Drawing III.") Generally offered: Summer. Course Fee: SAF1 \$35.

ART 4313. New Media. (0-6) 3 Credit Hours.

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.") Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 4433. Printmaking. (0-6) 3 Credit Hours.

Prerequisites: ART 1023 and 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. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 4533. Photography: Advanced Topics. (0-6) 3 Credit Hours.

Prerequisites: ART 2313 and ART 3513. Emphasis on the development of a personal voice through exploration of advanced photographic techniques, and 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 techniques covered in ART 2313 and ART 3513 must enroll in these courses 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.") Generally offered: Fall, Spring. Summer. Course Fee: SAF1 \$35.

ART 4673. Sculpture. (0-6) 3 Credit Hours.

Prerequisites: ART 1003, ART 1023, 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. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 4753. Ceramics. (0-6) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fee: SAF1 \$35.

ART 4833. Internship in the Visual Arts. (0-0) 3 Credit Hours.

Prerequisite: Consent of instructor. 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.") Generally offered: Summer. Course Fee: SAF1 \$35.

ART 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisite: Enrollment contingent upon completion and approval of Independent Study form. 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. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 4953. Special Studies in Art. (0-6) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fee: SAF1 \$35.

ART 4973. B.A. Senior Seminar. (0-6) 3 Credit Hours.

Prerequisites: B.A. in Art students must have completed ART 3033 and must have completed application for graduation; must be taken in the last semester of degree completion. This course is a capstone experience for all students receiving the B.A. in Art and Art History. Students will prepare a final project in the form of a portfolio or written research project, with faculty approval. Various other course activities can include guest speakers, field trips, professional practices and life after graduation strategies. Students that need specialized studio access to complete portfolio pieces must be concurrently enrolled in the advanced section of the appropriate studio specialization in order to use the facilities. This course is only offered in the Fall and Spring semesters.

ART 4983. B.F.A. Senior Seminar and Exhibition. (0-6) 3 Credit Hours.

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. Students must be concurrently enrolled in the advanced section of their specialization in order to access the studio facilities and realize the final project. This course is only offered in the Fall and Spring semesters. Course Fee: SAF1 \$35.

Art History and Criticism (AHC)

Art History and Criticism (AHC) Courses

AHC 1113. Survey of Art and Architecture from Prehistoric Times to 1350. (3-0) 3 Credit Hours. (TCCN = ARTS 1303)

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 Creative Arts Core Curriculum requirements for art and non-art majors. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

AHC 1123. Survey of Art and Architecture in Europe and the New World from 1350 to 1750. (3-0) 3 Credit Hours. (TCCN = ARTS 1304)

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 Creative Arts Core Curriculum requirement for art and non-art majors. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRLF \$10.

AHC 1133. Survey of Modern Art. (3-0) 3 Credit Hours.

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 Creative Arts Core Curriculum requirement for art and non-art majors. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRLF \$10.

AHC 3113. Contemporary Art. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring, Summer.

AHC 3423. Arts of Ancient Mesoamerica. (3-0) 3 Credit Hours.

Prerequisite: 3 semester credit hours of lower-division art history. A critical and historical study of art and architecture in Mexico and Central America before the Spanish conquest (1600 BC-1521 AD). (Formerly titled "Pre-Columbian Art and Architecture of Mesoamerica" and "Arts of Ancient America").

AHC 3523. Latin American Art. (3-0) 3 Credit Hours.

Prerequisite: 3 semester credit hours of lower-division art history. A critical and historical study of art from the independence period to the present.

AHC 4333. Topics in Art History and Criticism. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer.

AHC 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisite: Permission in writing (departmental 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.

AHC 4933. Art Gallery and Museum Internship. (0-0) 3 Credit Hours.

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 a total of 6 credit hours. Enrollment limited to juniors and seniors with declared major or minor in Art History and Criticism. Generally offered: Spring.

Astronomy (AST)

NOTE: All prerequisites for Astronomy (AST) courses must be completed with a grade of "C-" or better.

Astronomy (AST) Courses

AST 1013. Introduction to Astronomy. (3-0) 3 Credit Hours. (TCCN = ASTR 1303)

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 Core Curriculum requirement in Life and Physical Sciences. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRS1 \$15; MEPA \$18; STSI \$15.

AST 1031. Introduction to Astronomy Laboratory. (1-2) 1 Credit Hour. (TCCN = ASTR 1103)

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. Generally offered: Fall, Spring. Course Fees: IUP1 \$20; LRS1 \$5; STSI \$5.

AST 1033. Exploration of the Solar System. (3-0) 3 Credit Hours. (TCCN = ASTR 1304)

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 Core Curriculum requirement in Life and Physical Sciences. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRS1 \$15; MEPA \$18; STSI \$15.

AST 1043. Current Topics in Astronomy. (3-0) 3 Credit Hours.

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.

AST 1113. Astronomy for Educators. (3-0) 3 Credit Hours.

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.

AST 3001. Undergraduate Astronomy Seminar. (1-0) 1 Credit Hour.

Prerequisite: Completion of or concurrent enrollment in AST 3023 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.

AST 3013. Fundamentals of Astronomy. (3-0) 3 Credit Hours.

Prerequisites: PHY 1963 (or PHY 1923 in previous catalogs) 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 3013 and AST 2063.) Generally offered: Summer. Course Fees: LRS1 \$15; MEPA \$18; STSI \$15.

AST 3023. Introduction to Astrophysics. (3-0) 3 Credit Hours.

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.) Course Fees: LRS1 \$15; MEPA \$18; STSI \$15.

AST 3033. Observational Techniques in Astronomy. (3-0) 3 Credit Hours.

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.

AST 3043. Astrochemistry. (3-0) 3 Credit Hours.

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.

AST 3103. Observational Astronomy Laboratory. (0-6) 3 Credit Hours.

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. Course Fee: STSI \$15.

AST 4203. Stellar Astrophysics. (3-0) 3 Credit Hours.

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. Course Fees: LRS1 \$15; STSI \$15.

AST 4303. Solar System Astrophysics. (3-0) 3 Credit Hours.

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.") Course Fee: STSI \$15.

AST 4953. Special Studies in Astronomy. (3-0) 3 Credit Hours.

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. Course Fee: STSI \$15.

Bicultural Bilingual Studies (BBL)

Bicultural Bilingual Studies (BBL) Courses

BBL 2003. Language, Culture, and Society. (3-0) 3 Credit Hours. (TCCN = ANTH 2351)

The interdisciplinary study of language in its cultural and social contexts, with emphasis on linguistically diverse communities. Topics include language and ethnicity, language and gender, language and social class, language acquisition, oral and written language, and language variation and change. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences. Generally offered: Spring. Course Fees: LRC1 \$12; LRH1 \$10; STSH \$15.

BBL 2023. Latino Cultural Expressions. (3-0) 3 Credit Hours. (TCCN = HUMA 1311)

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. May be applied toward the Core Curriculum requirement in Creative Arts. (Same as MAS 2023. Credit cannot be earned for both BBL 2023 and MAS 2023.) Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRH1 \$10; STSH \$15.

BBL 2033. Multiculturalism in the Southwest. (3-0) 3 Credit Hours.

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. (Same as MAS 2033. Credit Cannot be earned for both BBL 2033 and MAS 2033.) Course Fees: LRH1 \$10; STSH \$15.

BBL 2123. Diversity in Early Childhood. (3-0) 3 Credit Hours.

Study of diversity within early childhood contexts including culture, language, traditions, beliefs, family structure, socioeconomic background, ability, and national origin within the U.S. and the world. (Same as ECE 2123. Credit cannot be earned for both BBL 2123 and ECE 2123.) Course Fees: LRH1 \$10; STSH \$15.

BBL 2243. Globalizing the Local: Bilingual Families, Communities, and Schools. (3-0) 3 Credit Hours. (TCCN = ANTH 2351)

This course examines the interrelatedness among families, communities, and schools in supporting the achievement of Latina/o bilingual children. Taking a local approach to a global phenomenon—preparing bilingual/multilingual children in an increasingly interconnected world, this course explores how historical, political, and social factors influence access to a quality education. Issues pertaining to cultural transmission and maintenance of transnational ties will also be addressed. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences. Course Fees: LRC1 \$12; LRH1 \$10; STSH \$15.

BBL 3013. Language Analysis and Bilingualism. (3-0) 3 Credit Hours.

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. Generally offered: Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

BBL 3023. Mexican American Culture. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

BBL 3033. Mexican Americans in the Southwest. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

BBL 3043. Social Psychological Considerations in Mexican American Communities. (3-0) 3 Credit Hours.

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.) Course Fees: LRH1 \$10; STSH \$15.

BBL 3053. Foundations of Bilingual Studies. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

BBL 3133. Language Development in Bilinguals. (3-0) 3 Credit Hours.

A study of bilingual language development in its social and cultural contexts. Emphasis on factors affecting successful bilingual language development in schools and communities. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

BBL 3143. Children's Literature for Bilingual Learners. (3-0) 3 Credit Hours.

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. Field experience required. Generally offered: Fall, Summer. Course Fees: LRH1 \$10; STSH \$15.

BBL 3403. Cultural and Linguistic Equity for Schooling. (3-0) 3 Credit Hours.

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. Field experience required. (Formerly titled "Cultural and Linguistic Diversity in a Pluralistic Society.") Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

BBL 3823. Reading Comprehension in Bilingual Settings. (3-0) 3 Credit Hours.

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 LTED 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 Clinical Teaching: Early Childhood–Grade 6. Restricted course; advisor code required for registration. Field experience required. BBL 3823 is primarily taught in Spanish. (Credit cannot be earned for both LTED 3823 and BBL 3823.) Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

BBL 4003. Spanish for Bilingual Instructional Delivery. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

BBL 4013. Advanced Spanish for Bilingual Teaching and Learning. (3-0) 3 Credit Hours.

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. Generally offered: Summer. Course Fees: LRH1 \$10; STSH \$15.

BBL 4033. Assessment, Learning, and Motivation in Bicultural-Bilingual Classrooms. (3-0) 3 Credit Hours.

Prerequisites: Admission to a Bilingual Generalist Teacher Certification Program; BBL 3053, LTED 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. Field experience is required. Taught in Spanish and English. Generally offered: Fall, Spring. Course Fees: LEA2 \$15; LRH1 \$10; STF1 \$57; STSH \$15.

BBL 4043. Dual Language Education in Early Childhood. (3-0) 3 Credit Hours.

Appropriate bilingual programs and pedagogical strategies for young children. Special emphasis on immersion programs and the effects on children's development. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

BBL 4063. Bilingual Approaches to Content-Based Learning. (3-0) 3 Credit Hours.

Prerequisites: Admission to a Bilingual Generalist Teacher Certification Program; BBL 3053, LTED 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. Field experience required. Taught in Spanish. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

BBL 4073. Language Arts in a Bicultural-Bilingual Program. (3-0) 3 Credit Hours.

Prerequisites: Admission to a Bilingual Generalist Teacher Certification Program; BBL 3053, LTED 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. Field experience required. Taught in Spanish. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

BBL 4353. Approaches to Teaching Science EC–6. (2-2) 3 Credit Hours.

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.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

BBL 4403. Approaches to Teaching Mathematics EC–6. (3-0) 3 Credit Hours.

Prerequisites: Admission to Bilingual Generalist EC–6 Teacher Certification Program; BBL 3053, LTED 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.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

BBL 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fee: STSH \$15.

BBL 4953. Special Studies in Bilingual and Bicultural Studies. (3-0) 3 Credit Hours.

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 is required. Course Fees: LRH1 \$10; STSH \$15.

Biology (BIO)

NOTE: All prerequisites for Biology (BIO) courses must be completed with a grade of "C-" or better.

Biology (BIO) Courses

BIO 1033. Drugs and Society. (3-0) 3 Credit Hours. (TCCN = PHED 1346)

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 Social and Behavioral Sciences. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

BIO 1053. Introductory Microbiology. (3-0) 3 Credit Hours. (TCCN = BIOL 2320)

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.) Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

BIO 1061. Introductory Microbiology Laboratory. (0-3) 1 Credit Hour. (TCCN = BIOL 2120)

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.) Generally offered: Fall, Spring, Summer. Course Fees: IUB1 \$10; L001 \$30; LRS1 \$5; STSI \$5.

BIO 1233. Contemporary Biology I. (3-0) 3 Credit Hours. (TCCN = BIOL 1308)

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 Core Curriculum requirement in Life and Physical Sciences. May not be applied to a B.S. degree in Biology or B.S. degree in Microbiology and Immunology. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

BIO 1243. Contemporary Biology II. (3-0) 3 Credit Hours. (TCCN = BIOL 1309)

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 Core Curriculum requirement in Life and Physical Sciences. May not be applied to a B.S. degree in Biology or the B.S. degree in Microbiology and Immunology. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

BIO 1404. Biosciences I. (3-4) 4 Credit Hours. (TCCN = BIOL 1406)

Prerequisite: Completion of or concurrent enrollment in one of the following: STA 1053, MAT 1023, 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 3 hours of lecture and a mandatory 3.5-hour laboratory per week. May be applied toward the Core Curriculum requirement in Life and Physical Sciences. (Formerly BIO 1113 and BIO 1203. Credit cannot be earned for both BIO 1404 and BIO 1113 or BIO 1203.) Generally offered: Fall, Spring, Summer. Course Fees: IUB1 \$10; L001 \$30; LRC1 \$16; LRS1 \$20; STSI \$20.

BIO 1414. Biosciences II. (3-4) 4 Credit Hours. (TCCN = BIOL 1407)

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. The course includes 3 hours of lecture and a mandatory 3.5-hour laboratory per week. May be applied toward the Core Curriculum requirement in Life and Physical Sciences. (Formerly BIO 1143, BIO 1223 and BIO 1413. Credit cannot be earned for more than one of the following: BIO 1143, BIO 1223, BIO 1413, BIO 1414, or ES 2013.) Generally offered: Fall, Spring, Summer. Course Fees: IUB1 \$10; L001 \$30; LRC1 \$16; LRS1 \$20; STSI \$20.

BIO 2003. Biology of Human Reproduction. (3-0) 3 Credit Hours.

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.) Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

BIO 2043. Nutrition. (3-0) 3 Credit Hours. (TCCN = BIOL 1322)

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.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

BIO 2051. Human Anatomy and Physiology Laboratory I. (0-3) 1 Credit Hour. (TCCN = BIOL 2101)

Prerequisite: BIO 1233 or BIO 1404. Concurrent enrollment in BIO 2053 is recommended. This laboratory supplements the BIO 2053 lecture. It is the first of a two-course laboratory sequence that uses both dissections of representative organisms and laboratory experimentation to study human anatomical systems and physiological processes. (Credit cannot be earned for both BIO 2051 and BIO 2091. BIO 2051 cannot substitute for BIO 3422.) Generally offered: Fall, Spring, Summer. Course Fees: IUB1 \$10; L001 \$30; LRS1 \$5; STSI \$5.

BIO 2053. Human Anatomy and Physiology I. (3-0) 3 Credit Hours. (TCCN = BIOL 2301)

Prerequisite: BIO 1233 or BIO 1404. Concurrent enrollment in BIO 2051 is recommended. This is the first of a two-course sequence that provides an integrative study of the anatomy and physiology of the human body with an emphasis on the structure/function interrelationships between organ systems. Topics covered include cell and tissue biology, the integumentary, skeletal, muscular, and nervous systems. (Credit cannot be earned for both BIO 2053 and BIO 2083. BIO 2053 cannot substitute for BIO 3413.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

BIO 2061. Human Anatomy and Physiology Laboratory II. (0-3) 1 Credit Hour. (TCCN = BIOL 2102)

Prerequisite: BIO 2051. Concurrent enrollment in BIO 2063 is recommended. This laboratory supplements the BIO 2063 lecture. It is the second of a two-course laboratory sequence that uses both dissections of representative organisms and laboratory experimentation to study human anatomical systems and physiological processes. (Credit cannot be earned for both BIO 2061 and BIO 2111. BIO 2061 cannot substitute for BIO 3422.) Generally offered: Fall, Spring, Summer. Course Fees: IUB1 \$10; L001 \$30; LRS1 \$5; STSI \$5.

BIO 2063. Human Anatomy and Physiology II. (3-0) 3 Credit Hours. (TCCN = BIOL 2302)

Prerequisite: BIO 2053. Concurrent enrollment in BIO 2061 is recommended. This is the second of a two-course sequence that provides an integrative study of the anatomy and physiology of the human body with an emphasis on the structure/function interrelationships between organ systems. Topics covered include the endocrine, digestive, respiratory, cardiovascular, lymphatic/immune, renal and reproductive systems. Human growth and development will also be covered. (Credit cannot be earned for both BIO 2063 and BIO 2103. BIO 2063 cannot substitute for BIO 3413.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

BIO 2313. Genetics. (3-0) 3 Credit Hours. (TCCN = BIOL 2316)

Prerequisites: BIO 1414 and completion or concurrent enrollment in one of the following: MAT 1093 (or higher) 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. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

BIO 2322. Genetics Laboratory. (1-4) 2 Credit Hours.

Prerequisites: BIO 1414 and completion or concurrent enrollment in BIO 2313, and in one of the following: MAT 1093 (or higher) 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. Generally offered: Fall, Spring, Summer. Course Fees: IUB1 \$10; L001 \$30; LRS1 \$10; STSI \$10.

BIO 3013. Introduction to Clinical Medicine and Pathology. (3-0) 3 Credit Hours.

Prerequisite: BIO 1404. Introduction to concepts of human disease, diagnosis, and underlying pathology. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

BIO 3043. UTeachSA Research Methods. (3-0) 3 Credit Hours.

Prerequisite: This course is only open to students who are participating in the UTeachSA teacher preparation program. Students design and carry out independent inquiries, which they write up and present in the manner that is common in the scientific community. Inquiries incorporate mathematics and the various science disciplines to solve research problems. Only 6 semester credit hours of BIO 3043, BIO 4911-3, BIO 4923 and BIO 4993, in any combination, can be taken as BIO electives. Additional research hours of these courses (excluding Independent Study) may be taken as free electives, for a maximum of 12 research hours being applied to the bachelor's degree. (Credit cannot be earned for both BIO 3043 and UTE 3043.) Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

BIO 3123. Comparative Vertebrate Anatomy. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414. 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.) Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

BIO 3213. Animal Behavior. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414 or consent of instructor. This course will introduce various approaches to the study of animals and their behavior in natural habitats. The course will examine basic principles derived from studying the evolution, ecology and development of animals, and use these principles to explain how and why animals behave as they do in particular situations. Generally offered: Fall, Summer. Course Fees: LRS1 \$15; STSI \$15.

BIO 3263. The Woody Plants. (2-3) 3 Credit Hours.

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. (Same as ES 3223. Credit cannot be earned for both BIO 3263 and ES 3223.) Generally offered: Fall. Course Fees: LRS1 \$15; STFB \$40; STSI \$15.

BIO 3273. Biology of Flowering Plants. (2-3) 3 Credit Hours.

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. (Same as ES 3213. Credit cannot be earned for both BIO 3273 and ES 3213.) Generally offered: Spring. Course Fees: LRS1 \$15; STFB \$40; STSI \$15.

BIO 3283. Principles of Ecology. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414. 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. (Credit cannot be earned for both BIO 3283 and ES 3033.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

BIO 3292. Principles of Ecology Laboratory. (0-6) 2 Credit Hours.

Prerequisites: BIO 1414 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. (Credit cannot be earned for both BIO 3292 and ES 3042.) Generally offered: Fall, Spring, Summer. Course Fees: IUB1 \$10; L001 \$30; LRS1 \$10; STFB \$40; STSI \$10.

BIO 3323. Evolution. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313. A discussion of theories and possible mechanisms for evolutionary changes at various levels of organization. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

BIO 3333. Plants and Society. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313. The importance of plants and plant-derived products to human health and wellbeing 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.) Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

BIO 3343. Plant Cell Biology. (3-0) 3 Credit Hours.

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.") Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

BIO 3413. Physiology. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313. 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.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

BIO 3422. Physiology Laboratory. (0-5) 2 Credit Hours.

Prerequisite: Completion 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.) Generally offered: Fall, Spring, Summer. Course Fees: IUB1 \$10; L001 \$30; LRS1 \$10; STSI \$10.

BIO 3433. Neurobiology. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414. Concurrent enrollment in BIO 3442 is recommended. Anatomy and physiology of nervous systems; the mechanisms of neuronal functions. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

BIO 3442. Neurobiology Laboratory. (0-4) 2 Credit Hours.

Prerequisite: Completion of or concurrent enrollment in BIO 3433. A laboratory course emphasizing principles presented in BIO 3433. Generally offered: Fall, Spring. Course Fees: IUB1 \$10; L001 \$30; LRS1 \$10; STSI \$10.

BIO 3513. Biochemistry. (3-0) 3 Credit Hours.

Prerequisites: CHE 3643 or CHE 3673; BIO 2313 is highly 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.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

BIO 3522. Biochemistry Laboratory. (1-4) 2 Credit Hours.

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 an online component. Generally offered: Fall, Spring, Summer. Course Fees: IUB1 \$10; L001 \$30; LRS1 \$10; STSI \$10.

BIO 3613. The Biology of Aging. (3-0) 3 Credit Hours.

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. Course Fees: LRS1 \$15; STSI \$15.

BIO 3623. Neuropsychopharmacology. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414; 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. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

BIO 3663. Human Embryology. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

BIO 3713. Microbiology. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414. 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. Credit cannot be earned for both BIO 3713 and ES 3103.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

BIO 3722. Microbiology Laboratory. (0-6) 2 Credit Hours.

Prerequisites: BIO 1414, 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. Credit cannot be earned for both BIO 3722 and ES 3112.) Generally offered: Fall, Spring, Summer. Course Fees: IUB1 \$10; L001 \$30; LRS1 \$10; STSI \$10.

BIO 3743. Bacteriology. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

BIO 3813. Cell Biology. (3-0) 3 Credit Hours.

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. (Credit cannot be earned for both BIO 3813 and BME 3114.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

BIO 3822. Cell Biology Laboratory. (1-4) 2 Credit Hours.

Prerequisites: BIO 2313 and either BIO 2322 or CHE 1131, 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 an online component. (Credit cannot be earned for both BIO 3822 and BME 3114.) Generally offered: Fall, Spring, Summer. Course Fees: IUB1 \$10; L001 \$30; LRS1 \$10; STSI \$10.

BIO 3913. Molecular Biology. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313; BIO 3513 is recommended. A study of nucleotides, DNA, replication, recombination, RNA, transcription, genetic code, translation, genomes, and chromosomes. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

BIO 3933. Principles of Cancer Biology. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414; BIO 3813 is recommended. A study of the underlying molecular and cellular biology involved in carcinogenesis, the roles of oncogenes and tumor suppressor genes in cancer development and progression, and modern technologies in cancer screening, diagnosis, treatments and prevention. Upon completion of the class, students should have gained a basic understanding of the mechanisms by which tumors arise and progress to cancer, potential therapeutic targets in cancer treatments, and an individual's actions that are expected to decrease the chances of cancer development. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

BIO 4033. Conservation Biology. (3-0) 3 Credit Hours.

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. (Same as ES 4213. Credit cannot be earned for both BIO 4033 and ES 4213.) Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

BIO 4043. Desert Biology. (2-3) 3 Credit Hours.

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. Generally offered: Summer. Course Fees: LRS1 \$15; STSI \$15.

BIO 4053. Wildlife Biology. (3-0) 3 Credit Hours.

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. (Same as ES 4243. Credit cannot be earned for both BIO 4053 and ES 4243.) Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

BIO 4063. Ornithology. (3-0) 3 Credit Hours.

Prerequisite: 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. (Same as ES 3163. Credit cannot be earned for both BIO 4063 and ES 3163.) Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

BIO 4143. Developmental Biology. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313; BIO 3813 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.) Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

BIO 4233. Field Biology. (3-0) 3 Credit Hours.

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. (Same as ES 4113. Credit cannot be earned for both BIO 4233 and ES 4113.) Generally offered: Summer. Course Fees: LRS1 \$15; STSI \$15.

BIO 4241. Field Biology Laboratory. (0-3) 1 Credit Hour.

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. (Same as ES 4111. Credit cannot be earned for both BIO 4241 and ES 4111.) Generally offered: Summer. Course Fees: L001 \$30; LRS1 \$5; STSI \$5.

BIO 4453. Endocrinology. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414. 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). Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

BIO 4473. Advanced Clinical Medicine and Pathology. (3-0) 3 Credit Hours.

Prerequisite: BIO 3013. Advanced concepts of human disease, diagnosis, and underlying pathology. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

BIO 4483. Medical Mycology. (3-0) 3 Credit Hours.

Prerequisites: BIO 3713 and BIO 3722. Comprehensive study of causative agents, pathogenesis, and treatment of human fungal diseases. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

BIO 4583. The Computational Brain. (3-0) 3 Credit Hours.

Prerequisite: BIO 3433. Principles of cellular neurophysiology and neuroanatomy are used to explore the computational operations performed by neurons and networks of neurons. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

BIO 4643. Medicinal Plants. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313; BIO 3513 is recommended. Ethnobotanical, biochemical and pharmacological aspects of some of our most important plant-derived drugs. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

BIO 4723. Virology. (3-0) 3 Credit Hours.

Prerequisites: BIO 2313 and BIO 3513. 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. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

BIO 4743. Immunology. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313. 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. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

BIO 4752. Immunology Laboratory. (0-4) 2 Credit Hours.

Prerequisites: BIO 2313 and BIO 2322, and completion or concurrent enrollment in BIO 4743. Laboratory applications of principles presented in BIO 4743. (Formerly BIO 4751. Credit cannot be earned for both BIO 4751 and BIO 4752.) Generally offered: Fall, Spring, Summer. Course Fees: IUB1 \$10; L001 \$30; LRS1 \$10; STSI \$10.

BIO 4763. Parasitology. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313. BIO 3713 is strongly recommended. This course is focused on eukaryotic parasites of medical or veterinary importance: their life cycles, epidemiology, control, and the diseases and pathology they cause. Evolutionary aspects of host-parasite interactions, the diversity of parasite biology, and the interrelationships between parasitology, vector biology, and public health will be emphasized. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

BIO 4783. Microbial Genetics and Physiology. (3-0) 3 Credit Hours.

Prerequisite: BIO 2313 and BIO 3713. A study of the genetic, physiological and molecular processes that influence gene transfer, pathogenesis, and drug resistance related to bacteria, fungi, and viruses. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

BIO 4813. Brain and Behavior. (3-0) 3 Credit Hours.

Prerequisite: BIO 1414. This course explores the brain basis of behavior, with a focus on understanding the neurophysiological, neurochemical and neuroanatomical underpinnings for a variety of simple and complex behaviors. Students will explore topics such as sensation and perception, pain, movement, sleep, biological rhythms, emotions, addiction, learning and memory, and neurodevelopment. The topics are grounded with examples of typical human behavior and disorders, such as Parkinson's disease, Autism, Schizophrenia and psychopathology. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

BIO 4823. Cognitive Neuroscience. (3-0) 3 Credit Hours.

Prerequisite: BIO 3433 or BIO 3813 or PSY 4183 or consent of instructor. The biological basis of cognition, including perception, attention, learning, memory, emotion, language, and executive function. The course introduces students to the use of human neuroimaging experiments and clinical population, as well as research with other species, to study the brain basis of complex behavior and cognitive disorders, such as memory loss, language impairment and developmental disorders. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

BIO 4841. Seminar in Medical Sciences. (1-0) 1 Credit Hour.

Prerequisite: This course is only open to seniors participating in the Biology Pre-Medical Sciences Concentration. Students will learn how to interpret the scientific literature and to organize and present scientific research findings as reported in the current literature. The grade report for this course is either "CR" (satisfactory performance) or "NC" (unsatisfactory performance). Generally offered: Spring.

BIO 4842. Clinical Gross Anatomy. (0-6) 2 Credit Hours.

Prerequisite: This course is only open to students participating in the Biology Pre-Medical Sciences Concentration. It will examine the anatomical/functional relationship of the human body, with special emphasis given to the different professional tracks (medical, pharmacy, dental and veterinarian). The course will encompass student presentations, discussion groups, online research, and demonstrations with models and use of the synthetic cadaver, in addition to lectures and dissection. Imaging techniques including CT scans, MRI, and x-ray radiography will be used to introduce the student to the clinical perspective, as well as a review of the histology of tissues both in health and diseased conditions. Generally offered: Fall. Course Fees: IUB1 \$10; L001 \$30; LRS1 \$10; STSI \$10.

BIO 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisite: Permission in writing (form available) from the instructor, an undergraduate academic 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 no more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Only 6 semester credit hours of BIO 3043, BIO 4911-3, BIO 4923 and BIO 4993, in any combination, can be taken as BIO electives. Additional research hours of these courses (excluding Independent Study) may be taken as free electives, for a maximum of 12 research hours being applied to the bachelor's degree. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$5; STSI \$5.

BIO 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisite: Permission in writing (form available) from the instructor, an undergraduate academic 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 no more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Only 6 semester credit hours of BIO 3043, BIO 4911-3, BIO 4923 and BIO 4993, in any combination, can be taken as BIO electives. Additional research hours of these courses (excluding Independent Study) may be taken as free electives, for a maximum of 12 research hours being applied to the bachelor's degree. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$10; STSI \$10.

BIO 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisite: Permission in writing (form available) from the instructor, an undergraduate academic 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 no more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Only 6 semester credit hours of BIO 3043, BIO 4911-3, BIO 4923 and BIO 4993, in any combination, can be taken as BIO electives. Additional research hours of these courses (excluding Independent Study) may be taken as free electives, for a maximum of 12 research hours being applied to the bachelor's degree. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

BIO 4923. Laboratory Research: Biology Concentrations. (0-0) 3 Credit Hours.

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 3043, BIO 4911-3, BIO 4923 and BIO 4993, in any combination, can be taken as BIO electives. Additional research hours of these courses (excluding Independent Study) may be taken as free electives, for a maximum of 12 research hours being applied to the bachelor's degree. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

BIO 4951. Special Studies in Biology. (1-0) 1 Credit Hour.

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. Course Fees: LRS1 \$5; STFB \$40; STSI \$5.

BIO 4953. Special Studies in Biology. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

BIO 4981. Senior Seminar in Microbiology and Immunology. (1-0) 1 Credit Hour.

Prerequisite: Senior status, a minimum of 90 semester credit hours. This course is only open to seniors in the Microbiology and Immunology degree program. Students will learn how to interpret the scientific literature and to organize and present scientific research findings as reported in the current literature. May be repeated for credit. The grade report for the course is either "CR" (satisfactory performance) or "NC" (unsatisfactory performance). Generally offered: Fall, Spring. Course Fees: LRS1 \$5; STSI \$5.

BIO 4993. Honors Research. (0-0) 3 Credit Hours.

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 4993, in any combination, can be taken as BIO electives. Additional research hours of these courses (excluding Independent Study) may be taken as free electives, for a maximum of 12 research hours being applied to the bachelor's degree. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

Biomedical Engineering (BME)

Biomedical Engineering (BME) Courses

BME 1002. Introduction to Biomedical Engineering. (2-0) 2 Credit Hours.

Prerequisites: A grade of "C-" or better in BIO 1404 and MAT 1214. 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. Generally offered: Spring. Course Fees: LRE1 \$20; STSE \$20.

BME 2103. Physiology for Biomedical Engineering. (3-1) 3 Credit Hours.

Prerequisites: Major in Biomedical Engineering and a grade of "C-" or better in BIO 1404 and MAT 1214. 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. Generally offered: Fall. Course Fees: LRE1 \$20; STSE \$30.

BME 2203. Biomechanics I. (3-1) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in EGR 2323 and PHY 1963. Corequisite: BME 3211. Introduction to the fundamental engineering mechanics with focus on the human body. This course includes a 3 hour lecture and a 1 hour recitation. Generally offered: Spring. Course Fees: LRE1 \$20; STSE \$30.

BME 3003. Biomaterials I. (3-1) 3 Credit Hours.

Prerequisite: A grade of "C-" or better, or concurrent enrollment, in BME 1002. Introduction to the fundamental science of natural and synthetic biomaterials used for repairing human tissues and organs. Topics include crystal structures, phase diagrams, and properties of materials. This course includes a 3-hour lecture and a 1-hour recitation. (Formerly BME 2403. Same as CME 3003. Credit cannot be earned for more than one of the following: BME 3003, BME 2403, or CME 3003.) Course Fees: LRE1 \$20; STSE \$30.

BME 3013. Clinical Internship in Biomedical Engineering. (0-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 3003 and BME 3114. This course will introduce students to the clinical environment, interacting with clinicians on current clinical problems and engineering approaches. Generally offered: Summer. Course Fees: LRE1 \$20; STSE \$30.

BME 3023. Biomedical Engineering Technology and Product Development. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in BME 3303. This course will introduce students to current biomedical technologies and product development. (Formerly BME 3022. Credit cannot be earned for both BME 3023 and BME 3022.) Course Fees: LRE1 \$20; STSE \$30.

BME 3033. Biomedical Engineering Internship. (0-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in BME 3023. Internship with a biomedical industry. May be repeated for credit but no more than 3 semester credit hours will apply to a bachelor's degree. Course Fees: LRE1 \$20; STSE \$30.

BME 3041. Biomedical Engineering Research. (0-0) 1 Credit Hour.
Prerequisite: Consent of instructor. Advanced laboratory practice and introduction to biomedical engineering research. This course may be counted as one of the courses to satisfy one of the BME tracks. May be repeated for credit but no more than 3 semester credit hours will apply towards a bachelor's degree in Biomedical Engineering. Course Fees: LRE1 \$20; STSE \$10.

BME 3042. Biomedical Engineering Research. (0-0) 2 Credit Hours.
Prerequisite: Consent of instructor. Advanced laboratory practice and introduction to biomedical engineering research. This course may be counted as one of the courses to satisfy one of the BME tracks. May be repeated for credit but no more than 3 semester credit hours will apply towards a bachelor's degree in Biomedical Engineering. Course Fees: LRE1 \$20; STSE \$20.

BME 3043. Biomedical Engineering Research. (0-0) 3 Credit Hours.
Prerequisite: Consent of instructor. Advanced laboratory practice and introduction to biomedical engineering research. This course may be counted as one of the courses to satisfy one of the BME tracks. May be repeated for credit but no more than 3 semester credit hours will apply towards a bachelor's degree in Biomedical Engineering. Course Fees: LRE1 \$20; STSE \$30.

BME 3114. Cellular Biology for Biomedical Engineering. (3-4) 4 Credit Hours.
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. (Formerly BME 2114. Credit cannot be earned for both BME 3114 and BME 2114. Credit cannot be earned for both BME 3114 and BIO 3813/BIO 3822.) Course Fees: L001 \$30; LRE1 \$20; STSE \$40.

BME 3203. Biomechanics II: Cardiovascular. (3-0) 3 Credit Hours.
Prerequisites: A grade of "C-" or better in BME 2203 and BME 3211. Continuation of fundamental biomechanics to include elasticity, viscoelasticity, deformation, stress analysis, blood flow in the systemic and pulmonary circulation, and fluid-structure interaction. Generally offered: Fall. Course Fees: LRE1 \$20; STSE \$30.

BME 3211. Biomedical Engineering Laboratory I. (0-4) 1 Credit Hour.
Prerequisites: A grade of "C-" or better in BME 1002 and STA 1403. Corequisite: BME 2203. 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. (Formerly BME 2211. Credit cannot be earned for both BME 3211 and BME 2211.) Course Fees: L001 \$30; LRE1 \$20; STSE \$10.

BME 3303. Bioinstrumentation. (3-1) 3 Credit Hours.
Prerequisite: A grade of "C-" or better in BME 2203. Corequisite: 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. Generally offered: Fall. Course Fees: LRE1 \$20; STSE \$30.

BME 3311. Biomedical Engineering Laboratory II. (0-4) 1 Credit Hour.
Corequisite: 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. Generally offered: Fall. Course Fees: LRE1 \$20; STSE \$10.

BME 3403. Biomaterials II. (1-5) 3 Credit Hours.
Prerequisite: A grade of "C-" or better in BME 3003. This course will emphasize materials used in medical applications, including modifications and characterization techniques. This course includes a 1 hour lecture and a 5 hour laboratory. Course Fees: LRE1 \$20; STSE \$30.

BME 3413. Biocompatibility of Materials: Tissue-Biomaterial Interaction. (3-0) 3 Credit Hours.
Prerequisites: A grade of "C-" or better in BME 3003 and BME 3114. This course is an introduction to the interactions of cells and tissues with biomaterials. Blood composition and blood-material interactions, responses of the inflammatory and immune systems to biomaterials, the process of wound healing, protein structure and interactions with material surfaces, and the mechanisms of cell interactions with extracellular matrix components as well as cell/tissue responses to implant materials are reviewed in detail. Case studies of cardiovascular and orthopaedic implants are discussed to illustrate that judicious selection of materials is a key aspect of implant design and a crucial choice for the success of various biomedical applications (e.g., in tissue engineering and biotechnology) which require regeneration of tissues. Generally offered: Fall. Course Fees: LRE1 \$20; STSE \$30.

BME 3503. Nanomaterials and Nanobiotechnology. (3-0) 3 Credit Hours.
Prerequisite: A grade of "C-" or better in BME 3003. This course will introduce an overview of nanomaterials and nanotechnology development. Topics may include biocompatible nanomaterials, microfabrication, microfluidics, lab-on-a-chip, and applications in biomedical engineering. (Formerly titled "Fundamentals of Nanobiotechnology.") Generally offered: Spring. Course Fees: LRE1 \$20; STSE \$30.

BME 3703. Biotransport Phenomena. (3-1) 3 Credit Hours.
Prerequisite: A grade of "C-" or better in BME 3303. Corequisite: 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. Generally offered: Spring. Course Fees: LRE1 \$20; STSE \$30.

BME 3711. Biomedical Engineering Laboratory III. (0-4) 1 Credit Hour.
Corequisite: 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. Generally offered: Spring. Course Fees: L001 \$30; LRE1 \$20; STSE \$10.

BME 4203. Biomechanics III. (3-0) 3 Credit Hours.
Prerequisite: A grade of "C-" or better in BME 2203. 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. Course Fees: LRE1 \$20; STSE \$30.

BME 4213. Tissue Mechanics. (3-0) 3 Credit Hours.
Prerequisite: A grade of "C-" or better in BME 2203. Topics may include biomechanics characterization, modeling, and properties of regenerating tissues ranging from bone, cartilage, tendons, ligaments, skin, adipose tissue, nerves, bladder, eye, and pulmonary and cardiovascular tissues. Course Fees: LRE1 \$20; STSE \$30.

BME 4293. Topics in Biomechanics. (3-0) 3 Credit Hours.

Prerequisites: Senior status with a major in Biomedical Engineering and a grade of "C-" or better in BME 2203. 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. Course Fees: LRE1 \$20; STSE \$30.

BME 4403. Molecular Techniques for Cell-Biomaterials Interactions. (2-4) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in BME 3114. 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. Course Fees: LRE1 \$20; STSE \$30.

BME 4423. Tissue Engineering. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 3003 and BME 3114. This course is an introduction to the current status of practice and advances in tissue engineering. Tissue engineering is the biomedical engineering discipline that applies science and technology to develop replacements for damaged and/or diseased tissues of the body. The course focuses on fundamental aspects of new tissue formation, specifically, cells, biomaterials, biochemical cues and biophysical stimuli, which are part of the physiological milieu. Applications of the latest advances in current knowledge of the aforementioned aspects in designing and formulating cell-containing constructs composed of natural and/or synthetic biomaterial scaffolds is necessary for successful outcomes in tissue engineering. Examples of applications in bone, cartilage, skin, and vascular tissues are reviewed in detail. Strategies which are used to address current challenges, pursue emerging opportunities and explore new scientific directions are discussed. Course Fees: LRE1 \$20; STSE \$30.

BME 4483. Topics in Biomaterials. (3-0) 3 Credit Hours.

Prerequisites: Senior status with a major in Biomedical Engineering and a grade of "C-" or better in BME 3003. 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. Course Fees: LRE1 \$20; STSE \$30.

BME 4493. Topics in Tissue Engineering. (3-0) 3 Credit Hours.

Prerequisites: Senior status with a major in Biomedical Engineering and a grade of "C-" or better in BME 3003 and BME 3114. 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. Course Fees: LRE1 \$20; STSE \$30.

BME 4503. Biosensors. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in BME 3303. Basics to biological detection and in-depth view of device design and performance analyses. Topics may include optical, electrochemical, acoustic, piezoelectric, and nanobiosensors. Course Fees: LRE1 \$20; STSE \$30.

BME 4603. Biophotonics. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in EGR 2323. 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. Generally offered: Fall. Course Fees: LRE1 \$20; STSE \$30.

BME 4613. Biomedical Imaging. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in EGR 2323. 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. Course Fees: LRE1 \$20; STSE \$30.

BME 4623. Biomedical Optics. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in EGR 2323. This course will introduce the fundamental principles of modern and classical optics and their applications for biomedical research. State-of-the-art topics on cutting-edge research in the area of optics and lasers in medicine and biology will be covered. Course Fees: LRE1 \$20; STSE \$30.

BME 4703. Biomedical Engineering Thermodynamics. (3-1) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in BME 3703. This course 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. Course Fees: LRE1 \$20; STSE \$30.

BME 4713. Cellular Engineering. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in BME 3114 and EGR 2323. 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. Course Fees: LRE1 \$20; STSE \$30.

BME 4793. Topics in Cellular Engineering. (3-0) 3 Credit Hours.

Prerequisites: Senior status with a major in Biomedical Engineering and a grade of "C-" or better in BME 3114 and EGR 2323. 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. Course Fees: LRE1 \$20; STSE \$30.

BME 4803. Fundamental Computational Bioengineering. (3-0) 3 Credit Hours.

Prerequisites: Major in Biomedical Engineering and a grade of "C-" or better in BME 3303. This course will include fundamental knowledge and skills of mathematical modeling, computer simulation and visualization, with applications in biomedical engineering. Course Fees: LRE1 \$20; STSE \$30.

BME 4903. Senior BME Design I. (3-0) 3 Credit Hours.

Prerequisites: Senior status with a major in Biomedical Engineering and a grade of "C-" or better in BME 3023 and BME 3703. Development of project proposals and presentation of conceptual designs. Industrial collaboration and/or faculty sponsorship of these projects is encouraged. Course Fees: LRE1 \$20; STSE \$30.

BME 4913. Senior BME Design II. (3-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

Business Law (BLW)

Note: Beginning Fall 2019, course fees will be replaced with differential tuition at a rate of \$42 per semester credit hour for upper-division College of Business courses.

Business Law (BLW) Courses

BLW 3013. Business Law. (3-0) 3 Credit Hours.

This course provides a practical understanding of the legal aspects of managing and/or owning a business. Topics may include how to legally structure your business, licenses and permits, selecting insurance, hiring and terminating employees, independent contractors, negotiating leases, contracts, raising money and buying a business. (Credit cannot be earned for both BLW 3013 and BLW 3033.) Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

BLW 3023. Business Organizations and Commercial Law. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

BLW 3033. Business Law for Accountants. (3-0) 3 Credit Hours.

Prerequisite: Declared accounting major; finance major with a 3.3 minimum GPA; or consent of Department Chair. Students will study legal topics required for the accounting profession. These topics may include legal duties and responsibilities, agency, common law contracts, UCC contracts and leases, debtor-creditor relationships, government regulation of business, business formation and governance, and other issues in law and regulations that affect accounting. Accounting students cannot take BLW 3013 or BLW 3023 as a substitution for BLW 3033. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

BLW 3523. Real Estate Law. (3-0) 3 Credit Hours.

Topics may include the 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; and negotiations. (Same as RFD 3523. Credit cannot be earned for both RFD 3523 and BLW 3523.) Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

Chemical Engineering (CME)

Chemical Engineering (CME) Courses

CME 1201. Introduction to Chemical Engineering. (1-0) 1 Credit Hour.

A broad survey of the practice of chemical engineering, intended to expose students to specialized areas of chemical engineering and potential career paths (e.g., bioengineering, environmental engineering, materials engineering, and petroleum/energy engineering) through discussions and guest lectures. Students will review ethics and safety, and practice Technical Communication through oral presentations and written assignments. Course Fees: LRE1 \$20; STSE \$10.

CME 2103. Chemical Process Principles. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in CHE 1113, CME 1201, and MAT 1214. Students will learn basic principles of chemical engineering, including materials and energy balances. Course Fees: LRE1 \$20; STSE \$30.

CME 2203. Computational Methods in Chemical Engineering. (3-1) 3 Credit Hours.

Prerequisite: Completion of or concurrent enrollment in EGR 2323. Introduction to numerical techniques and computational tools essential for chemical engineering, including the use of data acquisition and processing, engineering drawing, numerical modeling of linear and differential equations, and presentation tools. Students will learn to use computer software to aid in their analysis (e.g., Matlab, Mathematica). One hour of problem solving recitation per week. Course Fees: LRE1 \$20; STSE \$30.

CME 3003. Introduction to Materials Science and Engineering. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CME 1201. Foundation for understanding the structure and properties of engineering materials such as ceramics, glass, polymers, composites, biomaterials, metals and alloys. An integrated introduction of materials' microstructure, thermodynamic process, and corresponding mechanical, electrical, optical, and magnetic properties. (Same as BME 3003. Credit cannot be earned for both CME 3103 and BME 3003.) Course Fees: LRE1 \$20; STSE \$30.

CME 3103. Thermodynamics I. (3-1) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in CHE 3804 and CME 2103. Heat, work, equations of state, thermodynamic systems, control volume, first and second laws of thermodynamics, applications of the laws of thermodynamics, reversible and irreversible processes, introduction to basic thermodynamic cycles, vapor-liquid equilibria, and non-ideal solutions. One hour of problem solving recitation per week. (Credit cannot be earned for both CME 3103 and ME 3293.) Course Fees: LRE1 \$20; STSE \$30.

CME 3303. Transport Phenomena. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CME 2103. Fundamental principles of momentum and energy transport in various processes with exploration of laminar and turbulent flow, and heat exchange. Course Fees: LRE1 \$20; STSE \$30.

CME 3403. Unit Operations—Transport Processes. (3-1) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CME 3303. Fluid mechanics, flow of compressible and incompressible fluids, fluid transport and metering, fluid agitation and mixing; heat transfer by conduction and convection, phase changes of fluids, and heat exchangers; types of equipment used and practical chemical engineering applications. One hour of problem solving recitation per week. Course Fees: LRE1 \$20; STSE \$30.

CME 3433. Crystal Chemistry of Structure and Properties. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CME 3003. Principles of crystal chemistry applied to the relationships of crystallographic structures, compositions, and engineering properties of materials. Course Fees: LRE1 \$20; STSE \$30.

CME 3503. Kinetics and Reactor Design. (3-1) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in CHE 3804 and CME 3303. Fundamental principles to the design and analysis of batch, continuously stirred tank, and fixed bed chemical reactors; steady and unsteady state operations; effects of pressure and temperature; heterogeneous catalysis; analysis of transport processes in catalysis; special topics may include enzyme catalysis; fluid bed reactors; membrane reactors; and microscale reactors. One hour of problem solving recitation per week. Course Fees: LRE1 \$20; STSE \$30.

CME 3601. Chemical Engineering Laboratory I. (0-4) 1 Credit Hour.

Prerequisite: Completion of or concurrent enrollment in CME 3503. Basic principles and statistical design of experiments using software tools; Experiments demonstrating key unit operations with emphasis on fluid flow and heat transfer. Written and oral reports required. Course Fees: LRE1 \$20; STSE \$10.

CME 3703. Transport Phenomena II. (3-0) 3 Credit Hours.

Prerequisite: CME 3303 or instructor approval. Fundamental principles of momentum and mass transport in various processes with exploration of laminar and turbulent flow, and mass diffusion. Course Fees: LRE1 \$20; STSE \$30.

CME 4001. Chemical Process Safety and Risk Management. (1-0) 1 Credit Hour.

Application of chemical process safety, risk assessment and management, including hazardous waste disposal and remediation. Course Fees: LRE1 \$20; STSE \$10.

CME 4103. Process Dynamics and Control. (3-1) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CME 3403. Modeling of dynamic processes; Response of uncontrolled systems; Transfer functions; Response and stability of controlled systems; frequency response; Design of feedback controllers; Cascade, feed forward and multivariable control systems; Process Instrumentation; Use of simulators to design feedback controllers. One hour of problem solving recitation per week. Course Fees: LRE1 \$20; STSE \$30.

CME 4163. Thermodynamics II. (3-2) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in CME 3103 and CME 3403. Mass transfer applications with a focus on separations, including equilibrium staged operations, distillation, extraction, gas absorption, membrane and adsorption processes. (Formerly titled Chemical Engineering Design Fundamentals.) Course Fees: LRE1 \$20; STSE \$30.

CME 4201. Chemical Engineering Laboratory II. (0-4) 1 Credit Hour.

Prerequisite: Completion of or concurrent enrollment in CME 4103. Experiments demonstrating key unit operations with emphasis on mass transfer with and without reactions; hands on experience with process control. Written and oral reports required. Course Fees: LRE1 \$20; STSE \$10.

CME 4264. Product and Process Design. (2-6) 4 Credit Hours.

Prerequisite: A grade of "C-" or better in CME 4163. Application of design and economic principles to chemical engineering systems; analysis of costs of equipment, feedstocks, utilities, and risk assessment; optimization of equipment design using simulation tools. Strategic application of technical and economic constraints in the design of a chemical processing plant including most aspects of typical industrial design; integration of process safety and environmental impact factors. Students work in small groups and submit a plant design project report. Course Fees: LRE1 \$20; STSE \$40.

CME 4423. Selected Topics in Petroleum/Energy Engineering I. (3-0) 3 Credit Hours.

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. May be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of concentration, will apply to a bachelor's degree. Course Fees: LRE1 \$20; STSE \$30.

CME 4513. Selected Topics in Bioengineering. (3-0) 3 Credit Hours.

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. May be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of concentration, will apply to a bachelor's degree. Course Fees: LRE1 \$20; STSE \$30.

CME 4523. Selected Topics in Petroleum/Energy Engineering II. (3-0) 3 Credit Hours.

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. May be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of concentration, will apply to a bachelor's degree. Course Fees: LRE1 \$20; STSE \$30.

CME 4533. Selected Topics in Materials Science and Engineering. (3-0) 3 Credit Hours.

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. May be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of concentration, will apply to a bachelor's degree. Course Fees: LRE1 \$20; STSE \$30.

CME 4543. Selected Topics in Environmental Engineering. (3-0) 3 Credit Hours.

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. May be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of concentration, will apply to a bachelor's degree. Course Fees: LRE1 \$20; STSE \$30.

CME 4553. Selected Topics in Business and Technology Management. (3-0) 3 Credit Hours.

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. May be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of concentration, will apply to a bachelor's degree. Course Fees: LRE1 \$20; STSE \$30.

CME 4601. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Permission in writing (Independent Study Form available online) from the instructor, the student's advisor, and the Department. 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 the concentration, will apply to a bachelor's degree. Course Fees: LRE1 \$20; STSE \$10.

CME 4602. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Permission in writing (Independent Study Form available online) from the instructor, the student's advisor, and the Department. 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 the concentration, will apply to a bachelor's degree. Course Fees: LRE1 \$20; STSE \$20.

CME 4603. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Permission in writing (Independent Study Form available online) from the instructor, the student's advisor, and the Department. 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 the concentration, will apply to a bachelor's degree. Course Fees: LRE1 \$20; STSE \$30.

Chemistry (CHE)

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.

Chemistry (CHE) Courses

CHE 1004. Chemistry for Allied Health Sciences. (3-3) 4 Credit Hours. (TCCN = CHEM 1405)

Introduction to atomic structure, chemical bonding, stoichiometry, states of matter, inorganic chemical reactions, and acids and bases. The course has a laboratory component to introduce general chemical laboratory techniques, principles, and methods to reinforce lecture topics. For majors in occupational therapy, prenursing, and dental hygiene. May not be applied to a major or minor in chemistry, biology, or clinical laboratory sciences. (Formerly CHE 1003 and CHE 1011. Credit cannot be earned for both CHE 1003 and CHE 1004.) Course Fees: IUC1 \$15; L001 \$30; LRS1 \$20; STSI \$20.

CHE 1014. Elementary Organic and Biochemistry. (3-3) 4 Credit Hours. (TCCN = CHEM 1407)

Prerequisite: A grade of "C-" or better in CHE 1004 (or CHE 1003 in previous catalogs). 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 or minor in chemistry. Laboratory examination of the properties of some simple organic and biological chemicals; topics include solubility, crystallization, organic reactions, titration, enzyme action, sugars, and vitamins which will directly reinforce lecture topics. (Formerly CHE 1013 and CHE 1203. Credit can be earned for only ONE of the following: CHE 1013 or CHE 1014 or CHE 1203.) Course Fees: IUC1 \$15; L001 \$30; LRS1 \$20; STSI \$20.

CHE 1073. Basic Chemistry. (3-0) 3 Credit Hours.

A preparatory class for CHE 1103. This course focuses on traditionally difficult concepts encountered in CHE 1103. Topics include but are not limited to: dimensional analysis, significant figures, inorganic nomenclature, and qualitative and quantitative analyses of basic chemical reactions. May not be applied to a B.S. or B.A. in Chemistry. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

CHE 1083. Introduction to the Molecular Structure of Matter. (3-0) 3 Credit Hours.

This course is an introduction to the structure of matter, with focus on the molecules of carbon that comprise living systems. Topics include covalent and ionic bonding, molecular structure, shape, and stability, isomers, organic functional groups and charge distribution in molecules, and bonding in solids. May be applied toward the Core Curriculum requirement in Life and Physical Sciences. (Same as CHE 1004. Credit cannot be earned for both CHE 1004 and CHE 1083.) Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

CHE 1093. Introduction to Molecular Transformations. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CHE 1083 and in MAT 1073 or higher. This course is an introduction to the chemical reactions of matter, with focus on basic organic reactions that take place in living systems. Topics include classification of reactions, stoichiometry, reaction energetics, chemical equilibrium, acid-base chemistry, complex equilibria and reaction kinetics. May be applied toward the Core Curriculum requirement in Life and Physical Sciences. (Same as CHE 1014. Credit cannot be earned for both CHE 1014 and CHE 1093.) Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

CHE 1103. General Chemistry I. (3-0) 3 Credit Hours. (TCCN = CHEM 1311)

Prerequisite: Completion of MAT 1073 with a grade of "C-" or placement into MAT 1093 through the Math Placement Examination or a grade of "C-" or better in CHE 1073. Concurrent enrollment in CHE 1121 is recommended. 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. Credit cannot be earned for both CHE 1103 and CHE 1143. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

CHE 1113. General Chemistry II. (3-0) 3 Credit Hours. (TCCN = CHEM 1312)

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. Credit cannot be earned for more than one of the following: CHE 1113, CHE 1153, or CHE 1303. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

CHE 1121. General Chemistry I Laboratory. (1-4) 1 Credit Hour. (TCCN = CHEM 1111)

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.) Generally offered: Fall, Spring, Summer. Course Fees: IUC1 \$15; L001 \$30; LRS1 \$5; STSI \$5.

CHE 1131. General Chemistry II Laboratory. (1-4) 1 Credit Hour. (TCCN = CHEM 1112)

Prerequisites: A grade of "C-" or better in CHE 1103 and 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.) Generally offered: Fall, Spring, Summer. Course Fees: IUC1 \$15; L001 \$30; LRS1 \$5; STSI \$5.

CHE 1143. Principles of Chemistry I. (3-0) 3 Credit Hours.

Prerequisites: A grade of "B-" or better in CHE 1073 and a grade of "B-" or better in MAT 1073, placement into MAT 1093 through the Math Placement Examination 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. (Same as CHE 1103. Credit cannot be earned for both CHE 1103 and CHE 1143.) Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

CHE 1153. Principles of Chemistry II. (3-0) 3 Credit Hours.

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. (Same as CHE 1113. Credit cannot be earned for both CHE 1113 and CHE 1153.) Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

CHE 2603. Organic Chemistry I. (3-0) 3 Credit Hours. (TCCN = CHEM 2323)

Prerequisite: A grade of "C-" or better in CHE 1113 (or CHE 1153). A study of the fundamentals of organic structure, reaction mechanisms, synthesis and spectroscopy. Primarily for majors other than chemistry and biochemistry. Discussion and problems amplify and clarify the course topics. (Same as CHE 2703. 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, CHE 2604, or CHE 2703). Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

CHE 2612. Organic Chemistry I Laboratory. (1-4) 2 Credit Hours.

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.) Generally offered: Fall, Spring, Summer. Course Fees: IUC1 \$15; L001 \$30; LRS1 \$10; STSI \$10.

CHE 2703. Organic Chemistry I for Majors. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CHE 1113 (or CHE 1153). An in-depth study of the organic structure, reaction mechanisms, synthesis and spectroscopy. Primarily for chemistry and biochemistry majors. Discussion and practice of problems amplifying and clarifying the course. (Same as CHE 2603. 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, CHE 2604, or CHE 2703.) Course Fees: LRS1 \$15; STSI \$15.

CHE 2803. Quantitative Topics for Chemists. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in 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.) Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

CHE 3214. Analytical Chemistry. (2-5) 4 Credit Hours.

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.) Generally offered: Fall, Spring. Course Fees: IUC1 \$15; L001 \$30; LRS1 \$20; STSI \$20.

CHE 3464. Descriptive Inorganic Chemistry. (3-3) 4 Credit Hours.

Prerequisites: A grade of "C-" or better in CHE 1113 (or CHE 1153) and CHE 1131; concurrent enrollment in 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.) Generally offered: Fall, Spring. Course Fees: IUC1 \$15; L001 \$30; LRS1 \$20; STSI \$20.

CHE 3643. Organic Chemistry II. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CHE 2603 (or CHE 2703). Continuing study of fundamentals of organic structure, reaction mechanisms, synthesis and spectroscopy. A continuation of CHE 2603. Primarily for majors other than chemistry and biochemistry. (Same as CHE 3703. Formerly CHE 2303 and CHE 2623. Credit cannot be earned for more than one of the following: CHE 2303, CHE 2623, CHE 3703, or CHE 3643.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

CHE 3652. Organic Chemistry II Laboratory. (1-4) 2 Credit Hours.

Prerequisites: Grades of "C-" or better in CHE 2603 (or CHE 2703) 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.) Generally offered: Fall, Spring, Summer. Course Fees: IUC1 \$15; L001 \$30; LRS1 \$10; STSI \$10.

CHE 3673. Organic Chemistry II with Biological Applications. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CHE 2603. 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.) Course Fees: LRS1 \$15; STSI \$15.

CHE 3703. Organic Chemistry II for Majors. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CHE 2703 (or CHE 2603). Continuing study of fundamentals of organic structure, reaction mechanisms, synthesis and spectroscopy. A continuation of CHE 2703. Primarily for chemistry and biochemistry majors. (Same as CHE 3643. Formerly CHE 2303 and CHE 2623. Credit cannot be earned for more than one of the following: CHE 2303, CHE 2623, CHE 3703, or CHE 3643.) Course Fees: LRS1 \$15; STSI \$15.

CHE 3804. Physical Chemistry I and Laboratory. (3-3) 4 Credit Hours.

Prerequisites: A grade of "C-" or better in CHE 1113 (or CHE 1153), CHE 1131, CHE 2803, 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.") Generally offered: Fall. Course Fees: IUC1 \$15; L001 \$30; LRS1 \$20; STSI \$20.

CHE 3824. Physical Chemistry II and Laboratory. (3-3) 4 Credit Hours.

Prerequisites: A grade of "C-" or better in 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.") Generally offered: Spring. Course Fees: IUC1 \$15; L001 \$30; LRS1 \$20; STSI \$20.

CHE 3854. Basic Biophysical Chemistry Lecture/Lab. (3-3) 4 Credit Hours.

Prerequisites: A grade 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. This course cannot be used as an upper-division chemistry elective by students pursuing a B.S. in Chemistry. Generally offered: Spring. Course Fees: IUC1 \$15; L001 \$30; LRS1 \$20; STSI \$20.

CHE 4213. Instrumental Analysis. (2-5) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in CHE 3214 and CHE 3652. Grade of "C-" or better or concurrent enrollment in 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.) Generally offered: Fall, Spring. Course Fees: IUC1 \$15; L001 \$30; LRS1 \$15; STSI \$15.

CHE 4303. Biochemistry. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in 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.) Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

CHE 4463. Inorganic Chemistry. (3-0) 3 Credit Hours.

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.) Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

CHE 4473. Bioinorganic Chemistry. (3-0) 3 Credit Hours.

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 bio-organometallic compounds. A discussion of the experimental techniques will be included. Course Fees: LRS1 \$15; STSI \$15.

CHE 4613. Introduction to Polymer Chemistry. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in CHE 3703 and CHE 3643. Fundamental concepts of polymer chemistry, including mechanisms for synthesis, kinetics, and copolymerization; molecular weight, stereoisomerism, morphology, solubility, and thermal transitions; visco- and rubber elasticity; and the molecular basis for physical properties. (Formerly CHE 4203. Credit cannot be earned for both CHE 4613 and CHE 4203.) Course Fees: LRS1 \$15; STSI \$15.

CHE 4623. Chemistry of Heterocyclic Compounds. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in 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.) Course Fees: LRS1 \$15; STSI \$15.

CHE 4673. Intermediate Organic Chemistry. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in CHE 3643, or consent of instructor. Building on the Organic Chemistry I and II courses, this course focuses on how to draw reasonable "electron-pushing" mechanisms for organic reactions. Acid-base concepts, stereochemistry and conformations, catalysis, and simple molecular orbital theory will be used as needed. Course Fees: LRS1 \$15; STSI \$15.

CHE 4853. Computational Chemistry. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in 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. Generally offered: Summer. Course Fees: LRS1 \$15; STSI \$15.

CHE 4883. Introduction to Mass Spectrometry. (2-3) 3 Credit Hours.

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.) Course Fees: IUC1 \$15; L001 \$30; LRS1 \$15; STSI \$15.

CHE 4911. Independent Study. (0-0) 1 Credit Hour.

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. Course Fees: LRS1 \$5; STSI \$5.

CHE 4912. Independent Study. (0-0) 2 Credit Hours.

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. Course Fees: LRS1 \$10; STSI \$10.

CHE 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fees: LRS1 \$15; STSI \$15.

CHE 4923. Special Project in Chemistry. (0-0) 3 Credit Hours.

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. Course Fees: LRS1 \$15; STSI \$15.

CHE 4953. Special Studies in Chemistry. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

CHE 4971. Proseminar. (0-3) 1 Credit Hour.

Prerequisite: A grade of "C-" or better in 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. Generally offered: Fall, Spring. Course Fees: LRS1 \$5; STSI \$5.

CHE 4993. Honors Research. (0-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

Chinese (CHN)

Chinese (CHN) Courses

CHN 1014. Elementary Chinese I. (3-2) 4 Credit Hours. (TCCN = CHIN 1411)

Fundamentals of Chinese offering the opportunity to develop basic listening, speaking, reading, and writing skills. Introduction of Chinese characters and Chinese culture. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall. Course Fees: LRC1 \$16; LRLF \$10; MM01 \$7.

CHN 1024. Elementary Chinese II. (3-2) 4 Credit Hours. (TCCN = CHIN 1412)

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. Generally offered: Spring. Course Fee: MM01 \$7.

CHN 2013. Intermediate Chinese I. (3-1) 3 Credit Hours. (TCCN = CHIN 2311)

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. Generally offered: Fall. Course Fee: MM01 \$7.

CHN 2023. Intermediate Chinese II. (3-1) 3 Credit Hours. (TCCN = CHIN 2312)

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. Generally offered: Spring. Course Fee: MM01 \$7.

Civil Engineering (CE)

Civil Engineering (CE) Courses

CE 1301. Introduction to Civil Engineering. (1-0) 1 Credit Hour.

Prerequisites: Completion of or concurrent enrollment in 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. Generally offered: Fall, Spring. Course Fees: L001 \$10; LRE1 \$20; STSE \$10.

CE 2103. Civil Engineering Measurements. (2-3) 3 Credit Hours.

Prerequisites: CE 1301 and MAT 1214. Principles of measurement and error analysis; application of equipment to acquire, analyze, and control data in civil engineering systems; and introduction to plane surveying. Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

CE 2313. Computer-Aided Design in Civil Engineering. (3-0) 3 Credit Hours.

Prerequisites: EGR 1403 and completion of or concurrent enrollment in CE 2103. Organization and programming of civil engineering problems for computer solutions; application of computer-aided design in civil engineering. (Formerly CE 4313. Credit cannot be earned for both CE 4313 and CE 2313.) Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

CE 2633. Environmental Engineering. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

CE 3103. Mechanics of Solids. (2-3) 3 Credit Hours.

Prerequisites: EGR 2103 and completion of or concurrent enrollment in 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. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

CE 3113. Structural Analysis. (3-0) 3 Credit Hours.

Prerequisite: CE 3103. Forces and deflections in structural systems; considers stationary and moving loads and exact and approximate methods. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

CE 3173. Numerical Methods. (3-0) 3 Credit Hours.

Prerequisites: CS 1173 and EGR 2323. Use of computing languages (with an emphasis on Visualbasic) and numerical methods in solving civil and environmental engineering problems. Techniques for computer solution of linear and nonlinear simultaneous equations; eigenvalues; finite differences; numerical integration; numerical solutions to ordinary differential equations. Case studies in various civil engineering areas. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

CE 3213. Reinforced Concrete Design. (2-3) 3 Credit Hours.

Prerequisites: CE 3113 and completion of or concurrent enrollment in CE 3243. Ultimate strength theory and design for reinforced concrete members. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

CE 3223. Highway Engineering. (3-0) 3 Credit Hours.

Prerequisites: CE 2103 and completion of or concurrent enrollment in EGR 3713. General characteristics of highway design; horizontal and vertical alignment, cross-sections, earthwork, drainage, and pavement; and economic analysis. (Formerly CE 4123. Credit cannot be earned for both CE 4123 and CE 3223.) Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

CE 3233. Steel Design. (2-3) 3 Credit Hours.

Prerequisites: Completion of or concurrent enrollment in CE 3113 and CE 3243. Analysis and design of steel tension members, beams, columns, and bolted or welded connections. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

CE 3243. Properties and Behavior of Engineering Materials. (2-3) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: L001 \$30; LRE1 \$20; STSE \$30.

CE 3413. Geotechnical Engineering and Applications. (2-3) 3 Credit Hours.

Prerequisites: CE 3103 and completion of or concurrent enrollment in CE 3173. 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. Generally offered: Fall, Spring. Course Fees: L001 \$30; LRE1 \$20; STSE \$30.

CE 3603. Fluid Mechanics. (2-3) 3 Credit Hours.

Prerequisite: EGR 2513. Fluid properties, fluid statics concepts, equations of fluid flow in pipes and open channels, and flow-through porous media. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

CE 4013. Civil Engineering Systems Analysis. (3-0) 3 Credit Hours.

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.) Course Fees: LRE1 \$20; STSE \$30.

CE 4103. Advanced Steel Design. (3-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

CE 4133. Advanced Reinforced Concrete. (3-0) 3 Credit Hours.

Prerequisite: CE 3213. Technical elective course. Design of concrete building systems including continuous one-way and two-way slab systems as well as vertical and lateral load resisting members such as slender columns and shear walls. Course Fees: LRE1 \$20; STSE \$30.

CE 4143. Introduction to Timber Design. (3-0) 3 Credit Hours.

Prerequisites: Completion of or concurrent enrollment in CE 3113 and CE 3243. Technical elective course. Design philosophy and methodology for timber structures. Flexure design, axial load design, and shear design of basic timber components. (Formerly CE 3253 and CE 4253. Credit cannot be earned for both CE 4143 and CE 3253 or CE 4253.) Course Fees: LRE1 \$20; STSE \$30.

CE 4153. Prestressed Concrete. (3-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

CE 4163. Advanced Structural Analysis. (3-0) 3 Credit Hours.

Prerequisite: CE 3113. Technical elective course. The class focuses on the matrix analysis method applied to structural analysis. The course will cover all the facets of the structural analysis method including the assembly of element and structure stiffness matrices, fixed end force and moment vectors, and nodal displacements. Course Fees: LRE1 \$20; STSE \$30.

CE 4173. Dynamics and Vibrations. (3-0) 3 Credit Hours.

Prerequisite: CE 3113. Technical elective course. The class focuses on the fundamentals of structural dynamics, including single degree-of-freedom and multi-degree-of-freedom systems. The course presents common analysis techniques used to calculate the dynamic response of structures to different types of time-varying loads. Course Fees: LRE1 \$20; STSE \$30.

CE 4183. Experimental Stress Analysis. (3-0) 3 Credit Hours.

Prerequisite: CE 3103 or ME 3813. Technical elective course. Technical elective course. After completing the course students should be able to recognize and properly use different types of sensors for applications in experimental analysis of structures. Students should have acquired an understanding of the basic principles used to develop the sensors discussed in the class, to evaluate the quality of the data obtained from measurements, and to make adjustments to improve the quality of test data if necessary. Course Fees: LRE1 \$20; STSE \$30.

CE 4223. Introduction to Masonry Design. (3-0) 3 Credit Hours.

Prerequisites: Completion of or concurrent enrollment in CE 3113 and CE 3243. Technical elective course. Design philosophy and methodology for masonry structures. Flexure design, axial load design, and shear design of basic masonry components. (Formerly CE 3253 and CE 4253. Credit cannot be earned for both CE 4223 and CE 3253 or CE 4253.) Course Fees: LRE1 \$20; STSE \$30.

CE 4283. Design of Buildings for Lateral Loads. (3-0) 3 Credit Hours.

Prerequisites: Completion of or concurrent enrollment in CE 3213 and CE 3233. Technical elective course. Understanding and application of lateral loads to the design of steel, concrete, wood and masonry structures. Course Fees: LRE1 \$20; STSE \$30.

CE 4293. Geographic Information Systems (GIS). (3-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

CE 4303. Hydrometeorology. (3-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

CE 4403. Advanced Characterization of Highway Materials. (3-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

CE 4453. Transportation Engineering. (3-0) 3 Credit Hours.

Prerequisite: CE 3223. 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.) Course Fees: LRE1 \$20; STSE \$30.

CE 4463. Foundation Engineering. (3-0) 3 Credit Hours.

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.) Generally offered: Fall. Course Fees: LRE1 \$20; STSE \$30.

CE 4543. Project Design and Construction Management. (3-0) 3 Credit Hours.

Prerequisites: EGR 3713, CE 3173, and either CE 3213 or CE 3233. 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. The course forms the student teams for CE 4813 Civil Engineering Design and identifies projects. Students are trained on how to write Request for Proposals (RFPs) for the identified projects and how to write engineering consulting proposals in reply to the RFP. Students are also trained on how to present proposals to a panel of senior engineers at the end of the semester. Course must be taken the semester prior to taking CE 4813. (Formerly CE 3543. Credit cannot be earned for both CE 3543 and CE 4543.) Course Fees: LRE1 \$20; STSE \$30.

CE 4603. Water Resources Engineering. (3-0) 3 Credit Hours.

Prerequisites: CE 2633 and CE 3603. Analysis and design of surface and subsurface water resource facilities. Design of water supply, wastewater collection, and storm water systems. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

CE 4613. Environmental Chemistry. (3-0) 3 Credit Hours.

Prerequisite: CE 4633. 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. (Same as ES 3153. Credit cannot be earned for both CE 4613 and ES 3153.) Course Fees: LRE1 \$20; STSE \$30.

CE 4633. Water and Wastewater Treatment. (2-3) 3 Credit Hours.

Prerequisites: CE 2633 and CE 3603. The application of chemical, biochemical, and physical processes to water treatment, wastewater treatment, and pollution control. (Formerly CE 3633. Credit cannot be earned for both CE 3633 and CE 4633.) Course Fees: L001 \$10; LRE1 \$20; STSE \$30.

CE 4723. Hydraulic Systems Design. (3-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

CE 4733. Applied Hydrology. (3-0) 3 Credit Hours.

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. (Formerly CE 3723. Credit cannot be earned for both CE 4733 and CE 3723.) Course Fees: LRE1 \$20; STSE \$30.

CE 4813. Civil Engineering Design. (3-0) 3 Credit Hours.

Prerequisites: CE 3223, CE 4543, and CE 4603. 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. Generally offered: Fall, Spring. Course Fees: L001 \$30; LRE1 \$20; STSE \$30.

CE 4911. Independent Study. (0-0) 1 Credit Hour.

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. Course Fees: LRE1 \$20; STSE \$10.

CE 4912. Independent Study. (0-0) 2 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$20.

CE 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

CE 4953. Special Studies in Civil Engineering. (3-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

Classics (CLA)

Classics (CLA) Courses

CLA 1114. Basic Individualized Instruction. (0-0) 4 Credit Hours.

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.

CLA 2013. Introduction to Ancient Greece. (3-0) 3 Credit Hours.

Introduction to the civilization and cultural achievements of ancient Greece, including history, religion, philosophy, literature, and art. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall. Course Fees: LRC1 \$12; LRLF \$10.

CLA 2023. Introduction to Ancient Rome. (3-0) 3 Credit Hours.

Introduction to the civilization and cultural achievements of ancient Rome, including history, religion, philosophy, literature, and art. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Spring. Course Fees: LRC1 \$12; LRLF \$10.

CLA 2033. Introduction to Classical Literature. (3-0) 3 Credit Hours.

Introductory study of selected works of ancient Greek and Roman authors, with emphasis on epic, drama, satire, and lyric. May be applied toward the Core Curriculum requirement in Creative Arts. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

CLA 2113. Intermediate Individualized Instruction. (0-0) 3 Credit Hours.

Prerequisite: Successful completion of LAT 1124 or GRK 1124 or permission of the instructor. 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.

CLA 2323. Classical Mythology. (3-0) 3 Credit Hours.

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

CLA 2953. Topics for the Study of the Ancient Mediterranean. (3-0) 3 Credit Hours.

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.

CLA 3023. Classical Myths and Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. 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.

CLA 3053. Topics in Classical Genres. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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.

CLA 3063. Topics in the Art and Architecture of the Classical World. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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. Generally offered: Summer.

CLA 3123. Cultural Issues in Classical Antiquity. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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. Generally offered: Fall, Summer.

CLA 3513. Topics in Classical History. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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. Generally offered: Fall, Spring.

CLA 4911. Independent Study. (0-0) 1 Credit Hour.

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.

CLA 4912. Independent Study. (0-0) 2 Credit Hours.

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.

CLA 4913. Independent Study. (0-0) 3 Credit Hours.

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.

CLA 4953. Special Studies in Classics. (3-0) 3 Credit Hours.

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.

CLA 4973. Senior Seminar in Classics. (3-0) 3 Credit Hours.

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").

CLA 4991. Honors Thesis. (0-0) 1 Credit Hour.

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.

CLA 4992. Honors Thesis. (0-0) 2 Credit Hours.

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.

CLA 4993. Honors Thesis. (0-0) 3 Credit Hours.

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 Success Seminar (CSS)

College Success Seminar (CSS) Courses

CSS 1201. College Success Seminar. (1-0) 1 Credit Hour.

A course to help students improve college-level study skills and mastery learning techniques based on current research. This course is taught within the Tomas Rivera Center. May be repeated.

Communication (COM)

Communication (COM) Courses

COM 1043. Introduction to Communication. (3-0) 3 Credit Hours. (TCCN = SPCH 1311)

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. Generally offered: Fall, Spring, Summer.

COM 1053. Business and Professional Speech. (3-0) 3 Credit Hours. (TCCN = SPCH 1321)

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. (Credit cannot be earned for both COM 1053 and COM 1063.) Generally offered: Fall, Spring, Summer.

COM 1063. Digital Business Communication. (3-0) 3 Credit Hours. (TCCN = SPCH 1321)

Prerequisite: WRC 1013. Restricted to students in the BBA in Cyber Security Online Program. Examination of the basic communication processes through digital communication channels with strategic applications for business. Emphasis is placed on current technologies (social media, Skype, public presentations, etc.) of business and professional presentation, including components of message strategies, nonverbal/symbolic communication, multimedia support, and persuasive/influencing presentations in a digital era. Multiple presentations with written components required. (Credit cannot be earned for both COM 1053 and COM 1063.) Generally offered: Fall, Spring, Summer.

COM 2113. Public Speaking. (3-0) 3 Credit Hours. (TCCN = SPCH 1315)

Prerequisite: WRC 1013. Theory and practice of speaking in formal settings. Emphasis on preparation, adaptation, and delivery of oral and visual presentations, as well as written analysis of historical speeches. May be applied toward the Core Curriculum requirement in the Component Area Option. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

COM 2343. Introduction to Mass Communication. (3-0) 3 Credit Hours. (TCCN = COMM 1307)

Prerequisites: WRC 1013 and WRC 1023. Critical examination of how the mass media interact with individuals and social groups. Exploration of media industries, products, and processes from various disciplinary perspectives. Generally offered: Fall, Spring. Course Fee: LRLF \$10.

COM 2433. Editing. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring.

COM 2733. Introduction to Digital Communication. (3-0) 3 Credit Hours.

Prerequisites: WRC 1013 and WRC 1023. 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. (Formerly titled "Introduction to Communication Technologies.") Generally offered: Spring.

COM 2801. Forensic Activities. (0-0) 1 Credit Hour.

Prerequisite: Consent of instructor. Opportunity to study the preparation and presentation of oral argument or speaking in competitive situations. May be repeated for credit. Generally offered: Fall.

COM 3023. Foundations of Communication. (3-0) 3 Credit Hours.

Prerequisites: WRC 1013 and WRC 1023; and enrollment as a Communication major or minor, or enrollment in Multidisciplinary Studies. 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. Generally offered: Fall, Spring, Summer.

COM 3073. Conduct of Communication Inquiry. (3-0) 3 Credit Hours.

Prerequisite: Completion of or concurrent enrollment in COM 3023. Required of and restricted to students majoring in Communication. 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. Generally offered: Fall, Spring, Summer.

COM 3083. Language and Communication Theory. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer.

COM 3113. Argumentation and Debate. (3-0) 3 Credit Hours.

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. Generally offered: Fall.

COM 3243. Persuasion. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as a Communication major or minor, or enrollment in Multidisciplinary Studies. Theory and practice of influencing attitudes, beliefs, opinions, and actions. Emphasis on critical evaluation of persuasive messages and design of persuasive campaigns. Generally offered: Spring.

COM 3253. Rhetorical Communication Analysis. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as a Communication major or minor, or enrollment in Multidisciplinary Studies. Study of classical and contemporary rhetorical theory. Critical evaluation of communication messages and techniques of delivery.

COM 3293. Introduction to Health Communication. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as a Communication major or minor, or enrollment in Multidisciplinary Studies, Medical Humanities, or Public Health, or consent of the instructor. This course is a survey of the field of health communication. This course is designed to increase student familiarity and understanding of the many ways in which health and illness affect and is affected by communication, emphasizing the interplay between communication, culture, identity, and relationships. This course introduces multiple communication issues relevant to the ways in which individuals negotiate health and illness including: contested meanings of health; the social construction of health and illness; how individuals experience and enact health; the influence on health interactions of social systems, culture and identity, social media, and organizational culture. A variety of topics will be explored, including conceptualizations of health; historical and modern approaches to healthcare; provider-patient interaction; health campaigns; social support; media and health; theories of behavioral change; and more. Generally offered: Fall, Spring, Summer.

COM 3383. Interpersonal Communication. (3-0) 3 Credit Hours.

Prerequisite: COM 1053 or COM 2113. 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.) Generally offered: Fall, Spring, Summer.

COM 3493. Global Health Communication. (3-0) 3 Credit Hours.

Prerequisite: COM 3293. This course is designed to provide students with a critical overview of global public health communication. In the backdrop of emergent global public health challenges, and promises, students will explore the history and imperatives of global health interventions and communication programs, its varied key concepts, theories and methodological approaches, as well as case studies of application and discussions of ethical tensions in the field. Students will be exposed to a range theoretical and methodological interventions and case studies from across the globe in order to have a firm understanding of global health communication programs. Successful completion of this course will prepare students for a future career in international development, global public health communication, and in being an active and engaged citizen in the health care debates, both locally and globally. Generally offered: Fall, Spring.

COM 3523. Public Relations. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fee: DL01 \$75.

COM 3533. Writing for Public Relations. (3-0) 3 Credit Hours.

Prerequisites: Completion of or concurrent enrollment in 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.) Generally offered: Fall, Spring, Summer.

COM 3553. Intercultural Communication. (3-0) 3 Credit Hours.

Prerequisites: COM 3023, and completion of or concurrent enrollment in COM 3073 and 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. Generally offered: Fall, Spring, Summer.

COM 3563. International Communication. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer.

COM 3593. Health Communication Campaigns. (3-0) 3 Credit Hours.

Prerequisite: COM 3293. This course is designed to increase students' critical understanding of the effects of various media in helping and hindering public health promotion efforts by examining the basic and health-specific communication theories, models and assumptions related to media influence with respect to potential effects on individual health and wellbeing. Students will use theory and research to help explain factors that affect the creation and delivery of health communication campaigns, including how culture and other variables affect message design and campaign effectiveness. In formulating a strategic plan for a focused media campaign, students will detail the rationale, design, implementation considerations, and evaluation plan for a practical health promotion initiative. The course focuses on the ethical dilemmas inherent in the use of strategic communications designed to persuade people to change their behavior. Generally offered: Fall, Spring.

COM 3623. Commercial Publications. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer.

COM 3633. Professional Presentation. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

COM 3693. Interpersonal Health Communication. (3-0) 3 Credit Hours.

Prerequisite: COM 3293. This course is a survey of interpersonal communication that impacts, is impacted by, and involves health. Students are expected to gain both theoretical and practical knowledge that can be applied in personal and professional capacities. Students will learn how dysfunctional or negative interpersonal communication can affect well-being, and conversely how interpersonal communication helps us stay healthy and is a valuable resource when we are ill. How we communicate about health with peers, partners, and family will be discussed, and the importance of interpersonal communication in healthcare will be addressed. The course will touch on such contexts as medical decision-making, social support, health-related disclosure, "fat talk," sexuality and communication, end-of-life discussions, and more. Generally offered: Fall, Spring.

COM 3723. Digital Media Production I. (3-0) 3 Credit Hours.

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. (Formerly COM 3413. Credit cannot be earned for both COM 3413 and COM 3723.) Generally offered: Fall, Spring, Summer.

COM 3883. Small Group Communication. (3-0) 3 Credit Hours.

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.

COM 3893. Organizational Communication. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring, Summer.

COM 4383. Relational Communication. (3-0) 3 Credit Hours.

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.

COM 4413. Topics in Communication. (3-0) 3 Credit Hours.

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. Generally offered: Fall.

COM 4523. Case Studies in Public Relations. (3-0) 3 Credit Hours.

Prerequisites: COM 3073, COM 3523, and completion of or concurrent enrollment in COM 3533. Advanced study of public relations functions, principles, and practices using local, regional, and national organizations as examples. Generally offered: Fall, Spring, Summer.

COM 4533. Public Relations Planning and Campaigns. (3-0) 3 Credit Hours.

Prerequisites: COM 3623 and COM 4523 with a grade of "C-" or better. 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. Generally offered: Fall, Spring.

COM 4723. Digital Media Production II. (3-0) 3 Credit Hours.

Prerequisites: COM 2433 and COM 3723 or consent of instructor. Theory and application of digital production formats, such as Web animation, digital photo production or digital film. This course fulfills the College of Liberal and Fine Arts Signature Experience. Generally offered: Fall, Spring, Summer.

COM 4813. Theory and Practice of Social Interaction. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

COM 4893. Health Communication Practicum. (3-0) 3 Credit Hours.

Prerequisites: COM 3293, and COM 3493, COM 3593 or COM 3693. This course is designed to deepen students' understanding of health communication as a field of inquiry and practice by enabling them to explore how health communication theories and frameworks operate in the world around us. Specific settings, circumstances, and cases will be used to illustrate the utility of health communication concepts. Featuring involvement with local organizations or community events, students will apply, analyze, and evaluate health communication concepts as they operate in context. This course requires participation in activities outside of the classroom, the nature of which will vary based on the instructor of record. This course fulfills the College of Liberal and Fine Arts Signature Experience. Generally offered: Fall, Spring.

COM 4911. Independent Study in Communication. (0-0) 1 Credit Hour.

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.

COM 4912. Independent Study in Communication. (0-0) 2 Credit Hours.

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.

COM 4913. Independent Study in Communication. (0-0) 3 Credit Hours.

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.

COM 4933. Internship in Communication. (0-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer.

COM 4993. Honors Thesis. (0-0) 3 Credit Hours.

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)

Comparative Studies in the Humanities (CSH) Courses

CSH 1103. Literary Masterpieces of Western Culture I. (3-0) 3 Credit Hours. (TCCN = ENGL 2332)

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall. Course Fees: LRC1 \$12; LRLF \$10; MM01 \$7.

CSH 1113. Literary Masterpieces of Western Culture II. (3-0) 3 Credit Hours. (TCCN = ENGL 2333)

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Course Fees: LRC1 \$12; LRLF \$10; MM01 \$7.

CSH 1213. Topics in World Cultures. (3-0) 3 Credit Hours. (TCCN = HUMA 2323)

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10; MM01 \$7.

CSH 2113. The Foreign Film. (3-0) 3 Credit Hours.

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRLF \$10; MM01 \$7.

CSH 3023. Studies in Comparative Literature. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fee: MM01 \$7.

CSH 3823. Advanced Topics in World Cultures. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fee: MM01 \$7.

CSH 4003. Colloquium in East Asian Culture. (3-0) 3 Credit Hours.

Prerequisite: CHN 1024, JPN 1024, or KOR 1024, or consent of instructor. Offers the opportunity for further exploration and discussion of critical issues relating to East Asian culture, history, economy, and other selected topics. May be repeated once for credit when topics vary. Course Fee: MM01 \$7.

CSH 4153. Special Projects in East Asian Studies. (0-0) 3 Credit Hours.

Prerequisite: Permission of the Department Chair. Supervised experience in a professional/academic setting that provides the opportunity to integrate theory and practice in East Asian Studies. Study Abroad experience in one area of the East Asian Region may be substituted for the Special Projects course. May be repeated once for credit when topics vary. Course Fee: MM01 \$7.

Computer Engineering (CPE)

Computer Engineering (CPE) Courses

CPE 2073. Introduction to Computer Programming for Engineers. (3-1) 3 Credit Hours.

Prerequisites: MAT 1214 and completion of or concurrent enrollment in MAT 1224. Algorithmic approach to problem solving, basic programming techniques such as conditional execution (e.g., if-else), repetition (loops), and functions, implicit and explicit memory management, and intro to object oriented programming. One hour of problem solving recitation per week. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

CPE 4812. Computer Engineering Design I. (2-1) 2 Credit Hours.

Prerequisites: EE 3563 and concurrent enrollment in, or completion of, EE 3233 and 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. (Formerly CPE 4811. Credit cannot be earned for both CPE 4812 and CPE 4811.) Course Fees: LRE1 \$20; STSE \$20.

CPE 4813. Computer Engineering Design II. (3-2) 3 Credit Hours.

Prerequisites: EE 4113 and CPE 4812. 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. Course Fees: LRE1 \$20; STSE \$30.

CPE 4911. Independent Study. (0-0) 1 Credit Hour.

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. Course Fees: LRE1 \$20; STSE \$10.

CPE 4912. Independent Study. (0-0) 2 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$20.

CPE 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

CPE 4953. Special Studies in Computer Engineering. (3-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

Computer Science (CS)

NOTE: All prerequisites for Computer Science (CS) courses must be completed with a grade of "C-" or better.

Computer Science (CS) Courses

CS 1023. Cultural Implications of the Information Society. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

CS 1033. Microcomputer Applications. (3-0) 3 Credit Hours.

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.) Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

CS 1063. Introduction to Computer Programming I. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

CS 1083. Programming I for Computer Scientists. (3-0) 3 Credit Hours. (TCCN = COSC 1336)

Prerequisite: MAT 1073 or the equivalent. An introduction to computer programming emphasizing structured programming, problem solving, and algorithmic thinking. Topics include assignment, decisions, loops, methods, arrays, and use of objects. Students intending to major or minor in Computer Science should take this course instead of CS 1063. Course Fees: LRS1 \$15; STSI \$15.

CS 1143. Web Design. (3-0) 3 Credit Hours.

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. Course Fees: LRS1 \$15; STSI \$15.

CS 1153. Game Programming. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

CS 1173. Data Analysis and Visualization. (3-0) 3 Credit Hours.

Prerequisite: MAT 1023. Introduction to computation for data analysis and visualization in a programming language such as MATLAB or R. 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. May be applied toward the Core Curriculum requirement in the Component Area Option. (Formerly titled "Computation for Scientists and Engineers.") Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

CS 1711. Computer Programming II Recitation. (1-0) 1 Credit Hour. (TCCN = COSC 1437)

Prerequisite: CS 1083. Concurrent enrollment in CS 1713 is required. Recitation to accompany CS 1713. (Formerly titled "Introduction to Computer Science Recitation.") Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$5; STSI \$5.

CS 1713. Computer Programming II. (3-0) 3 Credit Hours. (TCCN = COSC 1437)

Prerequisite: CS 1083. Concurrent enrollment in CS 1711 is required. Extended programming concepts including multidimensional arrays, pointers, dynamic memory allocation/deallocation and recursion. Problem solving methods, algorithm development and implementation. (Formerly titled "Introduction to Computer Science.") Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

CS 2073. Computer Programming with Engineering Applications. (3-0) 3 Credit Hours. (TCCN = ENGR 2304)

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. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

CS 2121. Data Structures Recitation. (1-0) 1 Credit Hour.

Prerequisites: CS 1713 and MAT 1214. 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.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$5; STSI \$5.

CS 2123. Data Structures. (3-0) 3 Credit Hours.

Prerequisites: CS 1713 and MAT 1214. 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.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

CS 2153. Game Design. (3-0) 3 Credit Hours.

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. Course Fees: LRS1 \$15; STSI \$15.

CS 2233. Discrete Mathematical Structures. (3-0) 3 Credit Hours. (TCCN = MATH 2305)

Prerequisites: CS 1713 and MAT 1214. 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.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

CS 3113. Principles of Cyber Security. (3-0) 3 Credit Hours.

Prerequisite: CS 2123. An introductory course in Cyber Security including an examination of the fundamental principles underlying cyber security, how these principles interrelate and how they are typically employed to secure computer systems and networks. The course will also examine how failures in fundamental security design principles can lead to system vulnerabilities that can be exploited and will also examine the legal issues governing cyber law and cyber operations. (Formerly CS 2433. Credit cannot be earned for both CS 3113 and CS 2433.) Course Fees: LRS1 \$15; STSI \$15.

CS 3333. Mathematical Foundations of Computer Science. (3-0) 3 Credit Hours.

Prerequisites: CS 1713 and MAT 1224. Survey and development of mathematical and statistical tools suitable for describing algorithmic applications. Vectors, matrices, combinatorics, probability and statistical models. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

CS 3343. Analysis of Algorithms. (3-0) 3 Credit Hours.

Prerequisites: CS 2123, CS 2233, and CS 3333. Analysis of the performance of algorithms; discussion of programming techniques and data structures used in the writing of effective algorithms. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

CS 3421. Systems Programming Recitation. (1-0) 1 Credit Hour.

Prerequisite: 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.) Generally offered: Fall, Spring. Course Fees: LRS1 \$5; STSI \$5.

CS 3423. Systems Programming. (3-0) 3 Credit Hours.

Prerequisite: CS 2123. Concurrent enrollment in CS 3421. 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.) Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

CS 3433. Computer and Information Security. (3-0) 3 Credit Hours.

Prerequisites: CS 3423 and consent of instructor. 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. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

CS 3443. Application Programming. (3-0) 3 Credit Hours.

Prerequisite: CS 2123. Advanced application development in a current object-oriented language. Introduction to the software life cycle, best programming practices, and modern development tools. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

CS 3723. Programming Languages. (3-0) 3 Credit Hours.

Prerequisites: CS 2233 and CS 3443. 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. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

CS 3733. Operating Systems. (3-0) 3 Credit Hours.

Prerequisites: CS 3423, CS 3443, and CS 3843. 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. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

CS 3743. Database Systems. (3-0) 3 Credit Hours.

Prerequisites: CS 2233 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. Course Fees: LRS1 \$15; STSI \$15.

CS 3753. Data Science. (3-0) 3 Credit Hours.

Prerequisites: CS 2123, CS 2233, and CS 3333. Study of fundamental methods and models of data science. Topics include data management, Extract-Transform-Loading methods, machine learning models, and data visualization. Use of a specialized programming language is emphasized. Course Fees: LRS1 \$15; STSI \$15.

CS 3773. Software Engineering. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

CS 3793. Artificial Intelligence. (3-0) 3 Credit Hours.

Prerequisites: CS 3343 and CS 3423. Discussion of theorem-proving by machine; includes computational linguistics, psychological modeling, and computer games. Course Fees: LRS1 \$15; STSI \$15.

CS 3841. Computer Organization Recitation. (1-0) 1 Credit Hour.

Prerequisite: 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.) Generally offered: Fall, Spring. Course Fees: LRS1 \$5; STSI \$5.

CS 3843. Computer Organization. (3-0) 3 Credit Hours.

Prerequisite: 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.) Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

CS 3853. Computer Architecture. (3-0) 3 Credit Hours.

Prerequisites: CS 3423 and CS 3843. 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.) Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

CS 3873. Computer Networks. (3-0) 3 Credit Hours.

Prerequisite: 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.) Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

CS 4223. Bioinformatics and Big Data. (3-0) 3 Credit Hours.

Prerequisite: CS 3343 or consent of instructor. Hands-on introduction to large-scale analysis of heterogeneous data with emphasis on integrating information and tools from publicly available biological databases to address complex problems. Course Fees: LRS1 \$15; STSI \$15.

CS 4233. Computational Biology and Bioinformatics. (3-0) 3 Credit Hours.

Prerequisite: CS 3343. Study of algorithmic and statistical techniques in modeling and analyzing large-scale biological data such as DNA sequences, gene expression, and gene networks. Topics include fast string matching, sequence alignment, frequent pattern mining, clustering, classification, and significance testing. Course Fees: LRS1 \$15; STSI \$15.

CS 4243. Large-Scale Data Management. (3-0) 3 Credit Hours.

Prerequisites: CS 3423 and CS 3443. Modern big data systems managing the three Vs of big data (variety, volume, and velocity). Topics include, but not limited to classic data management (overview), web search, information retrieval, map/reduce, data integration, natural language processing at scale. Course Fees: LRS1 \$15; STSI \$15.

CS 4313. Automata, Computability, and Formal Languages. (3-0) 3 Credit Hours.

Prerequisite: 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. Course Fees: LRS1 \$15; STSI \$15.

CS 4353. Unix and Network Security. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

CS 4363. Cryptography. (3-0) 3 Credit Hours.

Prerequisites: CS 3343, and CS 3113 or 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. Course Fees: LRS1 \$15; STSI \$15.

CS 4373. Data Mining. (3-0) 3 Credit Hours.

Prerequisite: CS 3343 or consent of instructor. Principles, techniques, systems and evaluation of data mining. Topics may include data preprocessing, frequent pattern mining, association mining, classification and prediction, cluster analysis, and advanced topics such as mining streams, time-Series, texts, and graphs. Course Fees: LRS1 \$15; STSI \$15.

CS 4383. Computer Graphics. (3-0) 3 Credit Hours.

Prerequisites: CS 2123 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. Course Fees: LRS1 \$15; STSI \$15.

CS 4393. User Interfaces. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

CS 4413. Web Technologies. (3-0) 3 Credit Hours.

Prerequisite: CS 3423. Fundamentals of Web and component technology: markup languages, layout design, client and server side programming, database and Web integration. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

CS 4423. Game Development. (3-0) 3 Credit Hours.

Prerequisite: CS 3443. A study of the major topics in game development, such as game mechanics, rendering, scripting, user interfaces, animation, asset management, and physics, with a focus on team-based development practices. By the end of the course students will have developed a full game with a group and several mini-games individually. Course Fees: LRS1 \$15; STSI \$15.

CS 4593. Topics in Computer Science. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Advanced topics in an area of computer science. May be repeated for credit when topics vary. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

CS 4633. Simulation Techniques. (3-0) 3 Credit Hours.

Prerequisite: CS 3343. Design, execution, and analysis of simulation models, discrete event simulation techniques, input and output analysis, random numbers, and simulation tools and languages. Course Fees: LRS1 \$15; STSI \$15.

CS 4643. Cellular and Mobile Technologies. (3-0) 3 Credit Hours.

Prerequisite: CS 3733. A study of cellular and mobile infrastructure, networks, and applications. Focus on concepts and tools related to the major cellular and mobile protocols. Course Fees: LRS1 \$15; STSI \$15.

CS 4653. Software and Malware Reverse Engineering. (3-0) 3 Credit Hours.

Prerequisites: CS 3843, and CS 3113 or CS 3433. An introduction to the basic procedures to reverse engineering of software, hardware and malware. Course Fees: LRS1 \$15; STSI \$15.

CS 4663. Distributed and Cloud Systems Security. (3-0) 3 Credit Hours.

Prerequisite: CS 3733. A study of the uses and security issues of virtualization, distributed systems and cloud systems. Course Fees: LRS1 \$15; STSI \$15.

CS 4673. Cyber Operations. (3-0) 3 Credit Hours.

Prerequisite: CS 3113 or CS 3433. A study of both offensive and defensive cyber operations, risk management, social engineering, perception management, and the international legal issues and considerations surrounding cyber operations, conflict, and war. Course Fees: LRS1 \$15; STSI \$15.

CS 4683. Secure Software Development and Analysis. (3-0) 3 Credit Hours.

Prerequisite: CS 3443. Analysis of software for vulnerabilities. Development of robust, secure software. Topics include source and binary code analysis, static and dynamic code analysis techniques, testing methodologies, secure programming principles and practices. Course Fees: LRS1 \$15; STSI \$15.

CS 4713. Compiler Construction. (3-0) 3 Credit Hours.

Prerequisites: CS 3723 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.") Course Fees: LRS1 \$15; STSI \$15.

CS 4723. Software Validation and Quality Assurance. (3-0) 3 Credit Hours.

Prerequisite: CS 3773. 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. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

CS 4743. Enterprise Software Engineering. (3-0) 3 Credit Hours.

Prerequisites: CS 3743 and CS 3773. Providing a hands-on introduction to principles and best practices for the development of enterprise-level software systems. Topics include architectural patterns, database models, remote deployment and execution, and concurrency management. (Formerly titled "Applied Software Engineering.") Course Fees: LRS1 \$15; STSI \$15.

CS 4773. Object-Oriented Systems. (3-0) 3 Credit Hours.

Prerequisite: CS 3773. 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. Course Fees: LRS1 \$15; STSI \$15.

CS 4783. Advanced Software Engineering. (3-0) 3 Credit Hours.

Prerequisites: CS 3743 and CS 3773. Application of software engineering principles to develop a working, security-hardened software product as a team project. Real-world case studies and perspectives will accompany lecture to provide students with an industry-level viewpoint. Course Fees: LRS1 \$15; STSI \$15.

CS 4823. Parallel Programming. (3-0) 3 Credit Hours.

Prerequisites: CS 3343 and CS 3423. Parallel programming concepts (partitioning, synchronization and communication, programming models-shared memory based and message based), programming tools and languages, performance issues. Course Fees: LRS1 \$15; STSI \$15.

CS 4833. Embedded Systems. (3-0) 3 Credit Hours.

Prerequisite: CS 3843. 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. Course Fees: LRS1 \$15; STSI \$15.

CS 4843. Cloud Computing. (3-0) 3 Credit Hours.

Prerequisite: CS 3423. The general trend of modern computing in cloud. Cloud computing paradigm and associate key technologies. Programming in cloud environment (e.g., Hadoop, MapReduce, and OpenStack APIs). Privacy and security in Cloud. Course Fees: LRS1 \$15; STSI \$15.

CS 4853. Advanced Systems Programming. (3-0) 3 Credit Hours.

Prerequisite: CS 3733. Concepts and knowledge on system booting, memory management, process and scheduling, interrupt handling, system calls, file systems, networking, device drivers and module programming. Runtime systems. Programming kernel modules in Linux. (Formerly titled "Systems Development and Programming.") Course Fees: LRS1 \$15; STSI \$15.

CS 4863. Distributed Computing and Systems. (3-0) 3 Credit Hours.

Prerequisite: CS 3733. A distributed system comprises computers working together as a single unit. These systems are essential to the understanding of present and future computer applications. This course will include the following topics: concurrent processing, threads, network programming, distributed file systems, remote procedure calls, distributed objects, client-server models, and Internet protocols. Course Fees: LRS1 \$15; STSI \$15.

CS 4911. Independent Study. (0-0) 1 Credit Hour.

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. Course Fees: LRS1 \$5; STSI \$5.

CS 4912. Independent Study. (0-0) 2 Credit Hours.

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. Course Fees: LRS1 \$10; STSI \$10.

CS 4913. Independent Study. (0-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

CS 4933. Internship in Computer Science. (0-0) 3 Credit Hours.

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). Generally offered: Fall, Summer. Course Fees: LRS1 \$15; STSI \$15.

CS 4953. Special Studies in Computer Science. (3-0) 3 Credit Hours.

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. Generally offered: Summer. Course Fees: LRS1 \$15; STSI \$15.

CS 4963. Advanced Topics in Systems and Cloud. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Advanced topics in an area of systems and cloud. May be repeated for credit when topics vary. Course Fees: LRS1 \$15; STSI \$15.

CS 4973. Advanced Topics in Data Science. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. Advanced topics in an area of data science. May be repeated for credit when topics vary. Course Fees: LRS1 \$15; STSI \$15.

CS 4993. Honors Research. (0-0) 3 Credit Hours.

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. Course Fees: LRS1 \$15; STSI \$15.

Construction Science and Management (CSM)

Construction Science and Management (CSM) Courses

CSM 2113. Construction Materials and Methods. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an Architecture, Interior Design, or Construction Science and Management major or permission of instructor. Introduction to materials, methods, equipment and sequences of the construction process including structural elements, components, and assemblies. Course Fees: SAP1 \$25; STSA \$15.

CSM 2143. Construction Materials and Testing. (3-0) 3 Credit Hours.

Prerequisites: CSM 2113, PHY 1603, and enrollment as a Construction Science and Management major or permission of instructor. Analysis of materials and methods used in the design and construction process with a particular emphasis on quality control, quality assurance, and testing including soils, concrete, steel, masonry, and wood. Course Fees: SAP1 \$25; STSA \$15.

CSM 2323. Construction Documents. (3-0) 3 Credit Hours.

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. Course Fees: SAP1 \$25; STSA \$15.

CSM 2333. Construction Culture and History. (3-0) 3 Credit Hours.

History of construction and building technologies in Western and non-Western cultures. Emphasis on work traditions, graphical illustrations, social and political concerns. Course Fees: SAP1 \$25; STSA \$15.

CSM 3011. Construction Industry Contemporary Issues. (1-0) 1 Credit Hour.

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. Course Fees: SAP1 \$25; STSA \$5.

CSM 3113. Construction Surveying. (3-0) 3 Credit Hours.

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. (Formerly CSM 3111. Credit Cannot be earned for both CSM 3113 and CSM 3111.) Course Fees: SAP1 \$25; STSA \$15.

CSM 3123. Technical Communication. (3-0) 3 Credit Hours.

Prerequisites: MAT 1043 or MAT 1053 and enrollment as a Construction Science and Management major or permission of instructor. Visualization, interpretation and communication of graphical geometry in construction design and engineering; graphical analysis of problems; plan reading; computer aided design, and fundamentals of information modeling software; introduction to common quantitative tools in construction. Course Fees: SAP1 \$25; STSA \$15.

CSM 3143. Structures I. (3-0) 3 Credit Hours.

Prerequisites: PHY 1603 and enrollment as a Construction Science and Management major or permission of instructor. Introduction to the physical principles that govern classical statics and strengths of materials through the design of concrete, timber, and steel components of structures. Course Fees: SAP1 \$25; STSA \$15.

CSM 3621. Construction Safety I. (1-0) 1 Credit Hour.

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. Generally offered: Summer. Course Fees: SAP1 \$25; STSA \$5.

CSM 4013. Construction Estimating I. (3-0) 3 Credit Hours.

Prerequisites: CSM 2113 and CSM 3123. 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.) Generally offered: Spring. Course Fees: SAP1 \$25; STSA \$15.

CSM 4023. Construction Estimating II. (3-0) 3 Credit Hours.

Prerequisites: CSM 2143 and 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.) Generally offered: Fall, Spring. Course Fees: SAP1 \$25; STSA \$15.

CSM 4143. Structures II. (3-0) 3 Credit Hours.

Prerequisite: CSM 3143. Analysis and design of structural members in steel, reinforced concrete, reinforced masonry and their relationship to design and construction. Course Fees: SAP1 \$25; STSA \$15.

CSM 4513. Project Management. (3-0) 3 Credit Hours.

Prerequisite: CSM 3123. Introduction to project 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.) Generally offered: Fall, Spring. Course Fees: SAP1 \$25; STSA \$15.

CSM 4523. Project Planning and Scheduling. (3-0) 3 Credit Hours.

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.) (Formerly titled "Construction Management II.") Generally offered: Fall, Spring. Course Fees: SAP1 \$25; STSA \$15.

CSM 4533. Building Information Modeling for Construction Management. (3-0) 3 Credit Hours.

Prerequisite: CSM 3123. Introduction to techniques used in development and management of Building Information Models. Emphasis on constructability and management. Generally offered: Spring. Course Fees: SAP1 \$25; STSA \$15.

CSM 4613. Sustainable Building Practice. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: SAP1 \$25; STSA \$15.

CSM 4623. Construction Safety. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor. Development and management of safety programs, worker's compensation, OSHA compliance, safety policies, standards, and record keeping. Course Fees: SAP1 \$25; STSA \$15.

CSM 4633. Construction Law. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: SAP1 \$25; STSA \$15.

CSM 4643. Mechanical, Electrical and Plumbing Systems. (3-0) 3 Credit Hours.

Prerequisite: CSM 4533 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. Generally offered: Fall. Course Fees: SAP1 \$25; STSA \$15.

CSM 4713. Construction Capstone. (3-0) 3 Credit Hours.

Prerequisites: CSM 4023, CSM 4523, CSM 4633, and CSM 4643. 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. Generally offered: Fall, Spring, Summer. Course Fees: SAP1 \$25; STSA \$15.

CSM 4911. Independent Study. (0-0) 1 Credit Hour.

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. Generally offered: Fall. Course Fees: SAP1 \$25; STSA \$5.

CSM 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fees: SAP1 \$25; STSA \$15.

CSM 4916. Independent Study. (0-0) 6 Credit Hours.

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. Course Fees: SAP1 \$25; STSA \$30.

CSM 4931. Summer Internship. (0-0) 1 Credit Hour.

Prerequisites: CSM 2323, CSM 3011, 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. Generally offered: Summer. Course Fees: SAP1 \$25; STSA \$5.

CSM 4932. Internship. (0-0) 2 Credit Hours.

Prerequisites: CSM 2323, CSM 3011, 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. Generally offered: Fall, Spring. Course Fees: SAP1 \$25; STSA \$10.

CSM 4933. Summer Internship. (0-0) 3 Credit Hours.

Prerequisite: CSM 4623. This is a full-time, on-site, construction work experience during summer semester. 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. Course Fees: SAP1 \$25; STSA \$15.

CSM 4943. Internship I. (0-0) 3 Credit Hours.

Prerequisite: CSM 4623. This is a part-time, on-site, construction work experience during fall or spring semesters. 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. Course Fees: SAP1 \$25; STSA \$15.

CSM 4946. Internship II. (0-0) 6 Credit Hours.

Prerequisite: CSM 4623. This is a full-time, on-site, construction work experience during fall or spring semesters. 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. Course Fees: SAP1 \$25; STSA \$30.

CSM 4951. Special Studies in Construction Science and Management. (1-0) 1 Credit Hour.

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. Course Fees: SAP1 \$25; STSA \$5.

CSM 4953. Special Studies in Construction Science and Management. (0-6) 3 Credit Hours.

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. Course Fees: SAP1 \$25; STSA \$15.

CSM 4956. Special Studies in Construction Science and Management. (0-12) 6 Credit Hours.

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. Course Fees: SAP1 \$25; STSA \$30.

Counseling (COU)

Counseling (COU) Courses

COU 3103. Helping Skills. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

COU 3203. Child Abuse and Domestic Violence. (3-0) 3 Credit Hours.

This course is designed to explore current issues related to child abuse and domestic violence. The major emphasis is on examining the background, causes, and consequences of these topics. Course Fees: LRH1 \$10; STSH \$15.

Criminal Justice (CRJ)

Criminal Justice (CRJ) Courses

CRJ 1113. The American Criminal Justice System. (3-0) 3 Credit Hours. (TCCN = CRIJ 1301)

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. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; STSP \$9.

CRJ 2153. Criminological Theory. (3-0) 3 Credit Hours. (TCCN = CRIJ 1307)

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. (Formerly titled "Nature of Crime and Justice.") Generally offered: Fall, Spring. Course Fee: STSP \$9.

CRJ 2213. Introduction to Policing. (3-0) 3 Credit Hours. (TCCN = CRIJ 2328)

An introduction to American policing organizations (public and private), history of policing, modern community policing practices, and important trends in law enforcement. Generally offered: Fall, Spring, Summer. Course Fee: STSP \$9.

CRJ 2513. Introduction to Corrections. (3-0) 3 Credit Hours. (TCCN = CRIJ 2313)

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.") Generally offered: Fall, Spring. Course Fee: STSP \$9.

CRJ 2813. Introduction to Courts and the Legal System. (3-0) 3 Credit Hours. (TCCN = CRIJ 1306)

Examines state and federal American court systems, their powers, remedies, limitations, and procedures; and the contributions of courts to governance. Generally offered: Fall, Spring. Course Fee: STSP \$9.

CRJ 3013. Research Design and Analysis in Criminal Justice. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fee: STSP \$9.

CRJ 3123. Investigations. (3-0) 3 Credit Hours.

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 CRJ 4123. Credit cannot be earned for both CRJ 3123 and CRJ 4123.) (Formerly titled "Concepts of Investigations.") Course Fee: STSP \$9.

CRJ 3213. Managing Criminal Justice Organizations. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fee: STSP \$9.

CRJ 3233. Introduction to Forensic Science. (3-0) 3 Credit Hours.

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. (Formerly CRJ 3133. Credit cannot be earned for both CRJ 3233 and CRJ 3133.) Generally offered: Fall, Spring. Course Fee: STSP \$9.

CRJ 3533. Community Corrections. (3-0) 3 Credit Hours.

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. (Formerly titled "Probation, Parole and Intermediate Sanctions.") Generally offered: Fall, Spring. Course Fee: STSP \$9.

CRJ 3563. Juvenile Justice. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fee: STSP \$9.

CRJ 3573. Restorative Justice. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fee: STSP \$9.

CRJ 3623. Substantive Criminal Law. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fee: STSP \$9.

CRJ 3713. Ethics in Criminal Justice Practice. (3-0) 3 Credit Hours.

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. Course Fee: STSP \$9.

CRJ 4303. Victimology. (3-0) 3 Credit Hours.

Prerequisite: CRJ 3013 with a grade of "C-" or higher. 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.") Course Fee: STSP \$9.

CRJ 4403. Race, Ethnicity, and Criminal Justice. (3-0) 3 Credit Hours.

Prerequisite: CRJ 3013 with a grade of "C-" or higher. 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.) Course Fee: STSP \$9.

CRJ 4413. Contemporary Police Practices. (3-0) 3 Credit Hours.

Prerequisite: CRJ 3013 with a grade of "C-" or higher. A survey of leading research-based law enforcement practices for crime prevention and problem solving. This course covers a variety of policing strategies for crime control including community policing, problem solving, evidence-based practices, and police-community relations. Generally offered: Fall, Spring. Course Fee: STSP \$9.

CRJ 4443. Special Topics in Policing. (3-0) 3 Credit Hours.

Prerequisite: CRJ 3013 with a grade of "C-" or higher. Considers special topics in policing and crime prevention not ordinarily evaluated in depth 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. (Formerly titled "Special Topics in Policing and Crime Prevention.") Generally offered: Fall, Spring. Course Fee: STSP \$9.

CRJ 4453. Drugs and Crime. (3-0) 3 Credit Hours.

Prerequisite: CRJ 3013 with a grade of "C-" or higher. 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. Course Fee: STSP \$9.

CRJ 4463. Gender and Crime. (3-0) 3 Credit Hours.

Prerequisite: CRJ 3013 with a grade of "C-" or higher. 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.) Course Fee: STSP \$9.

CRJ 4603. Institutional Corrections. (3-0) 3 Credit Hours.

Prerequisite: CRJ 3013 with a grade of "C-" or higher. This course introduces students to theory and research in the areas of institutional corrections and penology. Topics include the history of the use of incarceration in the United States, the influence of sentencing philosophies and practices on incarceration, the organization and management of prisons, and critical issues related to prison staff and inmates. Course Fee: STSP \$9.

CRJ 4633. Constitutional Criminal Procedure. (3-0) 3 Credit Hours.

Prerequisite: CRJ 3013 with a grade of "C-" or higher. 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. Generally offered: Fall, Spring. Course Fee: STSP \$9.

CRJ 4653. White Collar Crime. (3-0) 3 Credit Hours.

Prerequisite: CRJ 3013 with a grade of "C-" or higher. 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. Generally offered: Fall. Course Fee: STSP \$9.

CRJ 4663. Special Topics in Corrections. (3-0) 3 Credit Hours.

Prerequisite: CRJ 3013 with a grade of "C-" or higher. Considers special topics in corrections not ordinarily evaluated in depth 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. (Formerly titled "Special Topics in Corrections and Juvenile Justice.") Generally offered: Spring. Course Fee: STSP \$9.

CRJ 4703. Life Course Criminology. (3-0) 3 Credit Hours.

Prerequisite: CRJ 3013 with a grade of "C-" or higher. Life course criminology has developed into a leading theoretical framework for studying criminal offenders. This course provides an overview of age-graded explanations of antisocial conduct and cutting-edge empirical research on the causes of antisocial behavior during various developmental periods including childhood, adolescence, and adulthood. The role of both biology and the environment in explaining antisocial conduct over the lifespan is emphasized, and the implications of this research for developing age-appropriate interventions are explored. Course Fee: STSP \$9.

CRJ 4833. Violent Crime. (3-0) 3 Credit Hours.

Prerequisite: CRJ 3013 with a grade of "C-" or higher. 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. Generally offered: Spring. Course Fee: STSP \$9.

CRJ 4843. Study Abroad: International Criminal Justice. (3-0) 3 Credit Hours.

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. Course Fee: STSP \$9.

CRJ 4863. Special Topics in Courts. (3-0) 3 Credit Hours.

Prerequisite: CRJ 3013 with a grade of "C-" or higher. Considers special topics in courts and adjudication not ordinarily evaluated in depth 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 (Formerly titled "Special Topics in Legal Issues and Adjudication.") Generally offered: Fall. Course Fee: STSP \$9.

CRJ 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: CRJ 3013 with a grade of "C-" or higher and 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 tenured/tenure-track faculty member (this course may not be taken under the direction of an Adjunct Instructor). Students are encouraged to approach this course with a specific topic in mind. 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. Course Fee: STSP \$6.

CRJ 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: CRJ 3013 with a grade of "C-" or higher and 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 tenured/tenure-track faculty member (this course may not be taken under the direction of an Adjunct Instructor). Students are encouraged to approach this course with a specific topic in mind. 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. Course Fee: STSP \$9.

CRJ 4933. Internship in Criminal Justice. (0-0) 3 Credit Hours.

Prerequisites: CRJ 1113, CRJ 2153, and CRJ 3013; consent of academic advisor and Internship Coordinator. Students are encouraged to complete at least 90 semester credit hours prior to enrolling in this course. 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. Generally offered: Fall, Spring, Summer. Course Fees: CJIF \$65; STSP \$9.

CRJ 4953. Special Topics in Criminal Justice/Criminology. (3-0) 3 Credit Hours.

Prerequisite: CRJ 3013 with a grade of "C-" or higher. 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. (Formerly titled "Special Studies in Criminal Justice.") Generally offered: Spring, Summer. Course Fee: STSP \$9.

CRJ 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisite: CRJ 3013 with a grade of "C-" or higher. 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. Course Fee: STSP \$9.

Curriculum and Instruction (C&I)

Curriculum and Instruction (C&I) Courses

C&I 4203. Models of Teaching in the Content Areas of the Secondary School. (3-0) 3 Credit Hours.

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 Clinical Teaching: Grades 7–12. This course must be completed with a grade of "C-" or better for it to serve as a prerequisite for C&I 4716 Clinical Teaching: All Level EC–12. Field experience. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

C&I 4213. Approaches to Teaching Music. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

C&I 4223. Models of Teaching in the Content Areas of the Secondary School—Mathematics. (3-0) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, EDP 3203, and EDU 2103. Prior or concurrent enrollment in EDP 4203 is required. Study of curricular, instructional, and management approaches to mathematics in the secondary schools. Emphasis on developing instructional and curricular strategies that are effective in diverse teaching contexts. Course will address special population of students, application of instructional media, technology, and classroom management. Not offered in the summer. Restricted course; advisor code required for registration. Field experience. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

C&I 4233. Models of Teaching in the Content Areas of the Secondary School—Social Studies. (3-0) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, EDP 3203, and EDU 2103. Prior or concurrent enrollment in EDP 4203 is required. Study of curricular, instructional, and management approaches to social studies in the secondary schools. Emphasis on developing instructional and curricular strategies that are effective in diverse teaching contexts. Course will address special population of students, application of instructional media, technology, and classroom management. 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 Clinical Teaching: Grades 7-12. Field experience. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

C&I 4243. Models of Teaching in the Content Areas of the Secondary School—Science. (3-0) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, EDP 3203, and EDU 2103. Prior or concurrent enrollment in EDP 4203 is required. Study of curricular, instructional, and management approaches to mathematics in the secondary schools. Emphasis on developing instructional and curricular strategies that are effective in diverse teaching contexts. Course will address special population of students, application of instructional media, technology, and classroom management. 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 Clinical Teaching: Grades 7-12. Field experience. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

C&I 4253. Models of Teaching in the Content Areas of the Secondary School—English Language Arts/Foreign Language/Art. (3-0) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, EDP 3203, and EDU 2103. Prior or concurrent enrollment in EDP 4203 is required. Study of curricular, instructional, and management approaches to English Language Arts and Foreign Languages in the secondary schools. Emphasis on developing instructional and curricular strategies that are effective in diverse teaching contexts. Course will address special population of students, application of instructional media, technology, and classroom management. 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 Clinical Teaching: Grades 7-12. This course must be completed with a grade of "C-" or better for it to serve as a prerequisite for C&I 4716 Clinical Teaching: All Level EC-12. Field experience. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

C&I 4263. Models of Teaching in the Content Areas of the Secondary School—Music. (3-0) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, EDP 3203, and EDU 2103. Study of curricular, instructional, and management approaches to music in the secondary schools. Emphasis on developing instructional and curricular strategies that are effective in diverse teaching contexts. Course will address special population of students, application of instructional media, technology, and classroom management. Not offered in the summer. Restricted course; advisor code required for registration. Course may be offered in multiple sections to accommodate choral and instrumental music instruction. This course must be completed with a grade of "C-" or better for it to serve as a prerequisite for C&I 4716 Clinical Teaching: All Level EC-12. Field experience. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

C&I 4303. Approaches to Teaching Social Studies Incorporating Language Arts and Fine Arts EC–6. (2-2) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, C&I 4353, C&I 4403, ECE 4203, and LTED 3823. Concurrent enrollment in ECE 4143 and LTED 4833 is required. May not be taken concurrently with C&I 4353, C&I 4403, ECE 4203 or LTED 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 Clinical Teaching: Early Childhood–Grade 6. Restricted course; advisor code required for registration. Field experience required. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

C&I 4353. Approaches to Teaching Science EC–6. (2-2) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, ECE 3143, ECE 3313, and ECE 3603. Concurrent enrollment in C&I 4403, ECE 4203 and LTED 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 Clinical 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.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

C&I 4403. Approaches to Teaching Mathematics EC–6. (2-2) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, ECE 3143, ECE 3313, and ECE 3603. Concurrent enrollment in C&I 4353, ECE 4203 and LTED 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 Clinical 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.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

C&I 4433. Approaches to Teaching Science—Grades 4–8. (3-0) 3 Credit Hours.

Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4443, C&I 4603, C&I 4623, and LTED 3533 in semester prior to clinical 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 Clinical Teaching: Grades 4–8. (Formerly C&I 4413. Credit cannot be earned for more than one of the following: BBL 4433, C&I 4413, or C&I 4433.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

C&I 4443. Approaches to Teaching Mathematics—Grades 4–8. (3-0) 3 Credit Hours.

Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4433, C&I 4603, C&I 4623 and LTED 3533 in semester prior to clinical 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 Clinical Teaching: Grades 4–8. (Formerly C&I 4423. Credit cannot be earned for more than one of the following: BBL 4443, C&I 4423, or C&I 4443.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

C&I 4543. Approaches to Teaching Social Studies—Grades 4–8. (3-0) 3 Credit Hours.

Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4553, C&I 4603, C&I 4623, and LTED 3533 in semester prior to clinical teaching. This course emphasizes student-centered curricula that meet the needs of diverse students in grades 4–8. Preservice teachers examine models of teaching and learning to develop the knowledge, values, and experiential bases necessary for effective teaching. Students will demonstrate proficiency by creating 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 Clinical Teaching: Grades 4–8. (Formerly C&I 4513. Credit cannot be earned for both C&I 4543 and C&I 4513.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

C&I 4553. Approaches to Service-Learning in Social Studies—Grades 4–8. (3-0) 3 Credit Hours.

Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4443, C&I 4543, C&I 4603, C&I 4623, and LTED 3533 in semester prior to clinical 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 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 Clinical Teaching: Grades 4–8. (Formerly C&I 4523. Credit cannot be earned for both C&I 4553 and C&I 4523.) Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

C&I 4603. Classroom Management Strategies—Grades 4–8. (3-0) 3 Credit Hours.

Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4433, C&I 4443, C&I 4623, and LTED 3533 in semester prior to clinical teaching for Grades 4–8 Mathematics/Science Certification Option; Concurrent enrollment in C&I 4543, C&I 4553, C&I 4623, and LTED 3533 for Grades 4–8 Language Arts/Reading/Social Studies Certification Option Concurrent enrollment in C&I 4433, C&I 4443, C&I 4543, C&I 4623 for Grades 4–8 Generalist Certification Option. Preservice teachers will design developmentally appropriate mathematics and science curriculum, instruction, and assessment. Preservice teachers will also identify 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 Clinical Teaching: Grades 4–8. (Credit cannot be earned for both C&I 4603 and BBL 4603.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

C&I 4616. Clinical Teaching: Early Childhood—Grade 6. (0-0) 6 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program; completion of all requirements for admission to the EC–6 clinical 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, LTED 3823, and LTED 4833. A grade of "B-" or better in C&I 4303, C&I 4353, C&I 4403, LTED 3823, and LTED 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 clinical 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 clinical teaching semester, completion of 18 semester credit hours of Professional Education: BBL 4033, BBL 4063, BBL 4073, BBL 4353, BBL 4403, and LTED 3823. Full semester of full-day clinical 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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$30.

C&I 4623. Applied Teaching: Grades 4–8. (3-0) 3 Credit Hours.

Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4433, C&I 4443, C&I 4603, and LTED 3533 for Grades 4–8 Mathematics/Science Certification Option; C&I 4543, C&I 4553, C&I 4603, and LTED 3533 for Grades 4–8 Language Arts/Reading/Social Studies Certification Option; C&I 4433, C&I 4443, C&I 4543, C&I 4603, and LTED 3533 for Grades 4–8 Generalist Certification Option. This field experience course provides preservice teachers the opportunity to work with students in grades 4–8 in school settings under the supervision of a university instructor. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for C&I 4626 Clinical Teaching: Grades 4–8. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

C&I 4626. Clinical Teaching: Grades 4–8. (0-0) 6 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program; completion of all requirements to the 4–8 clinical teaching semester, including all relevant TExES examinations, and completion of 21 semester credit hours: C&I 4603, EDP 3303, ESL 3063, MAT 1023, LTED 3533, LTED 3633, LTED 3803. A grade of "C-" or better is required for the clinical teaching course to be recommended for teacher certification. Individuals must apply to the director of clinical teaching one semester in advance. 4–8 Generalist students: A grade of "B-" or better is required for LTED 3533. A grade of "C-" or better is required for 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, LTED 3523, and LTED 3533. 4–8 Language Arts, Reading, and Social Studies students: The following courses completed with a grade of "B-" or better: C&I 4543, C&I 4553, LTED 3523, LTED 3533, LTED 3633. 4–8 ESL students: Completion of a minimum of 15 semester credit hours of the ESL specialization; and completion of 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 clinical 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 clinical 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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$30.

C&I 4646. Clinical Teaching: Grades 7–12. (0-0) 6 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program and the clinical teaching semester, and completion of C&I 4203, EDP 3203, EDP 4203, and LTED 3773 (English majors must take LTED 3683 instead of LTED 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 clinical teaching course to be recommended for teacher certification. Individuals must apply to the director of clinical teaching one semester in advance. Full semester of full-day clinical teaching in grades 7–12. 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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$30.

C&I 4716. Clinical Teaching: All Level EC–12. (0-0) 6 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program; completion of all requirements for the All-Level clinical 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 clinical 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 clinical 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 clinical 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 clinical teaching course to be recommended for teacher certification. All Level Music students: Completion of C&I 4203, C&I 4213, EDP 3203, and LTED 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 clinical teaching course to be recommended for teacher certification. All Level Art students: Completion of all requirements for admission to the clinical teaching semester, and C&I 4203, EDU 2103, EDP 3203 or EDP 3303, EDP 4203, and LTED 3523 or LTED 3773. A grade of "B-" or better in C&I 4203. A grade of "C-" or better is required for the clinical teaching course to be recommended for teacher certification. Languages other than English students: Completion of all requirements for admission to the clinical teaching semester, and C&I 4203, EDP 3203, EDP 4203, and LTED 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 clinical teaching course to be recommended for teacher certification. All courses for degree/certification plan must be completed prior to clinical teaching. Full semester of full-day clinical teaching in an elementary or middle school setting and in a high school setting (grades 7–12) 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 clinical teaching requirements for the All-Level certificate. Seminars explore issues in teaching practice. A grade of "C-" or better is required for the clinical teaching course to be recommended for teacher certification. Individuals must apply to the director of clinical teaching one semester in advance. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$30.

C&I 4911. Independent Study. (0-0) 1 Credit Hour.

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. Course Fee: STSH \$5.

C&I 4912. Independent Study. (0-0) 2 Credit Hours.

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. Course Fee: STSH \$10.

C&I 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fee: STSH \$15.

C&I 4923. Internship in Education. (0-0) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program; a bachelor's degree; completion of all coursework requirements for the certification program; consent of the Interdisciplinary Education Advising and Certification Center; and consent of the director of clinical 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. Course Fee: STSH \$15.

C&I 4926. Internship in Education. (0-0) 6 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program; a bachelor's degree; completion of all coursework requirements for the certification program; consent of the Interdisciplinary Education Advising and Certification Center; and consent of the director of clinical 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. Course Fees: LRH1 \$10; STF1 \$57; STSH \$30.

Dance (DAN)

Dance (DAN) Courses

DAN 1013. Ballet I. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fee: MC01 \$25.

DAN 1113. Introduction to Modern Dance. (3-0) 3 Credit Hours.

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. (Formerly MUS 2763. Credit cannot be earned for both DAN 1113 and MUS 2763.) Generally offered: Fall, Spring. Course Fee: MC01 \$25.

DAN 2003. Introduction to Dance. (3-0) 3 Credit Hours. (TCCN = DANC 2303)

A survey of various dance styles, including ballet, modern, social, and world dance. Designed to provide the opportunity for students to increase their awareness of dance and how dance informs cultural values. May be applied toward the Core Curriculum requirement in Creative Arts. Generally offered: Fall. Course Fees: LRC1 \$12; LRLF \$10; MC01 \$25.

DAN 2013. Ballet II. (3-0) 3 Credit Hours.

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 centre floor work. May be repeated for credit. Generally offered: Fall, Spring. Course Fee: MC01 \$25.

DAN 2113. Modern Dance II. (3-0) 3 Credit Hours.

An intermediate course designed for students who have had at least one year of modern dance experience. Students will refine modern dance technique through floor and centre work, and by studying various movements and styles relevant to current modern dance technique. Generally offered: Spring. Course Fee: MC01 \$25.

DAN 2213. Jazz and Musical Theater Dance. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring. Course Fee: MC01 \$25.

DAN 2783. Topics in Dance. (3-0) 3 Credit Hours.

Studio dance instruction and survey focused on a genre of dance. May be repeated for credit when topics vary. (Formerly MUS 2783. Credit cannot be earned for both DAN 2783 and MUS 2783.) Generally offered: Fall, Spring. Course Fee: MC01 \$25.

DAN 3013. Ballet III. (3-0) 3 Credit Hours.

An advanced course designed for students who have had at least two years of ballet training. Further refinement of technique, alignment, strength, balance, and flexibility will be achieved through barre and centre floor work. Generally offered: Fall. Course Fee: MC01 \$25.

DAN 3103. History of Dance. (3-0) 3 Credit Hours.

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. (Formerly DAN 2103. Credit cannot be earned for both DAN 2103 and DAN 3103.) Generally offered: Spring.

DAN 3113. Modern Dance III. (3-0) 3 Credit Hours.

An advanced course designed for students who have had at least two years of modern dance experience. Further refinement of technique, strength, balance, and flexibility will be achieved through floor and centre work. Generally offered: Spring. Course Fee: MC01 \$25.

DAN 3801. UTSA Auxiliaries. (0-5) 1 Credit Hour.

Rehearse and perform choreography and dances for appearances at public events on and off campus, particularly as related to the UTSA Athletic Band. Participation at all performances is required in addition to regularly scheduled rehearsals. Audition required. May be repeated for credit. Course Fee: MC01 \$25.

Demography (DEM)

Demography (DEM) Courses

DEM 4963. Social Demography and Public Policy. (3-0) 3 Credit Hours.

This course will cover the basic areas of demography (fertility, mortality, and migration—both internal and international). Students will also be exposed to methods of demographic research to carry out demographic research projects. As part of the course, students will conduct demographic analysis using real data. A strong focus of the course will be discussing the implications for demographic analysis in terms of local, regional and national policy discussions. Course Fee: STSP \$9.

Early Childhood (ECE)

Early Childhood (ECE) Courses

ECE 2013. Introduction to Multicultural Early Childhood Education. (3-0) 3 Credit Hours.

Examination of the history of Early Childhood Education, curriculum, and current issues with a special emphasis on culturally and linguistically diverse families and young children. Field experience required. Course Fees: LRH1 \$10; STSH \$15.

ECE 2123. Diversity in Early Childhood. (3-0) 3 Credit Hours.

Study of diversity within early childhood contexts including culture, language, traditions, beliefs, family structure, socioeconomic background, ability, and national origin within the US and the world. (Same as BBL 2123. Credit cannot be earned for both ECE 2123 and BBL 2123.) Course Fees: LRH1 \$10; STSH \$15.

ECE 3133. Programs and Policies in Early Childhood Education. (3-0) 3 Credit Hours.

This course is a survey of historical, philosophical, and sociocultural foundations of early childhood programs and policies. Students will examine past and current trends in early childhood education and their impact on early childhood practices and policies. A variety of early childhood programs-national and international, traditional and culturally responsive, federal and state-funded-will be examined. Early childhood policies and their impact on teachers and students will be discussed at length. Generally offered: Fall. Course Fees: LRH1 \$10; STSH \$15.

ECE 3143. Child Growth and Development. (3-0) 3 Credit Hours.

Concurrent enrollment in ECE 3313, ECE 3603, and LTED 3513 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.) Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

ECE 3153. Movement, Music and Health in Early Childhood. (3-0) 3 Credit Hours.

Emphasis on creative movement through the senses focusing on appropriate motor development skills (fine and gross). Examination of physical development to increase health awareness through culturally relevant music. Field experience required. Course Fees: LRH1 \$10; STSH \$15.

ECE 3313. Play, Creativity, and Learning. (3-0) 3 Credit Hours.

Concurrent enrollment in ECE 3143, ECE 3603, and LTED 3513 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. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

ECE 3603. Language and Literacy Acquisition. (3-0) 3 Credit Hours.

Concurrent enrollment in ECE 3143, ECE 3313, and LTED 3513 is required. Exploration of theories of first and second language development in young children with implications for the acquisition of early literacy concepts for all children. Examines ways that educators can enhance language and literacy development for first and second language learners. Introduces appropriate, research-based approaches to teach early reading and writing for culturally and linguistically diverse children. Field experience required. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

ECE 4103. Guidance of Young Children in Groups. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: LRH1 \$10; STSH \$15.

ECE 4123. Family and Community Resources in Early Childhood. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: LRH1 \$10; STSH \$15.

ECE 4143. Principles and Practices of Differentiated Education EC-6. (3-0) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, completion of C&I 4353, C&I 4403, ECE 4203, and LTED 3823. Concurrent enrollment in C&I 4303 and LTED 4833 is required. May not be taken concurrently with C&I 4353, C&I 4403, ECE 4203, and LTED 3823. Study of cultural and responsive programming for linguistically diverse groups of children representing a wide range of abilities. Identification of theoretical perspectives and principles for differentiated education in early childhood and elementary. Emphasis on effective instructional planning, learning environments, and teaching practices to accommodate individuals in group settings. Field experiences may be required. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

ECE 4153. Culturally Appropriate Assessment for Infants and Young Children. (3-0) 3 Credit Hours.

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. Course Fees: LRH1 \$10; STSH \$15.

ECE 4203. Assessment and Evaluation in EC–6. (3-0) 3 Credit Hours.

Prerequisites: ECE 3143, ECE 3603 and admission to Teacher Certification Program. Concurrent enrollment in C&I 4403 or C&I 4353 and LTED 3823 or LTED 3513 is recommended. Principles of designing and using assessment and evaluation techniques that are culturally fair, intellectually sound, reliable, dependable, and content-valid for first and second language learners. Examination of standardized, authentic, and performance-based assessments. Review of strategies for using assessment data to inform instructional planning for culturally and linguistically diverse children. Exploration of matching assessment techniques to individual children and learning situations. Field-based experiences required. Generally offered: Fall, Spring. Course Fees: LEA1 \$15; LRH1 \$10; STF1 \$57; STSH \$15.

ECE 4253. STEM in Early Childhood Contexts. (3-0) 3 Credit Hours.

This course focuses on the integration of science, technology, engineering, and mathematics (STEM) in early childhood settings. Participants will examine the design of developmentally appropriate methodologies to engage young children in interdisciplinary learning in authentic settings. Course Fees: LRH1 \$10; STSH \$15.

ECE 4342. Internship in Multicultural Early Childhood Development I - Infants. (0-0) 2 Credit Hours.

Prerequisite: Completion of required courses in the major and the minor. Students engage in an internship experience where the focus is on the development and growth of infants. Emphasis is on experiences that benefit infants and families in different contexts. There is a study abroad option. Course Fee: STSH \$10.

ECE 4412. Internship in Multicultural Early Childhood Development II - Toddlers. (0-0) 2 Credit Hours.

Prerequisite: Completion of required courses in the major and the minor. Students engage in an internship experience where the focus is on the development and growth of toddlers. Emphasis is on experiences that benefit toddlers and families in different contexts. There is a study abroad option. Course Fee: STSH \$10.

ECE 4552. Internship in Multicultural Early Childhood Development III - Preschool. (0-0) 2 Credit Hours.

Students engage in an internship experience where the focus is on the development and growth of preschoolers. Emphasis is on experiences that benefit preschoolers and families in different contexts. There is a study abroad option. Course Fee: STSH \$10.

ECE 4653. Leadership and Management of Early Childhood Settings. (3-0) 3 Credit Hours.

This course will focus on the leadership aspects related to sustaining high-quality Early Childhood Education programs. Developmentally Appropriate Practice and growth and development practices for young children will be explored. Special attention will be given to effective ECE practices in culturally and linguistically diverse settings. Course Fee: STSH \$15.

ECE 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fee: STSH \$15.

Economics (ECO)

Note: Beginning Fall 2019, course fees will be replaced with differential tuition at a rate of \$42 per semester credit hour for upper-division College of Business courses.

Economics (ECO) Courses

ECO 2003. Economic Principles and Issues. (3-0) 3 Credit Hours. (TCCN = ECON 1301)

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. May be applied toward the core curriculum requirement in Social and Behavioral Sciences. (Formerly titled "Introduction to Political Economy.") Generally offered: Fall, Spring, Summer. Course Fees: BISP \$10; BTSI \$15; LRB1 \$15; LRC1 \$12.

ECO 2013. Introductory Macroeconomics. (3-0) 3 Credit Hours. (TCCN = ECON 2301)

Prerequisite: ECO 2023. 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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$10; BTSI \$15; LRB1 \$15.

ECO 2023. Introductory Microeconomics. (3-0) 3 Credit Hours. (TCCN = ECON 2302)

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. May be applied toward the core curriculum requirement in Social and Behavioral Sciences. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$10; BTSI \$15; LRB1 \$15; LRC1 \$12.

ECO 3013. Intermediate Microeconomics. (3-0) 3 Credit Hours.

Prerequisites: Completion of ECO 2013, ECO 2023, and MAT 1133, or their equivalents, with a grade of "C-" or better. The study of price determination in and the welfare implications of various market structures through the development of the preference theory of consumer behavior and the profit maximization theory of producer behavior. The role and welfare impact of externalities and of government intervention are also examined. (Formerly titled "Theory of Price." Credit cannot be earned for both Theory of Price and Intermediate Microeconomics). Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 3033. Economics of Managerial Decisions. (3-0) 3 Credit Hours.

Prerequisites: Completion of ECO 2013, ECO 2023, and MAT 1133, 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. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 3053. Intermediate Macroeconomics. (3-0) 3 Credit Hours.

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 such as national income, output, employment, interest rates, the price level, and exchange rates. The roles of monetary and fiscal policy and their relation to income and employment, short-term income fluctuations, and long-term growth are also explored. (Formerly titled "Aggregate Economics." Credit cannot be earned for both Aggregate Economics and Intermediate Macroeconomics). Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 3113. Introduction to Mathematical Economics. (3-0) 3 Credit Hours.

Prerequisites: Completion of ECO 2013, ECO 2023, and MAT 1133, or their equivalents, with a grade of "C-" or better, or consent of instructor, Department Chair, and Dean of the College. 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. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 3123. Introduction to Econometrics and Business Forecasting. (3-0) 3 Credit Hours.

Prerequisites: Completion of ECO 3113, MAT 1133, and STA 1053 or MS 1023, or their equivalents, and with a grade of "C-" or better, or consent of instructor, Department Chair, and Dean of the College. 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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 3163. Evolution of Economic Thought. (3-0) 3 Credit Hours.

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, Department Chair, and Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 3183. Economic History of the United States. (3-0) 3 Credit Hours.

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, Department Chair, and Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 3193. International Economics. (3-0) 3 Credit Hours.

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, Department Chair, and Dean of the College. 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.") Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 3213. Economics of Antitrust and Regulation. (3-0) 3 Credit Hours.

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, Department Chair, and Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 3233. Health Economics and Policy. (3-0) 3 Credit Hours.

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, Department Chair, and Dean of the College. The course examines and analyzes the ever changing role of healthcare and the impact on the economy and society. Social issues with respect to healthcare in the U.S. and world markets are analyzed using economics principles. Current healthcare related topics are addressed. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 3253. Economics of Public and Social Issues. (3-0) 3 Credit Hours.

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, Department Chair, and Dean of the College. A seminar on applying economic reasoning and models to a wide variety of public, ethical, and social issues. Uses advanced techniques in political economy. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 3263. Industrial Organization. (3-0) 3 Credit Hours.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 3273. Introduction to Public Sector Economics. (3-0) 3 Credit Hours.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 3283. Labor Economics. (3-0) 3 Credit Hours.

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, Department Chair, and Dean of the College. Theories of wages and employment determination; U.S. labor history, comparative labor movements, and contemporary labor problems. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 3313. Money and Banking. (3-0) 3 Credit Hours.

Prerequisite: ECO 2013 or the equivalent. A study of money, the financial system, interest rates, commercial and central banking, monetary theory and policy implementation by the Federal Reserve, and resultant economic impacts both nationally and internationally. (Same as FIN 3313. Credit cannot be earned for both ECO 3313 and FIN 3313.) Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 4233. Behavioral Economics and Finance. (3-0) 3 Credit Hours.

Prerequisites: Completion of ECO 2013, ECO 2023, and MAT 1133, or their equivalents, with a grade of "C-" or better, or consent of instructor, Department Chair, and Dean of the College. This course introduces the behavioral concepts and theories. Topics include prospect theory, biases in probabilistic judgment, and nudge theory. Issues on how to apply these behavioral concepts to real life, focusing on improving decision making in health, financial wealth, and happiness are addressed. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 4273. Environmental and Resource Economics. (3-0) 3 Credit Hours.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 4303. Economics of Developing Countries. (3-0) 3 Credit Hours.

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, Department Chair, and Dean of the College. 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.") Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 4543. Economics of School System Reform. (3-0) 3 Credit Hours.

Prerequisite: Completion of one of the following: ECO 2003, ECO 2023, or the equivalent, with a grade of "C-" or better, or consent of instructor, Department Chair, and Dean of the College. Nontechnical applications of basic economic principles to issues facing school systems at the primary and secondary levels worldwide; including background on the evolution of current systems, analysis of critical policy issues such as inefficiencies and inequities; examination of scholars' and policymakers' proposals for transformative reform; and consideration of opportunities for research on the issues. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: A 3.0 College of Business grade point average, 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. Course Fees: BISP \$20; BTSI \$15.

ECO 4933. Internship in Economics. (0-0) 3 Credit Hours.

Prerequisites: 12 semester credit hours of upper-division economics, a 2.5 UTSA grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

ECO 4951. Special Studies in Economics. (1-0) 1 Credit Hour.

Prerequisite: Consent of instructor, Department Chair, and Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ECO 4953. Special Studies in Economics. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor, Department Chair, and Dean of the College. 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. Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

Education (EDU)

Education (EDU) Courses

EDU 2103. Social Foundations for Education in a Diverse U.S. Society. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

EDU 4911. Independent Study. (0-0) 1 Credit Hour.

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. Course Fee: STSH \$5.

EDU 4912. Independent Study. (0-0) 2 Credit Hours.

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. Course Fee: STSH \$10.

EDU 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fee: STSH \$15.

EDU 4953. Special Studies in Education. (3-0) 3 Credit Hours.

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. Course Fee: STSH \$15.

Educational Leadership (EDL)

Educational Leadership (EDL) Courses

EDL 3003. Introduction to Leadership. (3-0) 3 Credit Hours.

This seminar course begins with the premise that everyone has unique and powerful potential as a leader, and that we can learn leadership and enhance our abilities as leaders through a focused inquiry that connects theory, experience and reflection. Students will identify and further develop a personal foundation of knowledge, skills and attitudes related to leadership. Thoughtful effort will yield worthwhile and serviceable resources that will be of substantive value, enhancing the individual's effectiveness in future. This course is designed to meet students where they are coming from, starting from what they know, value and do as leaders, and then move students forward by challenging their perspectives and assumptions and supporting their development as an engaged, ethical leaders who make a positive difference by empowering others. Approaches to teaching and learning will include the following: Abstract conceptualization via lectures, writing and visual assignments; Active experimentation via case studies and projects; Concrete experiences in the form of readings and experiential activities; and, Reflective observations via discussion and journaling. Course Fees: LRH1 \$10; STSH \$15.

EDL 4953. Special Studies in Educational Leadership. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: LRH1 \$10; STSH \$15.

Educational Psychology (EDP)

Educational Psychology (EDP) Courses

EDP 2113. Theories of Learning. (3-0) 3 Credit Hours.

Prerequisite: Sophomore standing. This course provides a current and comprehensive overview of theory and research related to human learning, with emphasis on how these theories apply to the learning and development of children. Topics include behaviorism, social cognitive theory, information processing, and motivation as these relate to management of a learning environment. In addition to the major learning theories, the course will include an overview of developmental psychopathology with emphasis on the interactions among biological and environmental risk factors (e.g., child abuse, neglect, teratogenic effects) on children's learning and development. (Formerly titled "Development in the Elementary and Middle School Child.") Course Fees: LRH1 \$10; STSH \$15.

EDP 3203. Learning and Development in the Secondary School Adolescent. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

EDP 3303. Learning and Development in the Middle School Context (Grades 4–8). (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

EDP 3673. Introduction to Behavior Analysis. (3-0) 3 Credit Hours.

This course will provide students with the opportunity to acquire knowledge about principles and procedures of behavior analysis and behavior management. As an introductory course to behavior analysis, special attention will be paid to philosophy, terminology, and methods. Class fulfills coursework requirement for Registered Behavioral Technician (RBT) certification. Course Fees: LRH1 \$10; STSH \$15.

EDP 3683. Behavior Analytic Assessment and Evaluation. (3-0) 3 Credit Hours.

Prerequisite: EDP 3673. Course examines behavioral learning theory and operant conditioning principles; overview of behavioral assessment strategies with an emphasis on conducting interviews and direct observations of behaviors; functional behavior assessment and applied behavior analysis as systematic assessment-intervention approaches to behavior modification; and specific behavior intervention approaches for use with children and adolescents. Course Fees: LRH1 \$10; STSH \$15.

EDP 3693. Behavior Analytic Intervention and Treatment. (3-0) 3 Credit Hours.

Prerequisites: EDP 3673 and EDP 3683. This course will provide students with the opportunity to acquire knowledge about evidenced-based instructional practices based on the science of behavior analysis. Students will have the opportunity to learn to design appropriate function-based interventions, learn how to apply those interventions, and make decisions based on patient data to inform future interventions. Course Fees: LRH1 \$10; STSH \$15.

EDP 4203. Assessment and Evaluation. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

EDP 4683. Advanced Behavior Analysis. (3-0) 3 Credit Hours.

Prerequisites: EDP 3673, EDP 3683, and EDP 3693. Advanced applications of the theory, principles, processes, concepts, and terminology of behavior analysis, and the learning principles on which behavior analysis is based within applied medical and clinical settings. In this course, students learn how to design and evaluate experimental interventions. Selection of intervention outcomes based on functional behavioral assessments are emphasized. Students learn to make recommendations to clients detailing all contingencies of targeted behavior change. Ethical considerations in the use of behavioral interventions will also be discussed. Course Fees: LRH1 \$10; STSH \$15.

EDP 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fee: STSH \$15.

EDP 4953. Special Studies in Educational Psychology. (3-0) 3 Credit Hours.

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. Course Fees: LRH1 \$10; STSH \$15.

Electrical Engineering (EE)

Electrical Engineering (EE) Courses

EE 1322. Introduction to Electrical and Computer Engineering. (2-1) 2 Credit Hours. (TCCN = ENGR 1201)

Prerequisite: MAT 1073. An introduction to the electrical and computer engineering profession with emphasis on technical communication, team-based engineering design, professional and ethical responsibilities, contemporary issues, and software tools. One hour of recitation session per week. (Formerly EE 1323. Credit cannot be earned for both EE 1323 and EE 1322.) Course Fees: LRE1 \$20; STSE \$20.

EE 2213. Electric Circuits and Electronics. (3-0) 3 Credit Hours. (TCCN = ENGR 2305)

Prerequisites: PHY 1963 and concurrent enrollment in, or completion of, EGR 2323. Principles of electrical circuits and systems. Basic circuit elements (resistance, inductance, mutual inductance, capacitance, independent and dependent controlled voltage, and current sources). Topology of electrical networks; Kirchhoff's laws; node and mesh analysis; DC circuit analysis; operational amplifiers; transient and sinusoidal steady-state analysis; AC circuit analysis; first- and second-order circuits; application of Laplace transforms to the analysis of RLC circuits. (Formerly EE 2214. Credit cannot be earned for both EE 2213 and EE 2214.) Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

EE 2423. Network Theory. (3-1) 3 Credit Hours.

Prerequisites: EE 1322 and completion of or concurrent enrollment in EGR 2323 and PHY 1963. 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. Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

EE 2511. Logic Design Laboratory. (1-2) 1 Credit Hour.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$10.

EE 2513. Logic Design. (3-1) 3 Credit Hours.

Prerequisites: EE 1322 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. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

EE 3113. Electrical and Computer Engineering Laboratory I. (1-6) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: L001 \$30; LRE1 \$20; STSE \$30.

EE 3213. Electromagnetic Engineering. (3-1) 3 Credit Hours.

Prerequisites: EGR 3323 and PHY 1963. 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. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

EE 3223. C++ and Data Structures. (3-1) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: LRE1 \$20; STSE \$30.

EE 3233. Systems Programming for Engineers. (3-1) 3 Credit Hours.

Prerequisite: EE 3223. Introduction to Linux, scripting languages including shell scripting, Perl, etc., programming in Python, software version control systems such as SVN and Git, and software testing tools. One hour of problem solving recitation per week. Course Fees: LRE1 \$20; STSE \$30.

EE 3313. Electronic Circuits I. (3-1) 3 Credit Hours.

Prerequisites: EE 2423 and PHY 1963. 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. Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

EE 3323. Electronic Devices. (3-0) 3 Credit Hours.

Prerequisites: CHE 1103 and EE 2423. 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, photodetectors and optoelectronic devices. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

EE 3413. Analysis and Design of Control Systems. (3-1) 3 Credit Hours.

Prerequisites: EE 3423 and EGR 2213 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. Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

EE 3423. Mathematics in Signals and Systems. (3-1) 3 Credit Hours.

Prerequisites: EE 2423 and EGR 2323. Basic concepts, mathematical representation of signals and systems, graphs of functions, elements of complex numbers, partial fraction expansion, properties of basic functions, including sinusoidal and complex exponential signals, phasors, time and amplitude transformations of signals, properties of signals and classification of systems, Dirac delta function, step function, convolution integral, impulse response, frequency response function for linear time invariant systems, differential-equation models, response to real sinusoidal signals, ideal filters, periodic functions and Fourier series, continuous-time Fourier transform, energy and power spectral density functions, Laplace transforms in linear system analysis, differential equations with constant coefficients, transfer functions and statevariable models. One hour of problem solving recitation per week. (Formerly EE 3424. Credit cannot be earned for both EE 3424 and EE 3423.) Course Fees: LRE1 \$20; STSE \$30.

EE 3463. Microcomputer Systems I. (3-1) 3 Credit Hours.

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. One hour of recitation per week. Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

EE 3513. Electromechanical Systems. (3-0) 3 Credit Hours.

Prerequisite: EGR 2213. Principles of electromechanical energy conversion; polyphase circuits; dynamic analysis and simulation of energy-transfer devices; and power devices. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

EE 3523. Discrete Signals and Systems. (3-0) 3 Credit Hours.

Prerequisite: EE 3423. Time and frequency characteristics of signals and systems, sampling, discrete-time convolution, and applications of discrete-time Fourier and Z-transforms to systems. MATLAB exercises. (Formerly titled "Signals and Systems II.") Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

EE 3533. Probability and Stochastic Processes. (3-0) 3 Credit Hours.

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. (Formerly titled: "Random Signals and Noise.") Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

EE 3563. Digital Systems Design. (2-3) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: LRE1 \$20; STSE \$30.

EE 4113. Electrical and Computer Engineering Laboratory II. (1-6) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: L001 \$30; LRE1 \$20; STSE \$30.

EE 4123. Power Engineering Laboratory. (1-4) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

EE 4243. Computer Organization and Architecture. (2-3) 3 Credit Hours.

Prerequisite: EE 3463. Design of advanced state machines and computer systems, and processor design using computer-assisted design and analysis tools. Generally offered: Spring. Course Fees: LRE1 \$20; STSE \$30.

EE 4313. Electronic Circuits II. (3-0) 3 Credit Hours.

Prerequisites: EE 3313 and concurrent enrollment in, or completion of, EE 3323. Multiple transistor circuits; feedback and frequency response analysis; operational amplifier analysis and design; and introduction to integrated circuit design and analysis. Design of analog and digital circuits; and use of SPICE to analyze complex circuits. Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

EE 4323. Dielectric and Optoelectronic Engineering Laboratory. (2-4) 3 Credit Hours.

Prerequisites: EE 3213, completion of or concurrent enrollment in EE 3323 for Topic 1. 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. Generally offered: Spring. Course Fees: LRE1 \$20; STSE \$30.

EE 4443. Discrete-Time and Computer-Controlled Systems. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: LRE1 \$20; STSE \$30.

EE 4513. Introduction to VLSI Design. (2-3) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: LRE1 \$20; STSE \$30.

EE 4523. Introduction to Micro and Nanotechnology. (2-3) 3 Credit Hours.

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.) Course Fees: LRE1 \$20; STSE \$30.

EE 4533. Principles of Microfabrication. (1-6) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

EE 4543. Advanced Topics in Micro and Nanotechnology. (3-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

EE 4553. VLSI Testing. (2-3) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

EE 4563. FPGA-Based System Design. (3-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

EE 4583. Microcomputer Systems II. (2-3) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: L001 \$20; LRE1 \$20; STSE \$30.

EE 4593. Embedded System Design. (3-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

EE 4613. Communication Systems. (3-0) 3 Credit Hours.

Prerequisites: EE 3423 and EE 3533. Basic theory and principles of modern analog and digital communication systems; signal and noise analysis, signal-to-noise ratio, and circuit implementations. Course Fees: LRE1 \$20; STSE \$30.

EE 4623. Digital Filtering. (3-0) 3 Credit Hours.

Prerequisite: EE 3423 and completion of or concurrent enrollment in EE 3463. Design and implementation of FIR and IIR filters, hardware, and software; and topics from adaptive filtering, neural networks. MATLAB exercises. Course Fees: LRE1 \$20; STSE \$30.

EE 4643. Digital Signal Processing. (3-0) 3 Credit Hours.

Prerequisites: Completion of or concurrent enrollment in EE 3523 and EE 3533. Transform techniques for discrete signal processing; discrete representation and analysis of digital filters and other topics; and A/D and D/A conversion and associated filtering techniques. Generally offered: Spring. Course Fees: LRE1 \$20; STSE \$30.

EE 4653. Digital Communications. (3-0) 3 Credit Hours.

Prerequisites: EE 3423 and 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. Course Fees: LRE1 \$20; STSE \$30.

EE 4663. Digital Image Processing. (3-0) 3 Credit Hours.

Prerequisite: EE 3523. Fundamentals and some practical applications of digital image processing. Topics include image formation, sampling, and quantization; image motion and detector noise; feature 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. Generally offered: Fall. Course Fees: LRE1 \$20; STSE \$30.

EE 4673. Data Communication and Networks. (2-3) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

EE 4683. Wireless Communications. (3-0) 3 Credit Hours.

Prerequisites: EE 3423 and EE 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. Course Fees: LRE1 \$20; STSE \$30.

EE 4693. Fiber Optic Communications. (3-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

EE 4723. Intelligent Robotics. (3-1) 3 Credit Hours.

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.) Generally offered: Spring. Course Fees: LRE1 \$20; STSE \$30.

EE 4733. Intelligent Control. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: LRE1 \$20; STSE \$30.

EE 4743. Embedded Control Systems. (2-3) 3 Credit Hours.

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. Course Fees: L001 \$20; LRE1 \$20; STSE \$30.

EE 4753. Analysis of Power Systems. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: LRE1 \$20; STSE \$30.

EE 4763. Power Electronics. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: LRE1 \$20; STSE \$30.

EE 4773. Electric Drives. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: LRE1 \$20; STSE \$30.

EE 4812. Electrical Engineering Design I. (2-1) 2 Credit Hours.

Prerequisites: EE 4313 and concurrent enrollment in, or completion of, 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. One hour of problem solving recitation per week. (Formerly EE 4811. Credit cannot be earned for both EE 4812 and EE 4811.) Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$20.

EE 4813. Electrical Engineering Design II. (2-3) 3 Credit Hours.

Prerequisites: EE 4113 and EE 4812. 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. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

EE 4911. Independent Study. (0-0) 1 Credit Hour.

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. Course Fees: LRE1 \$20; STSE \$10.

EE 4912. Independent Study. (0-0) 2 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$20.

EE 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

EE 4953. Special Studies in Electrical and Computer Engineering. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

Engineering (EGR)

Engineering (EGR) Courses

EGR 1313. Calculus with Engineering Applications. (3-2) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

EGR 1324. Calculus II for Engineers. (4-0) 4 Credit Hours. (TCCN = MATH 2414)

Prerequisite: MAT 1214. Methods of integration, applications of the integral, sequences, series, and Taylor expansions. Calculus topics are combined with physics applications including an introduction to vectors, parametric equations, gradients, and Newton's Laws of Physics. (Credit cannot be earned for both EGR 1324 and MAT 1224.) Course Fees: LRE1 \$20; STSE \$40.

EGR 1343. The Impact of Modern Technologies on Society. (3-0) 3 Credit Hours.

Prerequisites: Basic background in high school mathematics and physical sciences. This course is designed to inform students of the social impact of modern technologies. The course explores the issues faced by society as technology becomes an integral part of human life. The course prepares students to think critically, practically, creatively and responsibly about technological and sociological challenges, and encourages them to examine solutions of their own. The course also explores and discusses the socio-technological interplay. May be applied toward the core curriculum requirement in Social and Behavioral Sciences. Course Fees: LRC1 \$12; LRE1 \$20; STSE \$30.

EGR 1403. Technical Communication. (3-0) 3 Credit Hours.

Prerequisite: WRC 1013. Oral, written, graphical and visual communication; technical instructions; design project with presentation; team-work; and personal responsibility. May be applied toward the Core Curriculum requirement in the Component Area Option. Course Fees: LRC1 \$12; LRE1 \$20; STSE \$30.

EGR 2103. Statics. (3-0) 3 Credit Hours. (TCCN = ENGR 2301)

Prerequisites: PHY 1943, and completion of or concurrent enrollment in MAT 1224. 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. Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

EGR 2213. Statics and Dynamics. (3-0) 3 Credit Hours. (TCCN = ENGR 2303)

Prerequisites: MAT 1224 and PHY 1943. 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. Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

EGR 2323. Applied Engineering Analysis I. (3-1) 3 Credit Hours. (TCCN = MATH 2321)

Prerequisite: MAT 1224 or EGR 1324. Application of mathematical principles to the analysis of engineering problems using linear algebra and ordinary differential equations (ODE's). 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; non-homogeneous equations; Laplace transforms; shifting theorems; convolution; solution of an ODE via Laplace transform; 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; existence and uniqueness of solutions; solution to system of ODE's by diagonalization. One hour of problem solving recitation. Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

EGR 2513. Dynamics. (3-0) 3 Credit Hours. (TCCN = ENGR 2302)

Prerequisite: EGR 2103. Kinetics of particles and plane rigid bodies, work and energy, impulse and momentum, equations of motion and engineering applications. Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

EGR 3303. Engineering Co-op. (0-0) 3 Credit Hours.

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. 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, a student must petition and get approval of a faculty supervisor prior to co-op activities. (Formerly EGR 3301.) Course Fees: LRE1 \$20; STSE \$30.

EGR 3323. Applied Engineering Analysis II. (3-1) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

EGR 3713. Engineering Economic Analysis. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

EGR 4953. Special Studies in Engineering. (3-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

EGR 4993. Honors Research. (0-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

English (ENG)

English (ENG) Courses

ENG 1113. Introduction to Creative Literary Arts. (3-0) 3 Credit Hours.

Introduction to Creative Literary Arts exploration in the purposes and processes of the literary arts. This course provides opportunities for students to engage in creative literary practices through the study of literary genres such as poetry and fiction.

ENG 2013. Introduction to Literature. (3-0) 3 Credit Hours. (TCCN = ENGL 2341)

Prerequisite: Completion of the Core Curriculum requirement in Communication. Introductory study of great works of literature with an emphasis on novels, plays, and poetry by British and American authors. Designed for nonmajors. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Credit may not be earned for both ENG 2013 Introduction to Literature and ENG 2023 Literature and Film. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

ENG 2023. Literature and Film. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Introductory study of works of literature and film with an emphasis on terminology used to analyze a range of literary texts and films. Designed for nonmajors. Credit may not be earned for both ENG 2023 Literature and Film and ENG 2013 Introduction to Literature. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Course Fees: LRC1 \$12; LRLF \$10.

ENG 2033. Science, Technology, and Society. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. The interdisciplinary study of how social, political, and cultural practices shape scientific research and technological innovation, with emphasis on knowledge construction, production and analysis of scientific texts, controversies, expertise, public understanding of science, and the political economy of STEM knowledge. Generally offered: Fall, Spring. Course Fee: LRLF \$10.

ENG 2213. Literary Criticism and Analysis. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Communication. 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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRLF \$10.

ENG 2223. British Literature I. (3-0) 3 Credit Hours. (TCCN = ENGL 2322)

Prerequisite: Completion of the Core Curriculum requirement in Communication. Study of representative works of British literature from the medieval period to 1700. Required of students majoring in English. Generally offered: Fall, Spring.

ENG 2233. British Literature II. (3-0) 3 Credit Hours. (TCCN = ENGL 2323)

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Study of representative works of British literature from 1700 to the present. Required of students majoring in English. Generally offered: Fall, Spring.

ENG 2263. American Literature I. (3-0) 3 Credit Hours. (TCCN = ENGL 2327)

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Study of representative works of American literature from the pre-Colonial period to 1865. Required of students majoring in English. Generally offered: Fall, Spring.

ENG 2293. American Literature II. (3-0) 3 Credit Hours. (TCCN = ENGL 2328)

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Study of representative works of American literature from 1865 to the present. Required of students majoring in English. Generally offered: Fall, Spring, Summer.

ENG 2323. Creative Writing: Fiction. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Offers the opportunity for intensive practice and development of techniques in the writing of fiction. Generally offered: Fall, Spring. Course Fee: LB01 \$5.

ENG 2333. Creative Writing: Poetry. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Offers the opportunity for intensive practice and development of techniques in the writing of poetry. Generally offered: Fall, Spring. Course Fee: LB01 \$5.

ENG 2343. Creative Writing: Nonfiction. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Offers the opportunity for intensive practice and development of techniques in the writing of nonfiction genres such as memoir, autobiography, and informal essays. Course Fee: LB01 \$5.

ENG 2383. Multiethnic Literatures of the United States. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Communication. A survey of the literature of various minority groups such as Native American, Asian American, African American, and Latina/o. Designed for nonmajors. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Course Fees: LRC1 \$12; LRLF \$10.

ENG 2413. Technical Writing. (3-0) 3 Credit Hours. (TCCN = ENGL 2311)

Prerequisite: Completion of the Core Curriculum requirement in Communication. Techniques of expository writing, particularly adapted to students in technological and scientific subjects. May be applied toward the Core Curriculum requirement in the Component Area Option. Generally offered: Fall, Spring, Summer. Course Fees: LB01 \$5; LRC1 \$12; LRLF \$10.

ENG 2423. Literature of Texas and the Southwest. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Communication. Study of the literature of Texas and the Southwest, including an examination of the region's multicultural heritage. Designed for nonmajors. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Course Fees: LRC1 \$12; LRLF \$10.

ENG 2433. Editing. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring. Course Fee: LB01 \$5.

ENG 2443. Introduction to Rhetoric. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Introduces students to key concepts and frameworks useful for analysis of texts, events, communication, and contexts by focusing on the traditional rhetorical canons of invention, arrangement, style, delivery, and memory.

ENG 3033. American Literature, 1945 to Present. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Critical study of the literature written in the United States since 1945. Generally offered: Fall, Spring.

ENG 3063. American Literature, 1870–1945. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Critical study of literature written in the United States in the late 19th and early 20th centuries.

ENG 3073. Young Adult Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. 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.) Generally offered: Fall.

ENG 3113. Studies in Individual Authors. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. 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. Generally offered: Spring.

ENG 3123. Modern Fiction. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Critical survey of American, British, and Continental fiction of the 20th century, studied in relation to the development of modern techniques. Generally offered: Spring.

ENG 3133. Women and Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Critical study of the presentation of women and feminist issues in various literary forms. Generally offered: Fall, Spring.

ENG 3153. Topics in Drama. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. 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.

ENG 3213. Chaucer. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Critical study of *The Canterbury Tales* and other poems. Texts in Middle English.

ENG 3223. Shakespeare: The Early Plays. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Critical study of comedies, histories, and tragedies from 1590–1601. Generally offered: Fall.

ENG 3233. Shakespeare: The Later Plays. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Critical study of comedies, tragedies, and romances from 1602–1613. Generally offered: Spring.

ENG 3243. Topics in the British Novel. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Critical study of English novels. May be repeated for credit when topics vary.

ENG 3253. The American Novel. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Reading and discussion of representative American novels.

ENG 3303. Theory and Practice of Composition. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Communication. 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. Generally offered: Fall, Spring. Course Fee: LB01 \$5.

ENG 3313. Advanced Composition. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Communication. 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. Generally offered: Fall, Spring. Course Fee: LB01 \$5.

ENG 3323. History of the English Language. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Historical survey of the development of the English language.

ENG 3333. Introduction to the Structure of English. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. 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. Generally offered: Fall, Spring, Summer.

ENG 3343. Principles of English Linguistics. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. 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.)

ENG 3363. Topics in Rhetoric and Composition. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Critical study of a topic in rhetoric and composition, such as history and development, research and methodology, major paradigms, and/or different contexts. Special emphasis on the diversity of approaches and applications. May be repeated for credit when topics vary.

ENG 3383. Writing in Public and Professional Contexts. (3-0) 3 Credit Hours.

Prerequisite: ENG 2413. Study of the diverse principles, forms, and procedures of writing in a specific topic, content, and/or genre, with emphasis on research, revision, documentation, and style. May be repeated for credit when topics vary.

ENG 3393. Literary Theories. (3-0) 3 Credit Hours.

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.

ENG 3413. Specialized Professional Writing. (3-0) 3 Credit Hours.

Prerequisite: ENG 2413. Study of specialized topics in professional and technical writing, with a focus on particular areas of emphasis, trends and paradigms, and/or research methodologies in order to learn how genres, resources, and tools create professional identities and shape information across contexts. May be repeated for credit when topics vary. Generally offered: Fall, Spring. Course Fee: LB01 \$5.

ENG 3423. Topics in Creative Writing. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fee: LB01 \$5.

ENG 3513. Mexican American Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Critical study of literature by and about Mexican Americans, including prose, verse, drama, essays, and autobiography. Concentration on writings since 1959.

ENG 3613. African American Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Critical study of literature by and about African Americans, including prose, verse, drama, essays, and autobiography. Generally offered: Fall, Spring.

ENG 3713. Topics in Multiethnic Literatures of the United States. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. 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. Generally offered: Summer.

ENG 3813. Topics in Native American Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. 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. Generally offered: Fall.

ENG 4013. Restoration and Eighteenth-Century Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Selected readings in the fiction, drama, poetry, and prose of the British literature of the late 17th century and the 18th century.

ENG 4023. Romantic Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Selected readings in the fiction, poetry, and prose of the British Romantic period.

ENG 4033. Literary Modes and Genres. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy, and Culture. 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. Generally offered: Fall, Spring.

ENG 4053. Modern British and American Poetry. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. An intensive study of major modern poets.

ENG 4063. Medieval English Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. 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.

ENG 4113. Renaissance Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Selected readings from major writers of the 16th and early 17th centuries (excluding Shakespeare).

ENG 4143. Victorian Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Selected readings in the fiction, poetry, and nonfiction prose of major Victorian writers.

ENG 4393. Feminist Theory of Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. 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. Generally offered: Spring.

ENG 4423. Studies in Advanced Linguistics. (3-0) 3 Credit Hours.

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.

ENG 4433. Advanced Professional Writing. (3-0) 3 Credit Hours.

Prerequisite: ENG 2413 or the equivalent. This course guides students in creating a portfolio of documents and texts, influenced by current best practices in professional and technical writing for professional audiences. Extensive practice includes writing, layout and design, digital media composing, and preparation of professional documents. Generally offered: Spring.

ENG 4523. Writer's Workshop: Advanced Fiction Writing. (3-0) 3 Credit Hours.

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. Course Fee: LB01 \$5.

ENG 4533. Writer's Workshop: Advanced Poetry Writing. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fee: LB01 \$5.

ENG 4613. Topics in Mexican American Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Critical study of a topic in Mexican American literature: author, genre, or theme. May be repeated for credit when topics vary. Generally offered: Fall.

ENG 4713. Topics in African American Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Critical study of a topic in African American literature: author, genre, or theme. May be repeated for credit when topics vary.

ENG 4911. Independent Study. (0-0) 1 Credit Hour.

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.

ENG 4912. Independent Study. (0-0) 2 Credit Hours.

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.

ENG 4913. Independent Study. (0-0) 3 Credit Hours.

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.

ENG 4933. Internship. (0-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer.

ENG 4953. Special Studies in English. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

ENG 4973. Seminar for English Majors. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

ENG 4993. Honors Thesis. (0-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

English as a Second Language (ESL)

English as a Second Language (ESL) Courses

ESL 3003. Language and Schooling. (3-0) 3 Credit Hours.

Survey of linguistic principles, common pedagogical structures of English, and academic language development as they relate to teacher language awareness and effective pedagogy for bilingual and second language learners. Generally offered: Fall. Course Fees: LRH1 \$10; STSH \$15.

ESL 3023. Second Language Teaching and Learning in EC–6. (3-0) 3 Credit Hours.

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. Field experience required. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

ESL 3033. Foundations of English as a Second Language. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: LRH1 \$10; STSH \$15.

ESL 3053. Literacy in a Second Language. (3-0) 3 Credit Hours.

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. Field experience required. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

ESL 3063. Second Language Teaching and Learning for Grades 4–8 and 7–12. (3-0) 3 Credit Hours.

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. Field experience required. (Formerly titled "Second Language Acquisition in Early Adolescence.") Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

ESL 4003. Approaches to Second Language Teaching. (3-0) 3 Credit Hours.

Prerequisite: Completion of all requirements for admission to the Teacher Certification Program. 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. Generally offered: Fall. Course Fees: LRH1 \$10; STSH \$15.

ESL 4023. Teaching and Learning Language Development of Young Emergent Bilinguals. (3-0) 3 Credit Hours.

Instructional developmental approaches and culturally responsive pedagogy for young emergent bilinguals, ages 0-5. Application of theories of early bilingual and biliteracy development and language socialization as well as the creation of learning conditions, methods, and engagement to support language acquisition as part of the linguistic and cognitive development of young emergent bilinguals. Field experience required. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

ESL 4953. Special Studies in English as a Second Language. (3-0) 3 Credit Hours.

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 is required. Course Fees: LRH1 \$10; STSH \$15.

English for International Students (EIS)

English for International Students (EIS) Courses

EIS 1073. ESL for International Students: Communicating Effectively. (3-0) 3 Credit Hours.

Development of oral discourse, including listening comprehension, note-taking skills, oral presentation, small group discussion, and pronunciation needed in academic settings. Generally offered: Spring. Course Fee: STSH \$15.

EIS 1083. English for Academic Purposes I. (3-0) 3 Credit Hours.

Development of English reading, writing and other literacy skills for academic purposes to improve student participation and success in undergraduate studies. (Formerly titled "Content-based Reading.") Generally offered: Fall, Spring. Course Fee: STSH \$15.

EIS 1093. English for Academic Purposes II. (3-0) 3 Credit Hours.

Development of English reading, writing and other literacy skills for academic purposes to improve student participation and success in undergraduate studies. (Formerly titled "Content-based Writing.") Generally offered: Fall, Spring. Course Fee: STSH \$15.

EIS 1163. Advanced Oral Communications. (3-0) 3 Credit Hours.

Development of oral proficiency skills, including oral presentation skills, required for students at the graduate level. Course Fee: STSH \$15.

EIS 1183. Advanced English for Academic Purposes I. (3-0) 3 Credit Hours.

Development of English reading, writing and other literacy skills for advanced academic purposes to improve student participation and success in graduate studies. (Formerly titled "Advanced Reading Strategies.") Generally offered: Fall, Spring. Course Fee: STSH \$15.

EIS 1193. Advanced English for Academic Purposes II. (3-0) 3 Credit Hours.

Development of English reading, writing and other literacy skills for advanced academic purposes to improve student participation and success in graduate studies. (Formerly titled "Advanced Writing Strategies.") Generally offered: Fall, Spring. Course Fee: STSH \$15.

Entrepreneurship (ENT)

Note: Beginning Fall 2019, course fees will be replaced with differential tuition at a rate of \$42 per semester credit hour for upper-division College of Business courses.

Entrepreneurship (ENT) Courses

ENT 1213. Innovation and Entrepreneurship. (3-0) 3 Credit Hours.

Prerequisites: ACC 2013 and ECO 2023 or consent of instructor, Department Chair and Dean of the College. This course introduces students to entrepreneurship, its importance to our economy and society and its role in bringing new ideas to market. Course provides an overview of the basic concepts of entrepreneurship focusing on the nature, environment, and risks of new business formation. Topics include opportunity recognition, innovation, market assessment, intellectual property, and financing the product or service idea. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ENT 4123. Commercialization and Enterprise Planning. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, MGT 3013, and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ENT 4223. Managing the Entrepreneurial Team. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, ENT 4123, and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ENT 4623. Tools and Objectives of the Social Enterprise. (3-0) 3 Credit Hours.

Prerequisite: Declared major in the College of Business or approval of Department Chair and Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ENT 4723. Essentials of Global Entrepreneurship. (3-0) 3 Credit Hours.

Prerequisite: Declared major in the College of Business or approval of Department Chair and Dean of the College. This course examines the importance of the entrepreneurial venture in a changing world; explores the economic, political, cultural and technological differences in operating a business in a global versus a domestic environment; and introduces the concepts related to emerging economy entrepreneurs. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ENT 4873. Managing Startups. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, ENT 4123, and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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 titled "Entrepreneurship.") Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ENT 4883. Managing the Emerging Enterprise. (3-0) 3 Credit Hours.

Prerequisites: MKT 3013, ENT 4123, and a declared major in the College of Business or approval of Department Chair and Dean of the College. Focuses on the startup 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.) (Formerly titled "Small Business Management.") Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ENT 4903. Business Venture Practicum. (3-0) 3 Credit Hours.

Prerequisites: ENT 4123, a declared major in the College of Business and permission from the instructor. This practicum will allow students to gain valuable experience. Drawing on resources from the College of Business, local business, entrepreneurs, and the broader business community, this practicum will give students the chance to solve real world entrepreneurship problems through competition, consultation, or other applied and comprehensive projects. Formerly titled "Practicum in Small Business and Entrepreneurship." Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ENT 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: ENT 4873, a 3.0 College of Business grade point average and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

ENT 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: ENT 4873, a 3.0 College of Business grade point average and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

ENT 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: ENT 4873, a 3.0 College of Business grade point average and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

ENT 4933. Internship in Entrepreneurship. (0-0) 3 Credit Hours.

Prerequisites: ENT 4873 and 6 additional semester credit hours of Entrepreneurship (ENT) courses, a 2.5 UTSA grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

ENT 4951. Special Studies in Entrepreneurship. (1-0) 1 Credit Hour.

Prerequisites: ENT 4873 and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ENT 4952. Special Studies in Entrepreneurship. (2-0) 2 Credit Hours.

Prerequisites: ENT 4873 and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

ENT 4953. Special Studies in Entrepreneurship. (3-0) 3 Credit Hours.

Prerequisites: ENT 4873 and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

Environmental Sciences (ES)

NOTE: All Environmental Sciences (ES) courses used as prerequisites for other Environmental Sciences courses must be completed with a grade of "C-" or better.

Environmental Sciences (ES) Courses

ES 1003. Survey Topics in Environmental Studies. (3-0) 3 Credit Hours.

A broad based survey course intended to provide a comprehensive introduction to the multidisciplinary field of environmental studies. This course examines the ecological, social and political-economic aspects of contemporary environmental issues from an interdisciplinary perspective.

ES 1111. Environmental Botany Laboratory. (0-3) 1 Credit Hour. (TCCN = BIOL 1111)

Laboratory studies to accompany Environmental Botany Lecture. Selected laboratories pertaining to the structure and function of plants. Course Fees: IUS1 \$15; LRS1 \$5; STSI \$5.

ES 1113. Environmental Botany. (3-0) 3 Credit Hours. (TCCN = BIOL 1311)

Study of structure and function of plant cells, tissues, and organs. Includes an evolutionary survey and life histories of the following representative groups: algae, fungi, mosses, liverworts, ferns, and seed producing organisms. Plant reproductive and functional interactions with their environment and with humans. May apply toward the Core Curriculum requirement in Life and Physical Sciences. Course Fees: IUS1 \$15; LRC1 12; LRS1 \$15; STSI \$15.

ES 1121. Environmental Zoology Laboratory. (0-3) 1 Credit Hour. (TCCN = BIOL 1113)

Laboratory studies to accompany Environmental Zoology Lecture. Selected laboratories pertaining to the taxonomy, molecular biology, and ecology of animals. Course Fees: IUS1 \$15; L001 \$30; LRS1 \$5; STSI \$5.

ES 1123. Environmental Zoology. (3-0) 3 Credit Hours. (TCCN = BIOL 1313)

Study of the principles of taxonomy, molecular biology, and ecology as they relate to animal form and function, diversity, behavior, and evolution. May apply toward the Core Curriculum requirement in Life and Physical Sciences. Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

ES 1211. Environmental Geology Laboratory. (0-3) 1 Credit Hour. (TCCN = GEOL 1105)

Laboratory studies to accompany Environmental Geology Lecture. Selected laboratories pertaining to urban and regional land use planning. Course Fees: IUS1 \$15; L001 \$30; LRS1 \$5; STFE \$40; STSI \$5.

ES 1213. Environmental Geology. (3-0) 3 Credit Hours. (TCCN = GEOL 1305)

The earth as a habitat. Interrelationships between humans and the environment. Geologic factors in urban and regional land use planning. May apply toward the Core Curriculum requirement in Life and Physical Sciences. Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

ES 1314. Environmental Statistics. (3-3) 4 Credit Hours. (TCCN = MATH 1442)

Collection, analysis, presentation and interpretation of environmental data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Use of appropriate technology, including statistical software. Course Fees: IUS1 \$15; LRS1 \$20; STSI \$20.

ES 2013. Introduction to Environmental Science I. (3-0) 3 Credit Hours. (TCCN = ENVR 1301)

An introduction to the scientific principles, concepts, and methodologies needed to understand the interactions of the biotic component of the natural world, to identify and analyze environmental problems within the biotic component of natural world, risk assessment of these environmental problems, and to examine alternate solutions. General attention is given to the biotic concepts of growth, processes, and changes occurring in ecosystems and social structures. May apply toward the Core Curriculum requirement in Life and Physical Sciences. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

ES 2021. Introduction to Environmental Science I Laboratory. (0-3) 1 Credit Hour.

Concurrent enrollment in ES 2013 is recommended. Qualitative and quantitative methods in the study of biotic environmental systems. Generally offered: Fall, Spring. Course Fees: IUS1 \$15; L001 \$30; LRS1 \$5; STSI \$5.

ES 2023. Introduction to Environmental Science II. (3-0) 3 Credit Hours. (TCCN = ENVR 1302)

An introduction to the scientific principles, concepts, and methodologies needed to understand the interactions of the abiotic component of the natural world, to identify and analyze environmental problems within the abiotic component of the natural world, risk assessment of these environmental problems, and to promote environmental sustainability. General attention is given to the abiotic environmental factors including natural hazards, pollution processes, energy resources, sustainability, and changes occurring in ecosystems. May apply toward the Core Curriculum requirement in Life and Physical Sciences. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

ES 2031. Introduction to Environmental Science II Laboratory. (0-3) 1 Credit Hour.

Concurrent enrollment in ES 2023 is recommended. Qualitative and quantitative methods in the study of abiotic environmental systems. Generally offered: Fall, Spring. Course Fees: IUS1 \$15; L001 \$30; LRS1 \$5; STSI \$5.

ES 2113. Fundamentals of Geographic Information Systems (GIS). (2-2) 3 Credit Hours.

Prerequisite: CS 1173. 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. (Credit cannot be earned for both ES 2113 and GEO 2113.) Course Fees: IUS1 \$15; LRS1 \$15; STSI \$15.

ES 3033. Environmental Ecology. (3-0) 3 Credit Hours.

Prerequisites: 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.) Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

ES 3042. Environmental Ecology Laboratory. (0-6) 2 Credit Hours.

Prerequisites: 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.) Generally offered: Fall, Spring. Course Fees: IUS1 \$15; L001 \$30; LRS1 \$10; STFE \$40; STSI \$10.

ES 3053. Environmental Remediation. (3-0) 3 Credit Hours.

Prerequisites: CHE 1083, CHE 1093, 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.) Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

ES 3061. Environmental Remediation Laboratory. (0-3) 1 Credit Hour.

Prerequisites: CHE 1083, CHE 1093, 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. Generally offered: Spring. Course Fees: IUS1 \$15; LRS1 \$5; STSI \$5.

ES 3103. Environmental Microbiology. (3-0) 3 Credit Hours.

Prerequisites: CHE 1083, CHE 1093, 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.) Course Fees: LRS1 \$15; STSI \$15.

ES 3113. Ichthyology. (3-0) 3 Credit Hours.

Prerequisites: ES 2013, ES 2021, ES 2023, and ES 2031, or equivalents. Study of fishes, and includes a wide range of topics including taxonomy, systematics, and biogeography, anatomy and physiology, and behavior and ecology. This course will focus on form and function, behavior, life history, ecology, and key taxonomic characteristics of most of the orders of fishes. Field trips may be required. Course Fees: IUS1 \$15; LRS1 \$15; STFE \$40; STSI \$15.

ES 3121. Introduction to Soils Laboratory. (0-3) 1 Credit Hour.

Prerequisites: ES 2013 and ES 2023, or equivalents. Laboratory exercise and field trips designed to develop student competency in soil description, analysis, and assessment. Course Fees: IUS1 \$5; L001 \$30; LRS1 \$5; STSI \$15.

ES 3123. Introduction to Soils. (3-0) 3 Credit Hours.

Prerequisites: ES 2013 and ES 2023, or equivalents. A study of soil properties and processes and relationships to land use, plant growth, environmental quality, and society. Course Fees: LRS1 \$15; STSI \$15.

ES 3133. Oceanography. (3-0) 3 Credit Hours.

Prerequisites: ES 2013, ES 2021, ES 2023, and ES 2031, or equivalents. Description of the oceans. Emphasis on relations of biology, chemistry, geology, and physics in marine environments. Examination of relationships and interactions at macro and micro scales in the ocean. Field trips may be required. (Credit cannot be earned for both ES 3133 and GEO 3163.) Course Fees: LRS1 \$15; STSI \$15.

ES 3141. Watershed Processes Laboratory. (0-3) 1 Credit Hour.

Prerequisites: ES 2013, ES 2023 and ES 1213, or equivalents. Laboratory exercises and field trips designed to develop an understanding of watershed processes, watershed assessment, and watershed management. Course Fees: IUS1 \$15; L001 \$30; LRS1 \$5; STFE \$40; STSI \$5.

ES 3143. Watershed Processes. (3-0) 3 Credit Hours.

Prerequisites: ES 2013, ES 2023 and ES 1213, or equivalents. This course focuses on watershed processes, watershed assessment, and watershed management. Course Fees: LRS1 \$15; STFE \$40; STSI \$15.

ES 3153. Environmental Chemistry. (3-0) 3 Credit Hours.

Prerequisites: CHE 1083, CHE 1093, ES 2013, and ES 2023, or equivalents. 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. (Same as CE 4613. Credit cannot be earned for both ES 3153 and CE 4613.) Course Fees: LRS1 \$15; STSI \$15.

ES 3163. Ornithology. (3-0) 3 Credit Hours.

Prerequisite: ES 3033 or BIO 3283, or equivalents. A course covering various aspects of the biology of birds, including anatomy, physiology, systematics, evolution, behavior, ecology, and biogeography. Field trips may be required. (Same as BIO 4063. Credit cannot be earned for both ES 3163 and BIO 4063.) Course Fees: IUS1 \$15; LRS1 \$15; STSI \$15.

ES 3173. Mammalogy. (3-0) 3 Credit Hours.

Prerequisite: ES 3033 or BIO 3283, or equivalents. A course covering various aspects of the biology of mammals, including anatomy, physiology, systematics, evolution, behavior, ecology, and biogeography. Field trips may be required. Course Fees: IUS1 \$15; LRS1 \$15; STSI \$15.

ES 3183. Entomology. (3-0) 3 Credit Hours.

Prerequisite: ES 3033 or BIO 3283, or equivalents. A course covering various aspects of the biology of insects, including anatomy, physiology, systematics, evolution, behavior, ecology, and biogeography. Field trips may be required. Course Fees: IUS1 \$15; LRS1 \$15; STSI \$15.

ES 3193. Herpetology. (3-0) 3 Credit Hours.

Prerequisite: ES 3033 or BIO 3283, or equivalents. A course covering various aspects of the biology of amphibians and reptiles, including anatomy, physiology, systematics, evolution, behavior, ecology, and biogeography. Field trips may be required. Course Fees: IUS1 \$15; LRS1 \$15; STSI \$15.

ES 3203. Environmental Law. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

ES 3213. Biology of Flowering Plants. (2-3) 3 Credit Hours.

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. (Same as BIO 3273. Credit can only be earned for ES 3213 or BIO 3273.) Course Fees: L001 \$30; LRS1 \$15; STFE \$40; STSI \$15.

ES 3223. Woody Plants. (2-3) 3 Credit Hours.

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. (Same as BIO 3263. Credit can only be earned for ES 3223 or BIO 3263.) Course Fees: L001 \$30; LRS1 \$15; STFE \$40; STSI \$15.

ES 3953. Topics in Environmental Science. (3-0) 3 Credit Hours.

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. Field trips may be required. May be repeated for credit when topics vary. Course Fees: LRS1 \$15; STSI \$15.

ES 4023. Aquatic Ecology. (3-0) 3 Credit Hours.

Prerequisites: ES 2013, ES 2021, ES 2023, and ES 2031, or equivalents. Study of aquatic ecosystems including streams, wetlands, and lakes. Topics include watershed processes, biological communities, physical habitats, nutrient cycling, energy flow, and management issues. The course culminates with individual research projects focused on local watersheds. Field trips may be required. Course Fees: LRS1 \$15; STFE \$40; STSI \$15.

ES 4103. Global Change. (3-0) 3 Credit Hours.

Prerequisites: CHE 1083, CHE 1093, 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.) Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

ES 4111. Field Biology Laboratory. (0-3) 1 Credit Hour.

Prerequisite: Junior or senior status: a minimum of 60 semester credit hours, or consent of instructor. Concurrent enrollment in ES 4113 is recommended. A field-oriented course offering the opportunity for practical experience observing, collecting, and identifying Texas plants and animals. (Same as BIO 4241. Credit cannot be earned for both ES 4111 and BIO 4241.) Course Fees: IUS1 \$15; LRS1 \$5; STSI \$5.

ES 4113. Field Biology. (3-0) 3 Credit Hours.

Prerequisite: Junior or senior status: a minimum of 60 semester credit hours, or consent of instructor. Concurrent enrollment in ES 4111 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. (Same as BIO 4233. Credit cannot be earned for both ES 4113 and BIO 4233.) Course Fees: IUS1 \$15; LRS1 \$15; STSI \$15.

ES 4123. Desert Biology. (3-0) 3 Credit Hours.

Prerequisite: Junior or senior status: a minimum of 60 semester credit hours, or consent of instructor. 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. Course Fees: IUS1 \$15; LRS1 \$15; STSI \$15.

ES 4133. Natural Resource Policy and Administration. (3-0) 3 Credit Hours.

Prerequisite: ES 3203 or equivalent. Factors in evolution of forest, range, wildlife and related natural resources administration and policies in the United States; policy components; policy formation implementation, administration and change processes; introduction to criteria for evaluating effectiveness of policies and administration. Course Fees: LRS1 \$15; STSI \$15.

ES 4143. Environmental Geomorphology. (3-0) 3 Credit Hours.

Prerequisites: ES 1213 or consent of instructor, and junior or senior standing. Examination of landforms on the Earth's surface and landscape-forming processes. Field trips may be required. Course Fees: LRS1 \$15; STFE \$40; STSI \$15.

ES 4153. Introduction to Sustainability. (3-0) 3 Credit Hours.

Prerequisites: ES 2023 and junior or senior status: a minimum of 60 semester credit hours, or consent of instructor. This course will examine the major environmental issues and trends happening in modern society from a scientific and practical perspective, including biodiversity, population, food and water resources, climate change, energy, public health, and the overall forecast for the environment for the next several decades. Course Fees: LRS1 \$15; STSI \$15.

ES 4163. Renewable Energy. (3-0) 3 Credit Hours.

Prerequisites: ES 2023 and junior or senior status: a minimum of 60 semester credit hours, or consent of instructor. This course is an introduction to energy systems and renewable energy resources, with a scientific examination of the energy field and an emphasis on alternate energy sources and their technology and application. Course Fees: LRS1 \$15; STSI \$15.

ES 4173. Waste Water Treatment. (2-3) 3 Credit Hours.

Prerequisite: ES 2023 and junior or senior status: a minimum of 60 semester credit hours, or consent of instructor. The application of chemical, biochemical, and physical processes to water treatment, wastewater treatment, and pollution control. Course Fees: IUS1 \$15; LRS1 \$15; STFE \$40; STSI \$15.

ES 4183. Environmental Toxicology. (3-0) 3 Credit Hours.

Prerequisites: CHE 1083, CHE 1093, ES 2013, and ES 2023, or equivalents. Examination of advanced or specialized hazardous or toxic waste treatment methods. Emphasis will be on physical, chemical, and biological processes in treatment and processing of hazardous wastes materials. (Same as ES 4003. Credit cannot be earned for both ES 4183 and ES 4003.) Course Fees: LRS1 \$15; STSI \$15.

ES 4193. Planning and Response to Environmental Disasters. (3-0) 3 Credit Hours.

Prerequisites: CHE 1083, CHE 1093, ES 2013, and ES 2023, or equivalents. Mitigation of preparation for, response to, and recovery from environmental disasters.

ES 4203. Environmental Assessment. (3-0) 3 Credit Hours.

Prerequisites: ES 2013 and ES 2023, or equivalents. This course evaluates the framework of an impact assessment and details regarding the environment (air, water, soil), its pollutants (atmospheric, noise, water, solid waste), their impacts (physical, social, economic), relevant regulations, and pollution minimization or management strategies. Students use this information to review and comment on an existing Environmental Impact Statement (EIS). Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

ES 4212. Senior Seminar. (2-0) 2 Credit Hours.

Prerequisite: Senior status: Environmental Science majors and a minimum of 90 credit hours. The techniques of seminar presentation will be studied by preparing and presenting individual seminars on topics of interest. Enrollment for credit is limited to, and required of, all senior students majoring in environmental studies. (Formerly ES 4211. Credit cannot be earned for both ES 4212 and ES 4211).

ES 4213. Conservation Biology. (3-0) 3 Credit Hours.

Prerequisite: ES 3033 or BIO 3283, or equivalents. 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. (Same as BIO 4033. Credit cannot be earned for both ES 4213 and BIO 4033.) Course Fees: LRS1 \$15; STSI \$15.

ES 4233. Restoration Ecology. (3-0) 3 Credit Hours.

Prerequisite: ES 3033 or BIO 3283, or equivalents. Applies ecological principles to the restoration of disturbed terrestrial, wetland, and aquatic ecosystems. Includes the restoration of soils and waterways, of flora and fauna, and of natural ecological processes such as plant succession and nutrient cycling. Course Fees: LRS1 \$15; STSI \$15.

ES 4243. Wildlife Management. (3-0) 3 Credit Hours.

Prerequisite: ES 3033 or BIO 3283, or equivalents. 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. (Same as BIO 4053. Credit cannot be earned for both ES 4243 and BIO 4053.) Course Fees: LRS1 \$15; STSI \$15.

ES 4253. Sources, Fate, and Transport of Chemicals in the Environment. (3-0) 3 Credit Hours.

Prerequisites: CHE 1083, CHE 1093, ES 2013, and ES 2023, or equivalents. Sources of chemicals in the environment. Processes regulating fate and transport of metals, organics, nutrients, salts, pathogens, and radionuclides in the environment. Course Fees: LRS1 \$15; STSI \$15.

ES 4911. Independent Study. (0-0) 1 Credit Hour.

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. Course Fees: LRS1 \$5; STSI \$5.

ES 4912. Independent Study. (0-0) 2 Credit Hours.

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. Course Fees: LRS1 \$10; STSI \$10.

ES 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fees: LRS1 \$15; STSI \$15.

ES 4951. Special Studies in Environmental Science. (1-0) 1 Credit Hour.

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. Course Fees: LRS1 \$5; STSI \$5.

ES 4953. Special Studies in Environmental Science. (3-0) 3 Credit Hours.

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. Course Fees: LRS1 \$15; STSI \$15.

ES 4963. Internship. (0-0) 3 Credit Hours.

Prerequisite: Consent of the Undergraduate Advisor of Record. An opportunity for students to work in a setting that permits them to apply what they have learned in the formal instruction part of the program. Course Fees: LRS1 \$15; STSI \$15.

Finance (FIN)

Note: Beginning Fall 2019, course fees will be replaced with differential tuition at a rate of \$42 per semester credit hour for upper-division College of Business courses.

Finance (FIN) Courses

FIN 3003. Survey of Finance. (3-0) 3 Credit Hours.

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 or a minor in finance. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 3013. Principles of Business Finance. (3-0) 3 Credit Hours.

Prerequisites: ACC 2013, ECO 2013, MAT 1133, and MS 1023, or their equivalents. Completion or concurrent enrollment in 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. (Formerly FIN 3014. Credit cannot be earned for both FIN 3014 and FIN 3013.) Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 3023. Intermediate Corporate Finance. (3-0) 3 Credit Hours.

Prerequisites: FIN 3013, or the equivalent, with a grade of "C-" or better and successful completion of the Finance Assessment of Competency Test (FACT). Completion or concurrent enrollment in ACC 3023 or ACC 3053. 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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 3033. Principles of Investment. (3-0) 3 Credit Hours.

Prerequisite: FIN 3013, 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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 3313. Money and Banking. (3-0) 3 Credit Hours.

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. (Same as ECO 3313. Credit cannot be earned for both ECO 3313 and FIN 3313.) Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 3413. Introduction to Financial Markets. (3-0) 3 Credit Hours.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 3423. Security Analysis. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 3433. Principles of Real Estate. (3-0) 3 Credit Hours.

General introduction to the subject matter and terminology of real estate as a business and profession. This course introduces students to how real estate builds wealth. Topics may include legal and regulatory concerns, legal foundations to value, conveying real property interests, market based valuation, introduction to appraisal, mortgage financing, real estate brokerage, real property management, and real estate contracts. This course serves as the foundation to further study in real estate finance and development. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 4323. Financial Institutions Management. (3-0) 3 Credit Hours.

Prerequisite: FIN 3013 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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 4333. Business Finance for Entrepreneurs. (3-0) 3 Credit Hours.

Prerequisite: FIN 3013 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. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 4413. Trading and Analysis of Financial Instruments. (3-0) 3 Credit Hours.

Prerequisites: FIN 3033 and consent of instructor and approval of the Department Chair and the Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 4423. Investment Portfolio Management. (3-0) 3 Credit Hours.

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. Generally offered: Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 4523. Introduction to Risk Management. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and FIN 3013 or consent of instructor and approval of the Department Chair and the Dean of the College. Develop an understanding of the risk management process including risk identification, risk analysis, and risk measurement; investigate methods of risk mitigation techniques such as immunization, diversification, risk financing, risk control, hedging and insurance with applications. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 4543. Credit Analysis. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and FIN 3013 or consent of instructor and approval of the Department Chair and the Dean of the College. The course will provide an introduction to credit analysis. Topics covered will include: financial statement analysis; identification of relevant factors affecting the economy, industry, and the firm; default risk measures and recovery rates; structure and documentation of debt contracts; and tools to mitigate default risk. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 4613. Introduction to International Finance. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and FIN 3013 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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 4713. Mortgage Banking and Real Estate Finance. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, FIN 3013, and FIN 3433, or consent of instructor, approval of the Department Chair and the Dean of the College. 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. Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 4723. Principles of Real Estate Investment. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, FIN 3013, and FIN 3433, or consent of instructor, approval of the Department Chair and the Dean of the College. 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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 4733. Principles of Sustainable Real Estate Development. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, FIN 3013, FIN 3433, and FIN 4713 or FIN 4723, or consent of instructor, approval of the Department Chair and Dean of the College. 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.) Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 4813. Property-Liability Insurance Finance. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and FIN 3013 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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 4823. Life and Health Insurance Finance. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and FIN 3013 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. Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 4853. Real Estate Appraisal. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, FIN 3013, and FIN 3433, their equivalents, or consent of instructor, approval of the Department Chair and the Dean of the College. 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.) Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 4873. Computer Modeling of Financial Applications. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, IS 3003, and FIN 3013 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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 4893. Cases and Problems in Finance. (3-0) 3 Credit Hours.

Prerequisites: ACC 3023 or ACC 3053, FIN 3023, FIN 3033, and FIN 3313 with grade of "C-" or better in each course, 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 through the academic advisor. 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. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: A 3.0 College of Business grade point average, MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

FIN 4933. Internship in Finance. (0-0) 3 Credit Hours.

Prerequisites: MGT 3003, 6 semester credit hours of upper-division finance courses, a 2.5 UTSA grade point average, and approval in writing from the instructor, the Department Chair, and the Associate/Assistant Dean of Undergraduate Studies in the College of Business. Directed internship of at least 200 hours of work under the supervision of a finance professional, providing students with opportunities to apply concepts, principles, and techniques learned in the classroom. Written report required. A proposal form must be completed and approved prior to registration. May be repeated once for credit (for a total of 6 semester credit hours). Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15.

FIN 4951. Special Studies in Finance. (1-0) 1 Credit Hour.

Prerequisites: MGT 3003 and consent of instructor, and approval of the Department Chair and the Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

FIN 4953. Special Studies in Finance. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and consent of instructor, and approval of the Department Chair and the Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

Foreign Languages (FL)

Foreign Languages (FL) Courses

FL 1034. Beginning Language Study Abroad. (0-0) 4 Credit Hours.

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. Generally offered: Spring. Course Fee: MM01 \$7.

FL 1038. Beginning Language Study Abroad. (0-0) 8 Credit Hours.

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. Course Fee: MM01 \$7.

FL 1044. Individualized Instruction in Basic Language. (0-0) 4 Credit Hours.

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. Course Fee: MM01 \$7.

FL 2033. Intermediate Language Study Abroad. (0-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

FL 2036. Intermediate Language Study Abroad. (0-0) 6 Credit Hours.

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. Course Fee: MM01 \$7.

FL 2043. Individualized Instruction in Intermediate-Level Language. (0-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

FL 3033. Advanced Language Study Abroad. (0-0) 3 Credit Hours.

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. Generally offered: Summer. Course Fee: MM01 \$7.

FL 3036. Advanced Language Study Abroad. (0-0) 6 Credit Hours.

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. Course Fee: MM01 \$7.

FL 3043. Individualized Instruction in Advanced-Level Language. (0-0) 3 Credit Hours.

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. Generally offered: Summer. Course Fee: MM01 \$7.

FL 3101. Languages Across the Curriculum. (0-0) 1 Credit Hour.

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. Course Fee: MM01 \$7.

FL 4243. Foreign Language Instruction. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

FL 4933. Internship. (0-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

FL 4953. Special Projects. (0-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

FL 4993. Honors Research. (0-0) 3 Credit Hours.

Prerequisite: Consent of the undergraduate advisor. Supervised research and preparation of an honors thesis. May be repeated once for credit, with approval. Course Fee: MM01 \$7.

French (FRN)

French (FRN) Courses

FRN 1014. Elementary French I. (3-2) 4 Credit Hours. (TCCN = FREN 1411)

Fundamentals of French offering the opportunity to develop listening, speaking, reading, and writing skills. Emphasis on listening and speaking. Introduction to French culture. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall. Course Fees: LRC1 \$16; LRLF \$10; MM01 \$7.

FRN 1024. Elementary French II. (3-2) 4 Credit Hours. (TCCN = FREN 1412)

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. Generally offered: Spring. Course Fee: MM01 \$7.

FRN 2013. Intermediate French I. (3-1) 3 Credit Hours. (TCCN = FREN 2311)

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. Generally offered: Fall. Course Fees: LRLF \$10; MM01 \$7.

FRN 2023. Intermediate French II. (3-1) 3 Credit Hours. (TCCN = FREN 2312)

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. Generally offered: Spring. Course Fees: LRLF \$10; MM01 \$7.

FRN 2333. French Literature in English Translation. (3-0) 3 Credit Hours.

Major works of French literature across time, genres, and movements. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly FRN 3333. Credit cannot be earned for both FRN 2333 and FRN 3333.) Course Fees: LRC1 \$12; LRLF \$10; MM01 \$7.

FRN 3023. Advanced Language Skills. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fee: MM01 \$7.

FRN 3053. Business French. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

FRN 3413. Survey of French Literature and Culture. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

FRN 4003. Topics in French Literature. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

FRN 4213. Topics in French Culture and Linguistics. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

FRN 4913. Independent Study. (0-0) 3 Credit Hours.

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.

FRN 4933. Internship in French. (0-0) 3 Credit Hours.

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.

FRN 4953. Special Studies in French. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

FRN 4993. Honors Research. (0-0) 3 Credit Hours.

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)

Note: Beginning Fall 2019, course fees will be replaced with differential tuition at a rate of \$42 per semester credit hour for upper-division College of Business courses.

General Business Administration (GBA) Courses

GBA 2013. Legal, Social and Ethical Issues in Business. (3-0) 3 Credit Hours.

A study of the legal, social, and ethical responsibilities of business organizations and of the people who work in those organizations. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$10; BTSI \$15; LRB1 \$15.

GBA 4873. Global Business Immersion I. (3-0) 3 Credit Hours.

Prerequisite: Completion of 9 semester credit hours of College of Business (COB) courses and official admission into the COB Business Immersion Program. This course provides students with first-hand experience into how business is conducted in the locations visited. The pre-departure activities provide students with an introduction to the local business climate and culture. The in-country activities include visits to local companies and workshops hosted by local professors. The post-immersion components engage students in reflection opportunities and applied project experiences. This course relies heavily on experiential components; as a result, attendance to all official course events is required. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

GBA 4883. Global Business Immersion II. (3-0) 3 Credit Hours.

Prerequisite: Completion of 9 semester credit hours of College of Business (COB) courses and official admission into the COB Business Immersion Program. This course provides students with first-hand experience into how business is conducted in the locations visited. The pre-departure activities provide students with an introduction to the local business climate and culture. The in-country activities include visits to local companies and workshops hosted by local professors. The post-immersion components engage students in reflection opportunities and applied project experiences. This course relies heavily on experiential components; as a result, attendance to all official course events is required. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

GBA 4951. Special Studies in General Business Administration. (1-0) 1 Credit Hour.

Prerequisites: MGT 3003 and consent of instructor, Department Chair, and Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

GBA 4952. Special Studies in General Business Administration. (2-0) 2 Credit Hours.

Prerequisites: MGT 3003 and consent of instructor, Department Chair, and Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

GBA 4953. Special Studies in General Business Administration. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and consent of instructor, Department Chair, and Dean of the College. 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. Generally offered: Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

GBA 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisite: MGT 3003. Enrollment limited to students applying for Business Honors. Supervised research and preparation of an honors thesis in any business discipline including accounting, economics, finance, information systems, management, marketing, management science, and data sciences among others. May be repeated once for credit with advisor's approval. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15.

Geography and Environmental Sustainability (GES)

Geography and Environmental Sustainability (GES) Courses

GES 1013. Fundamentals of Geography. (3-0) 3 Credit Hours.

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. May apply toward the Core Curriculum requirement in Social and Behavioral Sciences. (Formerly GRG 1013. Credit cannot be earned for both GRG 1013 and GES 1013.) Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRLF \$10.

GES 1023. World Regional Geography. (3-0) 3 Credit Hours. (TCCN = GEOG 1303)

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. May apply toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly GRG 1023. Credit cannot be earned for both GRG 1023 and GES 1023.) Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

GES 2613. Physical Geography. (3-0) 3 Credit Hours. (TCCN = GEOG 1301)

Study of the earth's major landforms and climatic patterns, the processes giving rise to these patterns, and their relationship to human activity. Includes the geomorphology of volcanoes, glaciers, coral reefs, mountains, caves, dunes, and plate tectonics; weather and climate; and the relationship of these agents to physical and human landscapes. May apply towards the Core Curriculum requirement in Life and Physical Sciences. (Formerly GRG 2613. Credit cannot be earned for both GRG 2613 and GES 2613.) Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

GES 2623. Human Geography. (3-0) 3 Credit Hours. (TCCN = GEOG 1302)

An introduction to the study of human patterns and behaviors across the globe. Topics include population and migration; language, religion, gender, and ethnicity; political geography; development; economic geography; urban patterns; and resource issues. May apply towards the Core Curriculum requirement in Social and Behavioral Sciences. (Formerly GRG 2623. Credit cannot be earned for both GRG 2623 and GES 2623.) Generally offered: Fall. Course Fees: LRC1 \$12; LRLF \$10.

GES 3003. Global Sustainability. (3-0) 3 Credit Hours.

This course introduces the student to the concepts, principles, and practices of sustainability in the context of physical and human geography. It focuses on key knowledge areas including environmental and ecosystem change; water, food, and energy resources; urban and economic development; social equity; and cultural preservation. The course will help the student respond to critical global challenges such as climate change, natural disasters, food shortages, environmental degradation, and social inequalities.

GES 3113. Geography of the United States and Canada. (3-0) 3 Credit Hours.

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. (Formerly GRG 3113. Credit cannot be earned for both GRG 3113 and GES 3113.)

GES 3123. Geography of Latin America. (3-0) 3 Credit Hours.

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. (Formerly GRG 3123. Credit cannot be earned for both GRG 3123 and GES 3123.)

GES 3133. Geography of Europe. (3-0) 3 Credit Hours.

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. (Formerly GRG 3133. Credit cannot be earned for both GRG 3133 and GES 3133.) Generally offered: Spring.

GES 3143. Geography of Mexico. (3-0) 3 Credit Hours.

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. (Formerly GRG 3143. Credit cannot be earned for both GRG 3143 and GES 3143.)

GES 3153. Geography of Texas. (3-0) 3 Credit Hours.

A topical and regional examination of the physical, historical, cultural, and economic patterns of the state. Includes demographic characteristics, agriculture, mining, manufacturing, and selected urban areas. The role of historical and political forces in creating social inequities in contemporary Texas are examined in detail, including environmental degradation, rural health, higher education, and patterns of wealth and economic growth. May include a field trip to the nonmetropolitan hinterland of San Antonio. (Formerly GRG 3153. Credit cannot be earned for both GRG 3153 and GES 3153.)

GES 3166. Physical and Cultural Geography of the American Southwest. (6-0) 6 Credit Hours.

An immersion in the geography of the U.S. Southwest. Includes both classroom and field components. Illustrates how the principles of physical and cultural geography play out in landscapes of the Southwest. Students will visit sites, keep field logs, and make student presentations. The one-week field portion includes travel in vans to areas that may include West Texas and New Mexico in addition to adjacent Colorado, Arizona, and Utah. Students will stay in campgrounds and walk into historic and natural sites. (Formerly GRG 3166. Credit cannot be earned for both GRG 3166 and GES 3166.)

GES 3213. Cultural Geography. (3-0) 3 Credit Hours.

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. (Formerly GRG 3213. Credit cannot be earned for both GRG 3213 and GES 3213.) Generally offered: Fall.

GES 3223. Revealing Geography through Film and Pop Culture. (3-0) 3 Credit Hours.

This course explores global geographic issues by means of contemporary cinema, elaborated upon in selected readings. By the use of film, the course immerses the student in the socio-cultural, geo-political, economic, and environmental dimensions of the contemporary world. It examines places and people that are often marginalized, such as certain ethnic and racial groups, women, and the economically disadvantaged.

GES 3314. Introduction to Geographic Information Systems. (3-2) 4 Credit Hours.

An introductory course on the application of the computer to the acquisition, manipulation, analysis, and display of geographic data; and an overview of projection systems, data acquisition issues, and presentation techniques. Three lecture and two laboratory hours per week. (Formerly GRG 3313 and GRG 3314. Credit cannot be earned for GRG 3314 or GRG 3313 and GES 3314.) Generally offered: Fall. Course Fee: GIS1 \$32.

GES 3323. Spatial Analysis. (3-0) 3 Credit Hours.

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. Students will have the opportunity to explore their own interests within the course. (Formerly GRG 3323. Credit cannot be earned for both GRG 3323 and GES 3323.) Generally offered: Spring.

GES 3334. Advanced Geographic Information Systems. (3-2) 4 Credit Hours.

Prerequisite: GES 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. Three lecture and two laboratory hours per week. (Formerly GRG 3333 and GRG 3334. Credit cannot be earned for GRG 3333 or GRG 3334 and GES 3334.)

GES 3343. Analytical and Computer Cartography. (2-2) 3 Credit Hours.

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. (Formerly GRG 3343. Credit cannot be earned for both GRG 3343 and GES 3343.)

GES 3353. Critical Qualitative GIS. (3-0) 3 Credit Hours.

This course will serve as an introduction to the concepts, techniques, and histories that enable mapping as a creative and artistic practice, with particular attention to critical and qualitative interventions into the GISciences. It covers the centrality of the map in everyday life and considers the changing role of the map-maker as society becomes increasingly saturated by digital information technologies. The course introduces more recent innovative applications of GIS and mapping in representing social groups through participatory and voluntary mapping practices.

GES 3363. GIS Cartography. (3-0) 3 Credit Hours.

This course is focused on creating and designing high-quality digital maps. Introduces the basic concepts and techniques of digital map making and the broader field of geographic visualization. Topics may include map symbolization, scale, generalization and cognition, virtual environments, designing user interfaces for GIS, and map animations using Online GIS and Google Earth.

GES 3413. Geography of the Middle East and North Africa. (3-0) 3 Credit Hours.

An analysis of the states spanning the Maghreb from Morocco to Libya; Egypt; and the Middle East from Turkey and the Arabian Peninsula to Pakistan. Examination of the region's physical and social geography and its political and economic dynamics from early history to modern times. (Formerly GRG 3413. Credit cannot be earned for both GRG 3413 and GES 3413.)

GES 3423. Geopolitics of Russia and Eurasia. (3-0) 3 Credit Hours.

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 GLA 3423 and POL 3423. Formerly GRG 3423. Credit cannot be earned for more than one of the following: GLA 3423, GRG 3423, POL 3423, or GES 3423.)

GES 3433. The Geography and Politics of the Asian Rim. (3-0) 3 Credit Hours.

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. (Formerly GRG 3433. Credit cannot be earned for both GRG 3433 and GES 3433.)

GES 3443. Medical Geography. (3-0) 3 Credit Hours.

The human ecology of health and disease. Topics may include analysis of the cultural/ environmental interactions that explain world patterns of disease; the diffusion and treatment of infectious disease; maps and GIS in medical geography; the ecology of non-communicable diseases; and health care promotion and delivery. (Formerly GRG 3443. Credit cannot be earned for both GRG 3443 and GES 3443.)

GES 3453. Population Geography. (3-0) 3 Credit Hours.

Study of the spatial dimensions of population distribution, growth, and mobility. Includes the historical and modern reasons for global patterns of population, 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 related to population growth and movement such as political conflict and governance, disease, and immigration policy will be covered. (Formerly GRG 3453. Credit cannot be earned for both GRG 3453 and GES 3453.)

GES 3463. Geography of Tourism. (3-0) 3 Credit Hours.

Introduces the principles and practices of global tourism, including its geographic diversity and the connections between tourist origins and destinations. Discusses the economic importance and dimensions of tourism and the social, economic, and environmental impacts it has on host societies. (Formerly GRG 3463. Credit cannot be earned for both GRG 3463 and GES 3463.)

GES 3513. Urban Geography. (3-0) 3 Credit Hours.

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, factors that influence the growth and decline of cities, urbanization, the rise of global cities, the imagined city, cities as urban service centers, urban cultural diversity, social area analysis, and urban cultural conflicts. Focus of the course may be local, national, or international. (Formerly GRG 3513. Credit cannot be earned for both GRG 3513 and GES 3513.) Generally offered: Fall.

GES 3523. Introduction to Urban Planning. (3-0) 3 Credit Hours.

An introduction to urban public policy, urban dynamics, selected problems of cities, and the role of the master planning process in their management and solution. Issues and themes may include, urban growth and sustainability; municipal and regional government including zoning and subdivision regulations; planning and law; energy and waste management; historic preservation and urban design; and relationships between transportation and land use. (Formerly GRG 3523. Credit cannot be earned for both GRG 3523 and GES 3523.)

GES 3533. Geography of Local Economic Activity. (3-0) 3 Credit Hours.

Investigates the location of agricultural, industrial, retail and service activities, and transportation flows at the scale of town and community, through relevant theories and models. Includes case studies of agricultural land use around cities, the community economic base, global impacts on the local economy, and central place principles of threshold, range, primacy, and hierarchy. Students will apply these concepts and models to local communities.

GES 3543. Behavioral Geography. (3-0) 3 Credit Hours.

Study of human spatial perception and behavior as a function of the social, built, and natural environments. Topics include the formation of beliefs and attitudes toward places and peoples; how humans lay claim to and defend proximal spaces and territories; perception of the physical environment; the diffusion of technologies, ideas, people, and diseases over space; and the causes and effects of contemporary human migrations. Students will directly observe human personal space defense in the field, and present their observations in written and/or verbal form.

GES 3563. Urban Development: Politics, Planning and Power. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An opportunity to pursue a political, economic, and geographic analysis of the dynamics of growth and change in the modern 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 the Austin-San Antonio region as well as from societies other than the United States (Same as POL 3413. Credit cannot be earned for both GES 3563 and POL 3413.)

GES 3613. Conservation of Resources. (3-0) 3 Credit Hours.

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. (Formerly GRG 3613. Credit cannot be earned for both GRG 3613 and GES 3613.) Generally offered: Fall.

GES 3623. Geography of Natural Hazards. (3-0) 3 Credit Hours.

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. (Formerly GRG 3623. Credit cannot be earned for both GRG 3623 and GES 3623.)

GES 3633. Geography of Globalization and Development. (3-0) 3 Credit Hours.

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 defining development, modernization and neo-liberalism, structuralism and post-development, major theories of development and underdevelopment, poverty and inequality, sustainable and grassroots development, cultural globalization, and hyper-urbanization. (Formerly GRG 3633. Credit cannot be earned for both GRG 3633 and GES 3633.)

GES 3643. Political Geography. (3-0) 3 Credit Hours.

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, emerging supranationalism, and the spatial and political problematics associated with the globalization of capitalist exchange. (Formerly GRG 3643. Credit cannot be earned for both GRG 3643 and GES 3643.)

GES 3653. Gender and Cities: An Introduction to Feminist Geography. (3-0) 3 Credit Hours.

The course studies the role of women in the spatial organization 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. In addition to the role of gender, this course explores the roles of race, religion, disability, and sexual orientation in shaping the urban environment. (Formerly GRG 3653. Credit cannot be earned for both GRG 3653 and GES 3653.) Generally offered: Spring.

GES 3663. Urban Sustainability in Global Context. (3-0) 3 Credit Hours.

This course explores the challenges of achieving environmentally and socially sustainable communities, neighborhoods, and cities. It investigates how and in what contexts we can move towards urban ecological integrity, economic security, empowerment, social responsibility and social well-being as exemplified by sustainable communities globally. Students will be introduced to the concepts, theories, tools, and techniques of this vibrant, emerging field.

GES 3673. Space and Identity Crisis in the Postmodern Era. (3-0) 3 Credit Hours.

This course examines the growing crisis of personal and collective identity as a consequence of the globalization of capitalist exchange. The human need for 'belonging' to different social communities at different spatial, social, and cultural levels is challenged by rapid changes in economic production, technology and the corresponding integration with formerly external areas. Common manifestations of these processes are expressed through supranationalism (EC, NAFTA, etc.), gentrification, 'anti-immigrationism', the renewal of recently tainted racial, ethnic, and gender conceptions, amongst others. This course reveals the systemic underpinnings to growing sectarian strife at the local and international level.

GES 3713. Weather and Climate. (3-0) 3 Credit Hours.

Analysis of the elements and causes of daily weather, climatic classifications, and climate change. Study of world distributions and components of climate, air pressure, precipitation, air masses, optical phenomena, and wave cyclones. Regional attention to weather patterns, including tornadoes and hurricanes. (Formerly GRG 3713. Credit cannot be earned for both GRG 3713 and GES 3713.) Generally offered: Fall.

GES 3723. Physiography. (3-0) 3 Credit Hours.

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 and change them over time. Students will be introduced to the impacts of human intervention in landscape-shaping processes. Emphasis will be placed on the landforms of a selected region, such as the Southwestern United States. (Formerly GRG 3723. Credit cannot be earned for both GRG 3723 and GES 3723.)

GES 3733. Urban and Regional Analysis. (3-0) 3 Credit Hours.

Applied models of urban and regional growth, structure, interaction, influence, and inequality over space, with emphasis on the United States. The course introduces the student to theories and concepts of urban and regional development, stressing practical skills for analyzing social, political, economic, and demographic characteristics of the urban scene, with an emphasis on sustainable development. (Formerly GRG 3733. Credit cannot be earned for both GRG 3733 and GES 3733.)

GES 3743. Biogeography. (3-0) 3 Credit Hours.

The study of the distribution of species and ecosystems in geographic space and over time. Topics may include the prehistoric and historic diffusion of plant and animal species, the global distribution of flora, fauna and soils, the impacts of plants and animals on settlement and globalization, and the consequences of human activity for the biosphere. (Formerly GRG 3743. Credit cannot be earned for both GRG 3743 and GES 3743.)

GES 3753. Climate Change. (3-0) 3 Credit Hours.

Examines changes in climatic systems over both short and long time periods, their physical and human causes, and their impacts on physical and ecological systems. Discusses past, present, and future changes in climatic conditions and the methods used to evaluate changes in temperature, precipitation, and other climatic indicators. (Formerly GRG 3753. Credit cannot be earned for both GRG 3753 and GES 3753.)

GES 4853. Study Abroad. (3-0) 3 Credit Hours.

Prerequisite: Permission of instructor. Lecture course associated with a study abroad program. Involves international travel and field trips. May be repeated once for credit when the destination varies.

GES 4856. Study Abroad. (6-0) 6 Credit Hours.

Prerequisite: Permission of instructor. Lecture course associated with a study abroad program. Involves international travel and field trips.

GES 4911. Independent Study. (0-0) 1 Credit Hour.

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. (Formerly GRG 4911).

GES 4912. Independent Study. (0-0) 2 Credit Hours.

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. (Formerly GRG 4912).

GES 4913. Independent Study. (0-0) 3 Credit Hours.

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. (Formerly GRG 4913).

GES 4933. Internship in Geography. (0-0) 3 Credit Hours.

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. (Formerly GRG 4933).

GES 4936. Internship in Geography. (0-0) 6 Credit Hours.

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. (Formerly GRG 4936. Credit cannot be earned for both GRG 4936 and GES 4936.).

GES 4953. Special Studies in Geography. (3-0) 3 Credit Hours.

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 GRG 4953).

GES 4983. Research Practicum. (0-0) 3 Credit Hours.

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 under the guidance of a professor. The student would engage in a professor's research project or another broader research initiative. The student might be involved in data collection, report writing, preparing presentations or publications, or gaining applied research experience working with several students or professors in a collective research environment such as the GIS lab or in the field. (Formerly GRG 4983. Credit cannot be earned for both GRG 4983 and GES 4983.).

GES 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: 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. Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval. 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 enrolling should contact the Department Undergraduate Advisor of Record for additional information. (Formerly GRG 4993).

Geology (GEO)

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.

Geology (GEO) Courses

GEO 1013. The Third Planet. (3-0) 3 Credit Hours. (TCCN = GEOL 1301)

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 Core Curriculum requirement in Life and Physical Sciences. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

GEO 1103. Physical Geology. (3-0) 3 Credit Hours. (TCCN = GEOL 1303)

Prerequisites: Completion of or concurrent enrollment in CHE 1103, CHE 1121, and MAT 1093 or higher, or satisfactory performance on placement exam. Completion of or concurrent enrollment in GEO 1111 required. This course is intended for geology majors and minors as well as others interested in the geologic sciences. It constitutes an introduction to the geology major and skillsets needed by the practicing geologist including; mineral and rock identification, microscopy, deep time, outcrop descriptions, and mapping. The course includes an introduction to the theory of plate tectonics and its relation to the Earth's internal structure, surface features, hydrosphere, earthquakes, and volcanism. One or more field trips may be required. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

GEO 1111. Physical Geology Laboratory. (1-3) 1 Credit Hour. (TCCN = GEOL 1103)

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 may be required. (Formerly titled "Introduction to Earth Systems Laboratory.") Generally offered: Fall, Spring. Course Fees: IUE1 \$15; LRS1 \$5; STSI \$5.

GEO 1123. Life Through Time. (3-0) 3 Credit Hours. (TCCN = GEOL 1304)

Concurrent enrollment in GEO 1131 recommended. A study of the origin and evolution of life on Earth including major events from the beginning of the Earth and solar system to the present, as well as the interaction of life with the lithosphere, atmosphere, and hydrosphere. This course will explore the fossil record, sedimentary rocks, plate tectonics, evolution, and climate change. May apply toward the Core Curriculum requirement in Life and Physical Sciences. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

GEO 1131. Life Through Time Laboratory. (1-3) 1 Credit Hour. (TCCN = GEOL 1104)

Prerequisite: Completion of or concurrent enrollment in GEO 1123. Laboratory and field study of minerals, rocks, fossils, sequences of rocks, and mapping for the interpretation of life through time and the interpretation of Earth history. This course is intended and required for Geological Science majors and minors and will introduce students to many concepts covered in upper level courses. Field trips may be required. Generally offered: Fall, Spring. Course Fees: IUE1 \$15; LRS1 \$5; STSI \$5.

GEO 2003. Mineralogy. (3-0) 3 Credit Hours.

Prerequisites: CHE 1103, CHE 1121, GEO 1103, GEO 1111, MAT 1093 or higher, or satisfactory performance on placement exam. Completion of or 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 may be required. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

GEO 2011. Mineralogy Laboratory. (1-4) 1 Credit Hour.

Corequisite: GEO 2003. Laboratory study of crystal models, crystals, and minerals. Use of physical properties and the petrographic microscope for mineral identification. Field trips may be required. (Formerly GEO 2012. Credit cannot be earned for both GEO 2011 and GEO 2012.) Generally offered: Fall. Course Fees: IUE1 \$15; LRS1 \$5; STSI \$5.

GEO 2113. Fundamentals of Geographic Information Systems (GIS). (2-2) 3 Credit Hours.

Prerequisite: CS 1173 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. (Credit cannot be earned for both GEO 2113 and ES 2113.) Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

GEO 3004. Rocks, Fossils, and Global Tectonics. (2-4) 4 Credit Hours.

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. Course Fees: LRS1 \$20; STSI \$20.

GEO 3013. Fundamentals of Plate Tectonics. (3-0) 3 Credit Hours.

Prerequisites: GEO 1103, GEO 1111, GEO 2003, GEO 2011, and MAT 1093. This course introduces the student to the mechanics of lithospheric plate motion and the physical phenomena driving the motion. The relationships between plate tectonics, mantle convection, and geomagnetism are explored, as well as common structures associated with plate boundaries. Mathematical models are introduced and used to describe plate motion on a sphere. Historical development of plate tectonic theory is also covered. Course Fees: LRS1 \$15; STSI \$15.

GEO 3043. Petrology. (3-0) 3 Credit Hours.

Prerequisites: GEO 2003, GEO 2011, MAT 1214, and completion of or concurrent enrollment in GEO 3051. Description, classification, occurrence, and origin of igneous and metamorphic rocks. Field trips may be required. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

GEO 3051. Petrology Laboratory. (1-4) 1 Credit Hour.

Prerequisites: GEO 2003, GEO 2011, and completion of or concurrent enrollment in GEO 3043. Laboratory study of igneous and metamorphic rocks in hand specimen and thin section. Field trips may be required. (Formerly GEO 3052. Credit cannot be earned for both GEO 3051 and GEO 3052.) Generally offered: Spring. Course Fees: LRS1 \$5; STSI \$5.

GEO 3063. Paleontology. (3-0) 3 Credit Hours.

Prerequisites: GEO 1103, GEO 1111, GEO 1123, GEO 1131, 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 may be required. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

GEO 3071. Paleontology Laboratory. (1-3) 1 Credit Hour.

Prerequisites: GEO 1103, GEO 1111, GEO 1123, GEO 1131, and concurrent enrollment in GEO 3063. Study of fossil specimens, collections, and preparation techniques. Field trips may be required. Generally offered: Fall. Course Fees: IUE1 \$15; LRS1 \$5; STSI \$5.

GEO 3103. Structural Geology. (3-0) 3 Credit Hours.

Prerequisites: GEO 3043, GEO 3051, GEO 3113, and completion of or concurrent enrollment in GEO 3111. Description and origin of geologic structures at the microscopic, hand specimen and mountain scales with emphasis on the response of Earth materials to stress and the role of rheology. Relationships between structure and tectonics will be explored. Field trips may be required. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

GEO 3111. Structural Geology Laboratory. (1-3) 1 Credit Hour.

Prerequisite: Completion of or concurrent enrollment in GEO 3103. Laboratory study of structural features and concepts using maps, cross-sections, photographs, and descriptive geometric and stereographic methods. Field trips may be required. Generally offered: Spring. Course Fees: LRS1 \$5; STSI \$5.

GEO 3113. Geologic Field Investigations. (1-4) 3 Credit Hours.

Prerequisites: GEO 2003 and GEO 2011. Introduction to techniques for studying geologic features and processes in the field, including rock identification, construction of geological maps, orientation analysis, and report writing. Some half-day and Saturday field trips may be required. (Formerly GEO 3112. Credit cannot be earned for both GEO 3112 and GEO 3113.) Generally offered: Fall. Course Fees: IUE1 \$15; LRS1 \$15; STSI \$15.

GEO 3123. Sedimentation and Stratigraphy. (3-0) 3 Credit Hours.

Prerequisites: GEO 2003, GEO 2011, GEO 3063, GEO 3071, and completion of or 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 may be required. (Formerly titled "Sedimentary Geology.") Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

GEO 3131. Sedimentation and Stratigraphy Laboratory. (1-3) 1 Credit Hour.

Prerequisites: GEO 2003, GEO 2011, GEO 3063, GEO 3071, and completion of or 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 may be required. (Formerly titled "Sedimentary Geology Laboratory.") Generally offered: Spring. Course Fees: IUE1 \$15; LRS1 \$5; STSI \$5.

GEO 3143. Economic Geology. (3-0) 3 Credit Hours.

Prerequisites: GEO 2003, GEO 2011, and completion of or concurrent enrollment in GEO 3151. Origin and occurrence of economic natural resources including metallic ore deposits, industrial minerals, and fossil fuels. Field trips may be required. Course Fees: LRS1 \$15; STSI \$15.

GEO 3151. Economic Geology Laboratory. (1-3) 1 Credit Hour.

Prerequisites: GEO 2003, GEO 2011, and completion of or concurrent enrollment in GEO 3143. Laboratory study of ore specimens and industrial minerals from important ore localities. Field trips may be required. Course Fees: IUE1 \$15; LRS1 \$5; STSI \$5.

GEO 3163. Oceanography. (3-0) 3 Credit Hours.

General oceanography, with emphasis on marine geology and especially the continental margins. An optional field trip may be offered. (Credit cannot be earned for both GEO 3163 and ES 3133.) Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

GEO 3173. Polar Regions and Climate Change. (3-0) 3 Credit Hours.

This course covers properties, areal distribution, seasonal change and climatic change of the major constituents of the Polar Regions: the large ice sheets of Greenland and Antarctica; seasonal snow cover in the high and mid latitudes; sea ice covers in the Arctic, Southern Ocean and other seas; mountain glaciers from the tropics to the polar regions; and permafrost in the high latitude land areas of the Northern Hemisphere. How to examine these constituents will be presented with illustrative examples of monitoring of climate-induced changes in the Polar Regions using remote sensing and field investigations of processes and properties. Applications discussed will include: snow and ice covers as agents of geological change; snow and ice impacts as water resources in Asia and western North America, and global environmental impact through for example, effects on the earth's radiation budget, and contributions to sea level change. Human impacts covered will include effects of ice covers of rivers and sea ice such as on petroleum extraction, transportation and navigation, frost and freezing damage to crops, and hazards of blizzards and avalanches. Course Fees: LRS1 \$15; STSI \$15.

GEO 3343. Introduction to Geospatial Technologies. (3-0) 3 Credit Hours.

This course introduces several aspects of geospatial technologies, not only what they are but how they are used in hands-on applications, all based on free internet resources not commercial software packages. This course provides a solid foundation on which further knowledge in more specialized classes, such as Geographic Information Systems, Global Positioning Systems, and Remote Sensing, can be built on. Course Fees: LRS1 \$15; STSI \$15.

GEO 3374. Geochemistry. (2-4) 4 Credit Hours.

Prerequisites: GEO 1103, GEO 1111, CHE 1103, CHE 1121, and MAT 1093. 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. Generally offered: Fall. Course Fees: IUE1 \$15; LRS1 \$20; STSI \$20.

GEO 3383. General Geophysics. (3-0) 3 Credit Hours.

Prerequisites: Completion of or concurrent enrollment in MAT 1224 and PHY 1963. 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 may be required. Course Fees: LRS1 \$15; STSI \$15.

GEO 3393. Introduction to Isotope Geochemistry. (3-0) 3 Credit Hours.

Prerequisites: GEO 1103, GEO 1111, CHE 1103, CHE 1121, and MAT 1214. 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. Course Fees: LRS1 \$15; STSI \$15.

GEO 4013. Volcanology. (3-0) 3 Credit Hours.

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 may be required. Course Fees: LRS1 \$15; STSI \$15.

GEO 4023. Engineering Geology. (3-0) 3 Credit Hours.

Prerequisites: PHY 1963 (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. May not be applied to a major in geology. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

GEO 4033. Profession of Geology. (3-0) 3 Credit Hours.

Prerequisites: GEO 2113, GEO 3123, GEO 3131, GEO 3113. This course is designed to provide the basic knowledge required by the ASBOG National Geologist Examination (Fundamentals) for licensure as a Professional Geologist, and introduces the geoscience student to the fundamentals of professional practice that impact, health, safety, and well-being of the public. The emphasis will be on principles and practices of geoscience that affect the economy, feasibility and design of engineering works, sitting criteria, site selection and investigation, human-land interactions, site assessment, liability, responsibility, professional report writing, and licensure. Course Fees: LRS1 \$15; STSI \$15.

GEO 4063. Advanced Environmental Geology. (3-0) 3 Credit Hours.

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, coastal hazards, energy resources, and climate change. The meaning of "sustainability" as a long-term concept and tools to assess and work with Earth systems to avoid endangering human life and property are also topics that are applied and addressed. GEO 4063 is a writing intensive course and project management skills are utilized in working on geologic investigations and solutions for resource management and in analyzing and mitigating natural hazard events. Course Fees: LRS1 \$15; STSI \$15.

GEO 4093. Principles of Remote Sensing. (2-2) 3 Credit Hours.

Prerequisites: MAT 1214 or higher and PHY 1943. 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. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

GEO 4113. Geomorphology. (3-0) 3 Credit Hours.

Prerequisites: GEO 1103 or GES 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. Course Fees: LRS1 \$15; STSI \$15.

GEO 4121. Geomorphology Laboratory. (1-3) 1 Credit Hour.

Prerequisites: GEO 1103 or GES 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 may be required. Course Fees: IUE1 \$15; LRS1 \$5; STSI \$5.

GEO 4623. Groundwater Hydrogeology. (3-0) 3 Credit Hours.

Prerequisites: GEO 1103, GEO 1111, PHY 1943, and MAT 1214. Hydrologic cycle and the occurrence and movement of groundwater. Recharge and discharge of aquifers; water quality; exploration and development of ground-water supplies. Field trips may be required. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

GEO 4911. Independent Study. (0-0) 1 Credit Hour.

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. Course Fees: LRS1 \$5; STSI \$5.

GEO 4912. Independent Study. (0-0) 2 Credit Hours.

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. Course Fees: LRS1 \$10; STSI \$10.

GEO 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fees: LRS1 \$15; STSI \$15.

GEO 4933. Field Geology Part I. (1-6) 3 Credit Hours.

Prerequisites: GEO 3103, GEO 3111, GEO 3123, and GEO 3131 or consent of instructor. Part I: Field mapping and measurements. Field trips are required. Course Fees: LRS1 \$15; STSI \$15.

GEO 4943. Field Geology Part II. (1-6) 3 Credit Hours.

Prerequisite: GEO 4933 or consent of instructor. Part II: Field mapping and measurements. Field trips are required. Course Fees: LRS1 \$15; STSI \$15.

GEO 4951. Special Studies in Geology. (1-0) 1 Credit Hour.

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. Course Fees: LRS1 \$5; STSI \$5.

GEO 4952. Special Studies in Geology. (2-0) 2 Credit Hours.

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. Course Fees: LRS1 \$10; STSI \$10.

GEO 4953. Special Studies in Geology. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

GEO 4961. Special Studies in Geology Laboratory. (1-3) 1 Credit Hour.

Prerequisite: Consent of instructor. An organized laboratory 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.

GEO 4993. Honors Research. (0-0) 3 Credit Hours.

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. Course Fees: LRS1 \$15; STSI \$15.

German (GER)

German (GER) Courses

GER 1014. Elementary German I. (3-2) 4 Credit Hours. (TCCN = GERM 1411)

Fundamentals of German offering the opportunity to develop listening, reading, speaking, and writing skills. Introduction to German culture. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall. Course Fees: LRC1 \$16; LRLF \$10; MM01 \$7.

GER 1024. Elementary German II. (3-2) 4 Credit Hours. (TCCN = GERM 1412)

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. Generally offered: Spring. Course Fee: MM01 \$7.

GER 2013. Intermediate German I. (3-1) 3 Credit Hours. (TCCN = GERM 2311)

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. Generally offered: Fall. Course Fees: LRLF \$10; MM01 \$7.

GER 2023. Intermediate German II. (3-1) 3 Credit Hours. (TCCN = GERM 2312)

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. Generally offered: Spring. Course Fee: MM01 \$7.

GER 2333. German Literature in English Translation. (3-0) 3 Credit Hours.

Major works of German literature across time, genres, and movements. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly GER 3333. Credit cannot be earned for both GER 2333 and GER 3333.) Course Fees: LRC1 \$12; LRLF \$10; MM01 \$7.

GER 2023. Advanced Language Skills. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

GER 3413. Survey of German Literature and Culture. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

GER 4003. Topics in German Literature. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

GER 4213. Topics in German Culture and Linguistics. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fee: MM01 \$7.

GER 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

GER 4933. Internship in German. (0-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

GER 4953. Special Studies in German. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

GER 4993. Honors Research. (0-0) 3 Credit Hours.

Prerequisite: Consent of the undergraduate advisor. Supervised research and preparation of an honors thesis. May be repeated once for credit, with approval. Course Fee: MM01 \$7.

Global Affairs (GLA)

Correction to GLA 2603: Credit *cannot* be earned for both GLA 2603 and POL 2603.

Global Affairs (GLA) Courses

GLA 1013. U.S. in the Global Arena. (3-0) 3 Credit Hours.

This course assists students in understanding the context in which United States interacts with the rest of the world and the mutual effects of that relationship. It traces the history and evolution of the United States' involvement in global affairs and why and how what happens in the world matters for the U.S. and vice-versa. Issues to be discussed may include globalization, low politics, international banking, multinationals, health issues, the environment, terrorism, security, food, technology, international communication, and other intermestic issues. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRLF \$10.

GLA 2103. Introduction to Intelligence Studies. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course examines the historical developments of intelligence as a component of defense and security policy, mainly in the post-World War II era. It considers the evolution of U.S. and selected other intelligence functions as parts of their respective security systems, and the basic principles associated with intelligence in various forms of regime governance ranging from democratic to authoritarian. Examines legal foundations of the American intelligence functions, including accountability and control measures. Provides an overview of policy making processes incorporating the role of intelligence in national security decisions mainly in democratic societies. Outlines the operational aspects of intelligence.

GLA 2203. Introduction to Security Studies: Theory and Policy. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course introduces undergraduates to the principal theories used in security studies and to major security issues faced by the United States in the post-Cold War world. The course is divided into two parts: First, theories of international politics, grand strategy, deterrence, and coercion, to provide students with an analytical framework for understanding major security issues today and in the future. The second addresses prominent security studies policy issues, such as Russia, NATO, and contemporary European security, the rise of China, cyber warfare, nuclear proliferation and its consequences, roles and missions of the U.S. military, and terrorism. This course may not be repeated for credit.

GLA 2603. Introduction to Global Affairs. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course introduces students to the study of global affairs. Among others, it will cover topics such as conflict and security, international organization(s) and order, economic development, international aid and trade, transnationalism, human rights, as well as the environment. These topics are introduced to illustrate past and current theoretical approaches and themes in the study of global affairs. As such, the course provides an overview of the intellectual development of the subfield and defines its subject matters. (Same as POL 2603. Credit can be earned for both GLA 2603 and POL 2603).

GLA 2633. Comparative Politics. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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. (Same as POL 2633. Credit cannot be earned for both GLA 2633 and POL 2633.).

GLA 3003. International Law. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course evaluates the ways that international law affects world politics. Emphasis is on the foundations and substantive rules of international law and national politics. Topics may include the laws of war, war crimes, terrorism, human rights, economic exchange and natural resources.

GLA 3033. International Governance. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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. (Same as POL 3033. Credit cannot be earned for both GLA 3033 and POL 3033.).

GLA 3043. International Human Rights. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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. (Same as POL 3043. Credit cannot be earned for both GLA 3043 and POL 3043.).

GLA 3103. Research Methods in Global Affairs. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course introduces students to a range of methodological approaches relevant to studies of global problems and international relations. Students will study relevant background debates in the philosophy of the social sciences, consider examples of contemporary research designs associated with global problems and international relations, and learn how to craft research questions that address real world challenges. Course may include a range of methodological approaches including quantitative methods (e.g. measures of central tendency and dispersion, regression, and problems of description and inference, etc.), qualitative methods (e.g. comparative case studies, content analysis, and discourse analysis, etc.). Course may require the use of standard computer packages and secondary analysis of data.

GLA 3213. Theories of International Relations. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course provides an overview of theoretical debates and conceptual frameworks for the study of international relations. It examines a range of theoretical models important to explaining how the world works including but not limited to, classical and structural realism, liberalism, global society/complex interdependence/liberal institutionalism, Marxism/dependency, constructivism, and critical theories including feminism and post-modernism. The course also may introduce frameworks for the study of foreign policy decision making such as bureaucratic and organizational politics, and small group politics.

GLA 3233. Theories of International Justice. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course explores the nature of justice in a globalized political world. It raises questions such as whether a single standard of justice (e.g., human rights) can legitimately be applied to all cultures across the world, and examines the nature of our obligations to individuals in other countries given the economic and political interdependency of all peoples. Some attention may also be given to particular topics such as immigration policy and the use of foreign military intervention for humanitarian purposes.

GLA 3383. East European Politics. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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. (Same as POL 3383. Credit cannot be earned for both GLA 3383 and POL 3383.).

GLA 3393. Latin American Politics. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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. (Same as POL 3393. Credit cannot be earned for both GLA 3393 and POL 3393.).

GLA 3403. European Governments. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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. (Same as POL 3403. Credit cannot be earned for both GLA 3403 and POL 3403.).

GLA 3423. Geopolitics of Russia and Eurasia. (3-0) 3 Credit Hours.

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 GES 3423 and POL 3423. Credit cannot be earned for more than one of the following: GLA 3423, GES 3423, GRG 3423, or POL 3423.).

GLA 3433. Governments and Politics of Southeast Asia. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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. (Same as POL 3433. Credit cannot be earned for both GLA 3433 and POL 3433.).

GLA 3443. Governments and Politics of East Asia. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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. (Same as POL 3443. Credit cannot be earned for both GLA 3443 and POL 3443.).

GLA 3453. Politics of Mexico. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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. (Same as POL 3453. Credit cannot be earned for both GLA 3453 and POL 3453.).

GLA 3463. Politics of the Third World. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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. (Same as POL 3463. Credit cannot be earned for both GLA 3463 and POL 3463.).

GLA 3473. Latin America in the World. (3-0) 3 Credit Hours.

Prerequisite: POL 1013 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. (Same as POL 3473. Credit cannot be earned for both GLA 3473 and POL 3473.).

GLA 3483. International Political Economy. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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. (Same as POL 3483. Credit cannot be earned for both GLA 3483 and POL 3483.).

GLA 3493. Politics of the Middle East. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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. (Same as POL 3493. Credit cannot be earned for both GLA 3493 and POL 3493.).

GLA 3503. American Foreign Policy since World War II. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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. (Same as POL 3503. Credit cannot be earned for both GLA 3503 and POL 3503.).

GLA 3513. International Organizations in World Politics. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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. (Same as POL 3513. Credit cannot be earned for both GLA 3513 and POL 3513.).

GLA 3523. Force in International Politics. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course engages with experiences of violence in IR. It provides an examination of modern research into the use of coercion in international relations with a focus on economic sanctions, war, and terrorism. Special emphasis will be placed on the causes, trends, and consequences of interstate wars. Topics may include armed conflict, trauma and suffering, laws of war, representation of war in media, peace movements, and the technologies of peace making. (Same as POL 3523. Credit cannot be earned for both POL 3523 and GLA 3523).

GLA 3533. The United Nations. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. The course introduces students to the organization's history, structure, operations, and role in the international system. It examines the historical context of the UN's founding and its functions, processes of institutional reform and change, as well as the successes and failures of the organization, in order to understand the UN's role in contemporary world politics. Topics may include the integration of new issues beyond its traditional focus on peace and security, as well as of new actors, such as nongovernmental organizations and multinational enterprises.

GLA 3543. Diplomacy. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. The course explores the impact of modern diplomacy on global affairs through the conduct of foreign policy and external representation. It highlights the historical and theoretical settings of international negotiations, treaties, alliances, agreements, and the practical ways in which foreign policy is implemented. Topics may include classical diplomacy, international business diplomacy, public diplomacy, multilateral diplomacy, and case studies that examine the complexity and build skills for dealing with global issues.

GLA 3563. Current Issues in World Politics. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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. (Same as POL 3563. Credit cannot be earned for both GLA 3563 and POL 3563.).

GLA 3593. Topics in Latin American Security. (3-0) 3 Credit Hours.

Prerequisite: POL 1013 or GLA 1013. This seminar examines key questions for regional security in Latin America. Although drawing on scholarly and historical materials, this course focuses essentially on contemporary regional security and includes general topics, such as regional security, peace and war in Latin America, civil-military relations, drug trafficking, and public security. The cases are selected in part to provide geographical balance and contemporary relevance, but also to demonstrate the contrasts between traditional and emerging security questions in the region. (Same as POL 3593. Credit cannot be earned for both GLA 3593 and POL 3593.).

GLA 3613. Nationalism and Identity Politics in a Globalizing World. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. The course traces the evolution of national politics in the context of globalization. It explores the concepts of culture, identity, nation, nationalism, citizenship, and cosmopolitanism in motion as a relationship between state and society, majorities and minorities, migrants and citizens, and localism and globalism. The course spans case studies and thematic analyses in a global perspective. Topics may include politics in divided societies, states and regions, ethnic conflict, secession, nationalism and war, radical-right populism, post-nationalism, diaspora, and multiculturalism, among others.

GLA 3633. Political Economy. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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. (Same as POL 3633. Credit cannot be earned for both GLA 3633 and POL 3633.).

GLA 3733. National Security Law. (3-0) 3 Credit Hours.

Prerequisites: POL 1013 and one of the following: PAL 3013, POL 3323, POL 3333, or consent of instructor. This course surveys the American national security law regime. It examines the Constitutional basis for national security measures, the roles played by the different branches of the government, and the unique powers of the President in this field. Topics include electronic surveillance; covert action; apprehension, detention, and interrogation of suspects; the USA Patriot Act; the effect of international law; the management of the national security apparatus both domestically and abroad; and the applicability of doctrines such as the State Secrets Privilege.

GLA 3763. Globalization. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course examines normative and empirical issues in globalization debates, such as the role of states and nonstate 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. (Formerly INS 3763. Same as POL 3763. Credit cannot be earned for more than one of the following: GLA 3763, INS 3763, or POL 3763.).

GLA 3783. Democracy and World Politics. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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. (Same as POL 3783. Credit cannot be earned for both GLA 3783 and POL 3783.) (Formerly titled "Comparative Democratization").

GLA 4123. Advanced Techniques in Global Affairs. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or 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 POL 4023. Credit cannot be earned for both GLA 4123 and POL 4023.) Generally offered: Fall.

GLA 4133. Conflict, Law, and Security in Global Affairs. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course offers students an opportunity to closely examine the causes, dynamics, and dilemmas associated with conflict on the modern global stage. Issues under discussion may include intra- and interstate conflicts; nationalism and conflict; economic, social, and political costs and implications of conflict; national and international approaches to conflict resolution, reconstruction, and development; human rights principles and questions of international law and justice; debates about humanitarian interventions; population displacements; the range of security concerns and responses by government actors and institutions; and the viability of nation states in protecting individuals, groups, and institutions of governance.

GLA 4163. Model UN. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. GLA 3533 is recommended. The course introduces students to the United Nations and the world of Model UN. The class will discuss the organization's history, structure, operations, and role in the international system. Applying this knowledge in educational simulation, the class will engage students in modelling the UN. This will include hosting a Model UN as well as competing nationally as delegates. As such, the class will solidify substantial knowledge on the UN as well as provide logistical project management skills. (Same as POL 4163. Credit cannot be earned for both GLA 4163 and POL 4163.).

GLA 4213. The Intelligence Community in World Affairs. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Advanced study of key historical developments of U.S. and other intelligence functions in national and international security. Examines a broad range of issues and case studies such as collection and analytical methods, measures of success and failure of intelligence operations, agency organizational problems, accuracy and accountability, counterintelligence and covert operations, threats to homeland security, constitutional and legislative roles, liaison relationships, and challenges in executive-legislative interactions in the policy making process. (Same as POL 4213. Credit cannot be earned for both GLA 4213 and POL 4213. Formerly GLA 4013 and POL 4013.) Generally offered: Spring.

GLA 4243. Terrorism and Counter-Terrorism. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course examines the issues of contemporary terrorism and counter-terrorism. It provides an overview of domestic and international terrorism as well as an analysis of some of the underlying ideological and non-ideological factors promoting this form of violence. The course also evaluates State responses to acts of terrorist violence and explores the various strategies developed to preempt and prevent them.

GLA 4434. Cyber Warfare and International Politics. (3-2) 4 Credit Hours.

Prerequisite: POL 1013. This course addresses emerging international relations, policy, doctrine, strategy, and operational issues associated with Computer Network Attack (CNA), Computer Network Defense (CND), and Computer Network Exploitation (CNE)—collectively referred to as cyber warfare. It provides students with a comprehensive perspective and enhances their knowledge of cyber warfare conducted by both state and non-state actors, as well as deterrence of cyber-attacks.

GLA 4853. Study Abroad: Global Affairs. (3-0) 3 Credit Hours.

Prerequisite: Permission of instructor. A lecture course associated with a study abroad program. Involves international travel and field trips. May be repeated for credit when the destination country varies.

GLA 4856. Study Abroad: Global Affairs. (6-0) 6 Credit Hours.

Prerequisite: Permission of instructor. A seminar course associated with a study abroad program exploring global perspectives on politics, geography, and governance. Involves international travel and field trips. May be repeated for credit depending on host country/destination.

GLA 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: GLA 1013 and Independent Study Course Form signed by 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.

GLA 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: GLA 1013 and Independent Study Course Form signed by 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.

GLA 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: GLA 1013 and Independent Study Course Form signed by 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.

GLA 4933. Internship in Global Affairs. (0-0) 3 Credit Hours.

Prerequisites: GLA 1013 and consent of the internship coordinator and Department Chair. Supervised experience relevant to global affairs within selected community and national organizations. A maximum of 6 semester credit hours may be earned through the internship.

GLA 4936. Internship in Global Affairs. (0-0) 6 Credit Hours.

Prerequisites: GLA 1013 and consent of the internship coordinator and Department Chair. Supervised experience relevant to global affairs within selected community and national organizations. A maximum of 6 semester credit hours may be earned through the internship.

GLA 4953. Special Studies in Global Affairs. (3-0) 3 Credit Hours.

Prerequisite: GLA 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.

GLA 4973. Senior Seminar. (3-0) 3 Credit Hours.

Prerequisites: GLA 1013 and POL 2693. 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, up to an additional 3 credits. Enrollment limited to juniors and seniors majoring in Global Affairs.

GLA 4983. Research Practicum. (0-0) 3 Credit Hours.

Prerequisites: GLA 1013 and 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 global affairs. Students participate in hands-on research experience on the issue in a collective research environment. Potential research may be related to the Social Research Lab or Study Abroad programs.

GLA 4993. Honors Thesis. (0-0) 3 Credit Hours.

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. Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval. 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 enrolling should contact the Department Undergraduate Advisor of Record for additional information.

Greek (GRK)

Greek (GRK) Courses

GRK 1114. Introductory Classical Greek I. (3-2) 4 Credit Hours.

Fundamentals of Greek grammar and readings in Greek. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall. Course Fees: LRC1 \$16; LRLF \$10.

GRK 1124. Introductory Classical Greek II. (3-2) 4 Credit Hours.

Fundamentals of Greek grammar and readings in Greek. Generally offered: Spring.

GRK 2113. Intermediate Classical Greek I. (3-0) 3 Credit Hours.

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. Course Fee: LRLF \$10.

GRK 3123. Selected Greek Authors: Poetry. (3-0) 3 Credit Hours.

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)

NOTE: All prerequisites for Health (HTH) courses must be completed with a grade of "C-" or better.

Health (HTH) Courses

HTH 2133. School Health. (3-0) 3 Credit Hours. (TCCN = TECA 1318)

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. Offered Spring Semester only. Course Fees: LRH1 \$10; STSH \$15.

HTH 2413. Introduction to Community and Public Health. (3-0) 3 Credit Hours.

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. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRH1 \$10; STSH \$15.

HTH 2513. Personal Health. (3-0) 3 Credit Hours. (TCCN = PHED 1304)

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. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRH1 \$10; STSH \$15.

HTH 2601. Field-Based Skills in Community Health and Preventive Services. (1-0) 1 Credit Hour.

Prerequisite: HTH 2413. This course introduces students to practices and skills that are commonly used in community health and preventive health services. These include health screening skills and skills for communicating and interpreting screening results. The course offers hands-on practice of these skills. Course Fees: KSM1 \$10; LRH1 \$10; STSH \$5.

HTH 2623. Database Management in Community and Public Health. (3-0) 3 Credit Hours.

This course will focus on practical issues in database management. Students will learn how to perform basic query and reporting operations, migrate data between various file formats, share data using cloud data management systems such as Dropbox, prepare data for statistical analysis, conduct statistical analyses common in community and public health, perform data quality control and assurance procedures and develop formal documents for reporting outcomes. Database management and statistical software such as SPSS, Microsoft Access and SQL will be used. (Formerly titled "Applied Technology for Research and Health Education.") Course Fees: LRH1 \$10; STSH \$15.

HTH 3003. Survey of Drugs and Health. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

HTH 3013. Survey of Human Nutrition. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

HTH 3023. Survey of Human Sexuality. (3-0) 3 Credit Hours.

A study examining the breadth of human sexuality, including psychosocial, cultural and physical aspects, and its impact on our lives. Course Fees: LRH1 \$10; STSH \$15.

HTH 3043. Principles of Weight Management. (3-1) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: LRH1 \$10; STSH \$15.

HTH 3303. Physical Activity and Health. (3-0) 3 Credit Hours.

Prerequisites: HTH 3503 and HTH 3663. 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. Generally offered: Fall. Course Fees: LRH1 \$10; STSH \$15.

HTH 3503. Theories of Health Behavior. (3-0) 3 Credit Hours.

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.") Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

HTH 3513. Community Health. (3-0) 3 Credit Hours.

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. Course Fees: LRH1 \$10; STSH \$15.

HTH 3523. Worksite Health Promotion. (3-0) 3 Credit Hours.

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. Course Fees: LRH1 \$10; STSH \$15.

HTH 3533. Drugs and Health. (3-0) 3 Credit Hours.

Prerequisites: Completion of Core science requirements, anatomy and physiology, HTH 2413, HTH 3503, and HTH 3663. 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. Course Fees: LRH1 \$10; STSH \$15.

HTH 3543. Growth and Development. (3-0) 3 Credit Hours.

Physical, social, and psychological development throughout the lifespan. Implications for health professionals at all stages of development (prenatal to death) are addressed. Offered Spring Semester only. Course Fees: LRH1 \$10; STSH \$15.

HTH 3553. Emotional Wellness. (3-0) 3 Credit Hours.

Practical application of techniques for shaping healthier emotional behavior; emphasis on personality, stress management, and fulfilling relationships. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

HTH 3563. Child and Adolescent Health Promotion. (3-0) 3 Credit Hours.

Designed for students who are interested in promoting the health of youth, as well as those students pursuing academic training in education and community health. 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. Course Fees: LRH1 \$10; STSH \$15.

HTH 3663. Program Planning and Evaluation. (3-0) 3 Credit Hours.

Prerequisites: HTH 2413 and HTH 3503. This course provides students with a basic understanding of planning, implementing, and evaluating health promotion programs in a variety of settings, including worksite, healthcare, and community and at a various levels (individual, organization, community, policy.) Course Fees: LRH1 \$10; STSH \$15.

HTH 4503. Human Disease and Epidemiology. (3-0) 3 Credit Hours.

An in-depth look at the etiology, prevention, and treatment of chronic and contagious diseases afflicting humans and epidemiological methods. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

HTH 4513. Consumer Health. (3-0) 3 Credit Hours.

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. Course Fees: LRH1 \$10; STSH \$15.

HTH 4523. Understanding Human Sexuality. (3-0) 3 Credit Hours.

Prerequisites: HTH 2413, HTH 3503, and HTH 3663. 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. Course Fees: LRH1 \$10; STSH \$15.

HTH 4533. Nutrition and Health. (3-0) 3 Credit Hours.

Prerequisites: Completion of Core science and mathematics requirements, BIO 2053, BIO 2063, HTH 2413, HTH 3013, HTH 3503, and HTH 3663. 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. Generally offered: Fall. Course Fees: LRH1 \$10; STSH \$15.

HTH 4543. Environmental Health and Safety. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

HTH 4911. Independent Study. (0-0) 1 Credit Hour.

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. Course Fee: STSH \$5.

HTH 4913. Independent Study. (0-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fee: STSH \$15.

HTH 4921. Capstone for Community Health and Preventive Services. (1-0) 1 Credit Hour.

Corequisite: Must be completed the same semester as internship (HTH 4936). This course aids students in synthesizing their classroom and internship experiences to reinforce critical skills and key responsibilities for Health Educators. This course will provide students with an overview of resources, skills, and recommendations regarding their professional development. Students are required to take this course concurrent with HTH 4936. Course Fees: LRH1 \$10; STSH \$5.

HTH 4936. Internship in Health. (0-0) 6 Credit Hours.

Prerequisites: Student is required to have a cumulative grade point average of 2.0 or greater and must be within 13 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.) Generally offered: Fall, Spring, Summer. Course Fees: STFK \$57; STSH \$30.

HTH 4951. Special Studies in Health. (1-0) 1 Credit Hour.

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. Course Fees: LRH1 \$10; STSH \$5.

HTH 4952. Special Studies in Health. (2-0) 2 Credit Hours.

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. Course Fees: LRH1 \$10; STSH \$10.

HTH 4953. Special Studies in Health. (3-0) 3 Credit Hours.

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. Course Fees: LRH1 \$10; STSH \$15.

HTH 4993. Honors Thesis. (0-0) 3 Credit Hours.

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. Course Fee: STSH \$15.

History (HIS)

History (HIS) Courses

HIS 1043. United States History: Pre-Columbus to Civil War Era. (3-0) 3 Credit Hours. (TCCN = HIST 1301)

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. May be applied toward the Core Curriculum requirement in American History. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

HIS 1053. United States History: Civil War Era to Present. (3-0) 3 Credit Hours. (TCCN = HIST 1302)

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. May be applied toward the Core Curriculum requirement in American History. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

HIS 2003. Historical Methods. (3-0) 3 Credit Hours.

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. A minimum grade of "C-" is needed in HIS 2003 to enroll in HIS 4973. Generally offered: Fall, Spring.

HIS 2053. Texas History. (3-0) 3 Credit Hours. (TCCN = HIST 2301)

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. May be applied toward the Core Curriculum requirement in American History. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRLF \$10.

HIS 2123. Introduction to World Civilization to the Fifteenth Century. (3-0) 3 Credit Hours. (TCCN = HIST 2321)

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. This course is always offered as a Q-course. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Credit cannot be earned for both HIS 2123 and IDS 2203.) Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

HIS 2133. Introduction to World Civilization since the Fifteenth Century. (3-0) 3 Credit Hours. (TCCN = HIST 2322)

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Credit cannot be earned for both HIS 2133 and IDS 2213.) Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

HIS 2533. Introduction to Latin American Civilization. (3-0) 3 Credit Hours.

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRLF \$10.

HIS 2543. Introduction to Islamic Civilization. (3-0) 3 Credit Hours.

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall. Course Fees: LRC1 \$12; LRLF \$10.

HIS 2553. Introduction to East Asian Civilization. (3-0) 3 Credit Hours.

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Course Fees: LRC1 \$12; LRLF \$10.

HIS 2563. Introduction to European Civilization. (3-0) 3 Credit Hours.

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.

HIS 2573. Introduction to African Civilization. (3-0) 3 Credit Hours.

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Course Fees: LRC1 \$12; LRLF \$10.

HIS 2583. Introduction to South Asian Civilization. (3-0) 3 Credit Hours.

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Course Fees: LRC1 \$12; LRLF \$10.

HIS 3003. Colonial America and the Formation of American Society. (3-0) 3 Credit Hours.

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. Generally offered: Fall.

HIS 3023. American Independence and National Unity, 1760–1820. (3-0) 3 Credit Hours.

Topics may include origins of the American Revolution, the Revolutionary War, the struggle for unity, and the early years of nationhood.

HIS 3033. The Spanish and Mexican Borderlands. (3-0) 3 Credit Hours.

This course will provide students an opportunity to study Spanish exploration, the colonization of New Spain's northern frontier, and the shift from Spanish to Mexican sovereignty. Topics that may be discussed include Hispanic institutions; customs and traditions; the development of a frontier society; inter-cultural exchanges, conflicts, and negotiations between native societies, Spanish-Mexican settlers, and non-Hispanic European Americans and immigrants; Mexico's struggle for independence; social, cultural, economic, and political trends within the Mexican republic; the westward migration of people from the United States into Mexico's northern frontier; the Texas revolt, and the U.S.-Mexico War.

HIS 3043. History of Women in the United States: Pre-Columbus to 1890. (3-0) 3 Credit Hours.

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).

HIS 3053. History of Women in the United States: Since 1890. (3-0) 3 Credit Hours.

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.) Generally offered: Spring.

HIS 3083. History of the American West. (3-0) 3 Credit Hours.

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.

HIS 3093. United States Constitutional History. (3-0) 3 Credit Hours.

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 I.

HIS 3113. North American Indian Histories. (3-0) 3 Credit Hours.

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").

HIS 3123. Colonial Texas under Spanish and Mexican Rule to 1836. (3-0) 3 Credit Hours.

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.

HIS 3173. Modern America, 1914–1945. (3-0) 3 Credit Hours.

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.

HIS 3183. Law and American Development. (3-0) 3 Credit Hours.

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.

HIS 3193. The South in American History. (3-0) 3 Credit Hours.

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.

HIS 3223. The Civil War in the Age of Nationalism. (3-0) 3 Credit Hours.

The U.S. Civil War occurred during an age of violent political upheaval in Europe and the Americas. Grounding the significance of the causes of the Civil War in a transnational context, this course will examine how questions of national self-determination, race, and class the world over influenced the growing differences between the American North and South, as well as the war itself. Setting the Civil War in an international context, this course will enlarge the understanding of the global rise of nationalism in the nineteenth century.

HIS 3243. Europe in the Nineteenth Century. (3-0) 3 Credit Hours.

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.

HIS 3253. The United States since 1945. (3-0) 3 Credit Hours.

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.

HIS 3263. Seventeenth- and Eighteenth-Century Europe. (3-0) 3 Credit Hours.

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.

HIS 3273. The Early Middle Ages. (3-0) 3 Credit Hours.

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.

HIS 3283. Twentieth-Century Europe. (3-0) 3 Credit Hours.

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.

HIS 3293. Imperial Spain. (3-0) 3 Credit Hours.

The history of Spain and its empire from the fifteenth to the early nineteenth century. Topics may include the union of Castile and Aragon, Hapsburg imperialism, the conquest of the Americas, transatlantic and transpacific exchange, the Bourbon reforms, and the Spanish American wars for independence.

HIS 3303. History of Mexico. (3-0) 3 Credit Hours.

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. Generally offered: Spring.

HIS 3313. History of U.S. Relations with Latin America. (3-0) 3 Credit Hours.

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.

HIS 3323. Mexican American History to 1900. (3-0) 3 Credit Hours.

This course surveys the origins of Mexican Americans in the United States from the point of contact between indigenous people and Spanish colonizers to 1900. Thematic topics may include conquest, Spanish colonization, the development of borderlands cultures, migratory and settlement patterns, gendered borderlands, 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 Mexican Americans tied to this land.

HIS 3333. Mexican American History since 1900. (3-0) 3 Credit Hours.

This course surveys the history of Mexican Americans in the modern United States from 1900 to the present. Covering the period of the greatest migratory flows into the United States from Mexico, this course will address the development of transnational communities and regional identities within the U.S. Emphasis will be placed on such topics as the dialectic between immigration and historically rooted communities, the formation of varied racial and class based identities, civil rights, labor, changing gender roles, and the dynamic geographies of North America.

HIS 3353. Latin America since Independence. (3-0) 3 Credit Hours.

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.

HIS 3363. History of Cuba. (3-0) 3 Credit Hours.

Survey of Cuban history since the fifteenth century. Particular attention is given to revolutionary movements of the nineteenth and twentieth centuries that have variously sought national independence, slave liberation and Afro-Cuban rights, political and economic sovereignty, a just government, and socioeconomic equity.

HIS 3373. Revolution in Latin America. (3-0) 3 Credit Hours.

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.

HIS 3393. Women in Mexican History. (3-0) 3 Credit Hours.

Study of selected issues in the history of women in Mexico, with focus on both texts and contexts. Texts may include writings and artistic works by Mexican American as well as Mexican women. Contexts may include the eve of the Spanish invasion and the conquest era, native and colonial societies in the colonial era, independence and the upheavals of the nineteenth century, the Mexican Revolution, the sweeping social and economic changes of the twentieth century, migration to the United States, globalization, and the drug war of recent years.

HIS 3403. Pre-Hispanic and Colonial Latin America. (3-0) 3 Credit Hours.

An analysis of the pre-Columbian Indian civilizations, the Spanish conquest, and the Spanish and Portuguese colonial societies of the New World.

HIS 3423. United States-Mexico Border. (3-0) 3 Credit Hours.

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.

HIS 3433. The Emergence of Modern America, 1877–1914. (3-0) 3 Credit Hours.

An examination of social and political responses to the industrial revolution in the United States.

HIS 3453. History of Medicine in America. (3-0) 3 Credit Hours.

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.

HIS 3463. History of Religion in the United States. (3-0) 3 Credit Hours.

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.

HIS 3493. History of San Antonio. (3-0) 3 Credit Hours.

Topics may include the cultural origins of colonial San Antonio; political, economic, and social development; and the effects of urbanization on local ethnic communities.

HIS 3513. Warfare in the Premodern World. (3-0) 3 Credit Hours.

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.

HIS 3523. European Cultural History. (3-0) 3 Credit Hours.

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.

HIS 3543. History of Modern Warfare. (3-0) 3 Credit Hours.

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.

HIS 3553. Civil War America. (3-0) 3 Credit Hours.

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. Generally offered: Spring.

HIS 3563. African American History to the Civil War. (3-0) 3 Credit Hours.

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.

HIS 3573. African American History since the Civil War. (3-0) 3 Credit Hours.

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.

HIS 3603. Occupation, Revolution and Nation in Africa. (3-0) 3 Credit Hours.

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").

HIS 3613. Migration, Society and Culture in Africa. (3-0) 3 Credit Hours.

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").

HIS 3623. History of the Civil Rights Movement. (3-0) 3 Credit Hours.

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.

HIS 3633. Early Modern England, 1485–1760. (3-0) 3 Credit Hours.

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.

HIS 3673. Introduction to Latina/o History. (3-0) 3 Credit Hours.

This course will compare the immigration experiences of people arriving in the United States from different parts of Latin America and the Caribbean. The focus will be on immigrants from other regions of the Americas (e.g., Mexico, Central America, Puerto Rico, Cuba, and the Dominican Republic). Students will have the opportunity to explore the factors that fueled immigration by examining social, political, and economic developments in the sending nations and in the United States. Topics may include territorial conquest, colonialism, real and imagined borders, chain migration, formation of immigrant communities, acculturation, circular migration, gender relations, and social networks.

HIS 3683. History of Food and Foodways. (3-0) 3 Credit Hours.

All historical eras and world areas are marked by the need for food, the production of food, and the culture of food. This course offers a detailed investigation of food and drink in history, with particular attention on how food choices and ideologies express social distinctions, collective values, and aspirations. The impact of food on social and political systems, cultural interactions, economic empires, human migrations, and warfare may be explored.

HIS 3723. The High Middle Ages and the Early Renaissance. (3-0) 3 Credit Hours.

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, antimodern culture in Early Renaissance Italy to about 1450.

HIS 3733. Europe in the High Renaissance and Reformation. (3-0) 3 Credit Hours.

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).

HIS 3743. Imperial Russia. (3-0) 3 Credit Hours.

The development of Russia from the accession of Peter the Great to the outbreak of the Russian Revolution.

HIS 3753. The Soviet Union and After. (3-0) 3 Credit Hours.

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.

HIS 3763. Russia before Peter the Great. (3-0) 3 Credit Hours.

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.

HIS 3773. The Age of the Baroque. (3-0) 3 Credit Hours.

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.

HIS 3803. World History in the Cinema. (3-0) 3 Credit Hours.

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).

HIS 3813. American Political History. (3-0) 3 Credit Hours.

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.

HIS 3823. History of American Foreign Relations. (3-0) 3 Credit Hours.

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.

HIS 3833. American Icons. (3-0) 3 Credit Hours.

Examines major events within the past one hundred years that have shaped the "the American Century." Students will have the opportunity to explore the way in which images, institutions, symbols, and persons have become icons, representing American values and ideas, at home and abroad.

HIS 3843. Migration and History. (3-0) 3 Credit Hours.

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.

HIS 3863. Global History of World War I. (3-0) 3 Credit Hours.

This course examines the First World War in Europe and beyond. Topics may include the war's origins, the competing strategic interests of the Great Powers, the impact of the war on Russia, Africa, and the Middle East, the experience of soldiers at the front and civilians at home, and the cultural consequences of war.

HIS 3873. History of World War II in Europe. (3-0) 3 Credit Hours.

This course examines the origins and impact of World War II in Europe. While multiple theatres of war are considered, this is not a military history course. Instead, the focus is primarily on the war's impact on civilian populations and the manner in which the conflict transformed the economic, social, and political realities of domestic life for the major combatants.

HIS 3903. Modern Japan. (3-0) 3 Credit Hours.

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.

HIS 3913. Late Imperial China. (3-0) 3 Credit Hours.

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.

HIS 3923. China in Revolution. (3-0) 3 Credit Hours.

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. Generally offered: Spring.

HIS 3943. History of India. (3-0) 3 Credit Hours.

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").

HIS 3953. Cultures and Empires of the Silk Road, 700 BCE – 1480 CE. (3-0) 3 Credit Hours.

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.

HIS 3963. Women and Gender in India. (3-0) 3 Credit Hours.

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.

HIS 3973. Muslim South Asia: India, Pakistan, Bangladesh. (3-0) 3 Credit Hours.

This course addresses the development and rise of Muslim nationalism in the Indian subcontinent. Under British colonial rule, Muslims in South Asia began to emerge as a political community, ultimately demanding self-rule under the sovereignty of Pakistan. After a chaotic Partition with India in 1947, Pakistan struggled to achieve cohesion across lines of region, language, and ethnicity. A civil war in 1971 led to the formation of the independent nation of Bangladesh. The class may consider topics of history, culture, gender, class, religion, and economic development for Muslims in South Asia, along with issues of contemporary interest in the region.

HIS 3983. Women and Gender in Latin America. (3-0) 3 Credit Hours.

This course examines the role of gender in Latin American history, particularly with respect to the lives of ordinary women. Topics that may be discussed include exploring the changing roles of women over time to see how colonialism and imperialism, the rise of capitalism, and the existence of race/ethnicity and class hierarchies impacted women's social, economic and political roles. Regional and topical themes may vary. Throughout the course, we will be sensitive to how gender norms informed the ways women and men exercised power as well as the forces that constrained them from using power.

HIS 4133. History and the Public. (3-0) 3 Credit Hours.

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.

HIS 4143. History Standards and Their Public Reception. (3-0) 3 Credit Hours.

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. Generally offered: Fall.

HIS 4223. Environmental History of the United States. (3-0) 3 Credit Hours.

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.

HIS 4233. American Society in the 1960s. (3-0) 3 Credit Hours.

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.

HIS 4603. Issues in History. (3-0) 3 Credit Hours.

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.) Course Fee: MEFH \$5.

HIS 4911. Independent Study. (0-0) 1 Credit Hour.

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.

HIS 4913. Independent Study. (0-0) 3 Credit Hours.

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.

HIS 4933. Internship in History. (0-0) 3 Credit Hours.

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.

HIS 4953. Special Studies in History. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

HIS 4973. Seminar in History. (3-0) 3 Credit Hours.

Prerequisite: HIS 2003 with a minimum grade of "C-". 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. Generally offered: Fall, Spring.

HIS 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: Enrollment limited to candidates for Honors in History during their last two semesters; and/or 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. Generally offered: Fall, Spring.

Honors (HON)

Honors (HON) Courses

HON 2201. Honors Community Service. (0-0) 1 Credit Hour.

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. Generally offered: Fall, Spring.

HON 2301. Honors: The Civic Ethos. (1-0) 1 Credit Hour.

Prerequisite: Enrollment in the Honors College or consent of instructor. An introduction to the theories involved with the value of civic participation, community involvement, public service, and volunteerism. Offered each semester.

HON 2983. Honors Tutorial I. (3-0) 3 Credit Hours.

Prerequisite: Enrollment in the Honors College or consent of instructor. An introduction to the Honors College's Tutorial sequence via an introductory in-depth exploration into the student's chosen area of expertise. Focus is upon familiarizing students with materials that will distinguish them from peers in their chosen major. This course that requires the student to pass a written and oral examination on the semester's materials.

HON 3021. Honors Essay Writing. (0-0) 1 Credit Hour.

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. Generally offered: Fall, Spring.

HON 3103. Honors Service and Social Entrepreneurship. (3-0) 3 Credit Hours.

Prerequisite: Enrollment in the Honors College or consent of instructor. An advanced experiential course in service learning and/or community engagement that results in a significant service project. Student projects will be expected to display significant application of skills and effort to make a measurable, critical social impact that extends beyond volunteerism. May be repeated for credit when topics vary.

HON 3223. Honors Seminar in Social & Behavioral Sciences. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

HON 3233. Honors Seminar in Arts & Humanities. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer.

HON 3243. Honors Seminar in Business & the Professions. (3-0) 3 Credit Hours.

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.

HON 3253. Honors Seminar in the Sciences. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

HON 3263. Honors Professional Development. (3-0) 3 Credit Hours.

Prerequisite: Enrollment in the Honors College or consent of instructor. Seminar focusing upon skill development and knowledge acquisition that will make students more competitive in the workforce. Sections may be tailored to certain sections of the workforce, so students should speak with an advisor before registering for the course. May be repeated for credit when topics vary.

HON 3301. Graduate School Workshop. (1-0) 1 Credit Hour.

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. Generally offered: Spring.

HON 3313. Honors Research. (3-0) 3 Credit Hours.

Prerequisite: Enrollment in the Honors College or consent of instructor. A course-based research experience designed to help students demonstrate mastery of a set of research skills that lead to peer-reviewed outcomes. Topics vary with instructor. May be repeated for credit when topics vary.

HON 3401. Honors Practicum in Culture. (1-0) 1 Credit Hour.

Prerequisite: Enrollment in the Honors College or consent of instructor. A course designed to immerse students in cultural settings or teach socio-cultural skills with which the student is likely unfamiliar. Emphasis will be on broadening the student's cultural capital, enabling them to act more comfortably in a global environment. May be repeated for credit when topics vary.

HON 3403. Honors Practicum in Culture. (3-0) 3 Credit Hours.

Prerequisite: Enrollment in the Honors College or consent of instructor. A course designed to immerse students in cultural settings or teach socio-cultural skills with which the student is likely unfamiliar. Emphasis will be on broadening the student's cultural capital, enabling them to act more comfortably in a global environment. May be repeated for credit when topics vary.

HON 3501. Honors Capstone Exploration. (1-0) 1 Credit Hour.

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").

HON 3503. Honors Intentional Living and the Good Life. (3-0) 3 Credit Hours.

Prerequisite: Enrollment in the Honors College or consent of instructor. Students are exposed to knowledge and skills designed to help them become more engaged and intentional decision makers in various areas of their lives. Often, sections focus upon alternative forms of living, mastery of advanced lifestyle tools, or focused skill development in specific way of life. May be repeated for credit when topics vary.

HON 3513. Policy-Making Process. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

HON 3523. Politics of National Memory. (3-0) 3 Credit Hours.

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. (Formerly titled "Beyond Congress and the White House.") Generally offered: Fall, Spring.

HON 3533. Advocacy and Politics. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

HON 3601. Honors Special Topics: Skills. (1-0) 1 Credit Hour.

Prerequisite: Enrollment in the Honors College or consent of instructor. A course designed to teach students specific skills that are contemporary, relevant to a wide sector of the workforce, and/or helpful for improving one's quality of life. May be repeated for credit when topics vary.

HON 3603. Honors Special Topics: Skills. (3-0) 3 Credit Hours.

Prerequisite: Enrollment in the Honors College or consent of instructor. A course designed to teach students specific skills that are contemporary, relevant to a wide sector of the workforce, and/or helpful for improving one's quality of life. May be repeated for credit when topics vary.

HON 3951. Honors Study Abroad/Away. (1-0) 1 Credit Hour.

Prerequisite: Enrollment in the Honors College or consent of instructor. Academic study or experiential learning in a context outside of Texas or the home state of the student. Usually paired with a credit-bearing academic course. May be repeated when topics vary.

HON 3984. Honors Tutorial II. (0-0) 4 Credit Hours.

Prerequisite: Enrollment in the Honors College or consent of instructor. An in-depth exploration into the student's chosen area of expertise. Focus is upon familiarizing students with materials that will distinguish them from peers in their chosen major. This is a self-guided course that requires the student to pass a written and oral examination on the semester's materials.

HON 4403. San Antonio Seminar. (3-0) 3 Credit Hours.

Prerequisite: Enrollment in the UTSA Honors Citymester Program. An in-depth exploration into various issues and industries, lifestyles and cultures, personalities and institutions that create the City of San Antonio and the surrounding areas. Using San Antonio as text, the students will explore what it is to live and create meaning in and for this urban complex.

HON 4913. Honors Independent Study. (0-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

HON 4933. Honors Internship. (0-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

HON 4936. Honors Internship. (0-0) 6 Credit Hours.

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. Generally offered: Fall, Spring.

HON 4941. Honors Leadership. (0-0) 1 Credit Hour.

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. Generally offered: Fall.

HON 4951. Honors Practicum in Leadership. (1-0) 1 Credit Hour.

Prerequisite: Enrollment in the Honors College and selection to one of the honors leadership programs. Practicum in leadership wherein students gain experience acting as leaders in one of several leadership programs offered by the Honors College. May be repeated for credit when topics vary. Generally offered: Fall, Spring.

HON 4984. Honors Tutorial III. (0-0) 4 Credit Hours.

Prerequisite: HON 3984 or Honors College documentation of successful completion of Honors Tutorial II. An individualized, in-depth exploration of primary texts in the area of a student's House. Focus is upon familiarizing students with primary materials from multiple disciplines, thus distinguishing them from peers in their chosen major. This is a self-guided course that requires the student to pass a written and oral examination on the semester's materials.

HON 4993. Honors Capstone Project. (0-0) 3 Credit Hours.

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") Generally offered: Fall, Spring.

Humanities (HUM)

Humanities (HUM) Courses

HUM 2023. Introduction to the Humanities I. (3-0) 3 Credit Hours. (TCCN = HUMA 1301)

An introductory survey of the important aesthetic works, ideas, social structures, and other cultural productions of Western Civilization from the Paleolithic through the Medieval eras. This course will employ an interdisciplinary approach designed to acquaint students with major cultural modes in Western Civilization with a particular focus on aesthetic works and the dominant critical approaches used to address them. May be applied toward the Core Curriculum requirement in Creative Arts. Generally offered: Spring. Course Fees: LRC1 \$12; LRLF \$10.

HUM 2033. Introduction to the Humanities II. (3-0) 3 Credit Hours. (TCCN = HUMA 1302)

An introductory survey of the important aesthetic works, ideas, social structures, and other cultural productions of Western Civilization from the Renaissance through the Present. This course will employ an interdisciplinary approach designed to acquaint students with major cultural modes in Western Civilization with a particular focus on aesthetic works and the dominant critical approaches used to address them. May be applied toward the Core Curriculum requirement in Creative Arts. Course Fees: LRC1 \$12; LRLF \$10.

HUM 2053. History of Film. (3-0) 3 Credit Hours. (TCCN = HUMA 1315)

An introductory survey of the history, criticism, and cultural importance of film in Western Culture. This course will focus on the development of film as a medium for cultural production including a comparative analysis between film and other cultural media such as literature, drama, and the visual arts. May be applied toward the Core Curriculum requirement in Creative Arts. Generally offered: Spring. Course Fees: LRC1 \$12; LRLF \$10.

HUM 2093. World Religions. (3-0) 3 Credit Hours. (TCCN = PHIL 1304)

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly HUM 3093. Credit cannot be earned for both HUM 2093 and HUM 3093.) Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

HUM 3013. History of Ideas. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Survey of the development and influence of major philosophical, scientific, and aesthetic conceptions from ancient times to the present. Generally offered: Fall.

HUM 3023. The Medieval World. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Interdisciplinary investigation of medieval thought and culture as exemplified in major works of literature, philosophy, theology, and history.

HUM 3033. Renaissance Ideas. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Interdisciplinary investigation of Renaissance thought and culture, as exemplified in major works of literature, philosophy, history, theology, and fine arts.

HUM 3043. Classicism and Enlightenment. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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.

HUM 3053. The Romantic Age. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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.

HUM 3063. The Modern World. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Interdisciplinary investigation of modern thought in the late 19th and 20th centuries, as exemplified in major works of philosophy, literature, and the fine arts. Generally offered: Fall, Summer.

HUM 3103. American Film. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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.

HUM 3203. Film Genres. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Intensive study of a particular film genre, such as Western, science fiction, film noir, or documentary. May be repeated for credit when topics vary.

HUM 3213. The Christian Classics. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. The opportunity for an intensive survey of selected works of writers studied in the context of Christian thought.

HUM 3223. The Bible as Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. 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.

HUM 3303. Major Filmmaker. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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.

HUM 3403. Literature into Film. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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.

HUM 3623. Topics in National Cultures and Civilizations. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. The cultural life of the respective geographic regions and social strata of individual nations, 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. Generally offered: Fall, Spring.

HUM 3703. Topics in Popular Culture. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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. Generally offered: Spring.

HUM 4911. Independent Study. (0-0) 1 Credit Hour.

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.

HUM 4912. Independent Study. (0-0) 2 Credit Hours.

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.

HUM 4913. Independent Study. (0-0) 3 Credit Hours.

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.

HUM 4953. Special Studies in Humanities. (3-0) 3 Credit Hours.

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. Generally offered: Spring.

HUM 4973. Senior Seminar in Humanities. (3-0) 3 Credit Hours.

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").

HUM 4991. Honors Thesis. (0-0) 1 Credit Hour.

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.

HUM 4992. Honors Thesis. (0-0) 2 Credit Hours.

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.

HUM 4993. Honors Thesis. (0-0) 3 Credit Hours.

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.

Information Systems (IS)

Note: Beginning Fall 2019, course fees will be replaced with differential tuition at a rate of \$42 per semester credit hour for upper-division College of Business courses.

Information Systems (IS) Courses

IS 1001. Inside Cyber. (1-0) 1 Credit Hour.

An introduction to the cyber world with emphases on the security, business, technology, and career aspects of cyber. This course offers a high-level overview of the potential benefits of information systems and technology, along with the associated challenges and risks. Course Fees: BISP \$10; BTSI \$15; LRB1 \$15.

IS 1403. Business Information Systems Fluency. (3-0) 3 Credit Hours. (TCCN = BCIS 1305)

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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$10; BTSI \$15; DL01 \$75; LRB1 \$15.

IS 1413. Excel for Business Information Systems. (3-0) 3 Credit Hours.

This course concentrates on the use of Microsoft Office Excel as a tool for organizing, presenting, and analyzing data. This is a Web-based course. All coursework (lessons, exams, and projects) is completed online using a computer. Microsoft Excel is required to complete the projects assigned in the course. Successful completion of this course will help prepare the student for taking the Microsoft Office Specialist (MOS): Microsoft Office Excel Core exam. Students who are MOS (Microsoft Office Excel 2016 Core or Microsoft Office Excel 2013 Core) certified or have taken an equivalent course that specifically prepares students for the MOS Excel exam can petition for exemption from the course. Students in quantitative majors (such as Accounting, Actuarial Science, Economics, Finance, Management Science, and Statistics and Data Science) are strongly encouraged to this course in lieu of IS 1403. Generally offered: Fall, Spring, and Summer. Course Fees: BISP \$10; BTSI \$15; DL01 \$75; LRB1 \$15.

IS 2031. Introduction to Programming Concepts Laboratory. (0-2) 1 Credit Hour.

Prerequisite: Concurrent enrollment in, or completion of, IS 2033 or an equivalent with a grade of "C-" or better. Laboratory accompanies IS 2033. The laboratory uses an object-oriented programming language and software development tools to develop basic applications that underlie the concepts learned in IS 2033. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$10; BTSI \$15; LRB1 \$15.

IS 2033. Introduction to Programming Concepts. (3-0) 3 Credit Hours.

Prerequisite: Concurrent enrollment in, or completion of, IS 2031 or an equivalent with a grade of "C-" or better. An introduction to programming concepts with an object-oriented language. Addresses basic elements of programming concepts and object-oriented programming principles which include control structures, arithmetic and logical operators, classes and objects, methods and class behavior, arrays, ArrayList, and a brief introduction to GUIs (graphical user interfaces) and exception handling. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$10; BTSI \$15; LRB1 \$15.

IS 2041. Intermediate Object-Oriented Programming Laboratory. (0-2) 1 Credit Hour.

Prerequisites: Concurrent enrollment in IS 2043 and completion of IS 2031 and IS 2033, or their equivalents, with a grade of "C-" or better; or completion of IS 2043 or an equivalent with a grade of "C-" or better. Laboratory accompanies IS 2043. Laboratory uses an object-oriented programming language and software development tools to develop applications that underlie the concepts learned in IS 2043. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$10; BTSI \$15; LRB1 \$15.

IS 2043. Intermediate Object-Oriented Programming. (3-0) 3 Credit Hours.

Prerequisites: Concurrent enrollment in IS 2041 and completion of IS 2031 and IS 2033, or their equivalents, with a grade of "C-" or better; or completion of IS 2041 or an equivalent with a grade of "C-" or better. An object-oriented programming course designed to reinforce introductory object-oriented principles learned in IS 2033 and focus on concepts including inheritance, polymorphism, exception handling, data structures, searching and sorting, recursion, generic collections, file processing, object serialization, regular expressions, and GUIs (graphical user interfaces). Generally offered: Fall, Spring, Summer. Course Fees: BISP \$10; BTSI \$15; LRB1 \$15.

IS 3003. Principles of Information Systems for Management. (3-0) 3 Credit Hours.

Prerequisite: IS 1403 or IS 1413 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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 3033. Operating Systems Security. (3-0) 3 Credit Hours.

Prerequisites: IS 2031, IS 2033, and IS 3413 with a grade of "C-" or better, or consent of instructor and Department Chair. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 3043. Secure Mobile App Development. (3-0) 3 Credit Hours.

Prerequisites: IS 2041 and IS 2043, or the instructor's consent. As mobile devices such as smartphones and tablets become ubiquitous, the demand for mobile apps and developers who specialize in mobile technology also surges. This course teaches students how to develop a mobile app in an advanced development environment (e.g., Android Studio) and principles of secure software engineering. The course will cover requirements analysis, interface design, functionality development, testing vulnerabilities, data security and other secure software design strategies with a focus on the usability of mobile apps in the real world. The course will also cover other technical, social, and marketing issues related to the adoption of mobile apps. This course can be an elective for the information systems major and cybersecurity major and minor. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 3063. Database Management for Information Systems. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 3073. Application Development. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 3313. Introduction to Pathogenic Outbreak Investigations. (3-0) 3 Credit Hours.

This is a cross-disciplinary introduction to genetic and digital pathogens, their characteristics and methods for rapid analysis, geared toward predicting behavior during real-time outbreak investigations. The course examines both similarities and differences between biological and digital pathogens and presents core concepts from each domain to build a cohesive base for future multi-disciplinary research. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 3413. Introduction to Telecommunications for Business. (3-0) 3 Credit Hours.

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. Ethernet, IEEE 802.11x, TCP/IP, dedicated circuit, and VPN technologies are introduced. Network security fundamentals are explored. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 3423. Network Security. (3-0) 3 Credit Hours.

Prerequisite: IS 3413 with a grade of "C-" or better or consent of instructor and Department Chair. 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.") Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 3433. Introduction to Digital Forensics. (3-0) 3 Credit Hours.

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 forensic accounting principles and practices as well as fundamental legal issues related to digital forensics. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 3453. Networking Fundamentals. (3-0) 3 Credit Hours.

Prerequisite: IS 3413 with a grade of "C-" or better or consent of instructor and Department Chair. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 3513. Information Assurance and Security. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 3523. Intrusion Detection and Incident Response. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 3533. Cyber Law and Legal System. (3-0) 3 Credit Hours.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 3833. Cyber Operations. (3-0) 3 Credit Hours.

Prerequisites: IS 3513 and IS 3523 with a grade of "C-" or better. This course includes discussions concerning both the defensive and offensive cyber security operations. Protecting the network and the critical infrastructure will be one of the primary emphases of the course. Offensive capabilities will also be discussed. Current events, reverse malware engineering, new technologies, policies and legal subjects will also be part of this course. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4023. Applied Big Data with Machine Learning. (3-0) 3 Credit Hours.

This course provides an overview of machine learning techniques to explore, analyze, and leverage data. Students will be introduced to tools and algorithms they can use to create machine learning models that learn from data, and to scale those models up to big data problems. This course will help prepare students for more advanced courses in cyber analysis and data-driven decision making. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4033. Network Operations. (3-0) 3 Credit Hours.

Prerequisite: IS 3453 with a grade of "C-" or better or consent of instructor and Department Chair. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4053. Systems Analysis and Design. (3-0) 3 Credit Hours.

Prerequisite: IS 3063 with a grade of "C-" or better. An introduction to systems theory and development techniques. Topics include problem definition, system development life cycle, feasibility analyses, project management, system models and CASE tools. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4063. Advanced Topics in Information Systems. (3-0) 3 Credit Hours.

Prerequisite: 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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4083. Agile Project Management. (3-0) 3 Credit Hours.

This introductory course presents concepts and techniques for leading agile teams in many types of projects including software development, engineering, construction, product development, as well as science and technology focused efforts. The course will give students the opportunity to develop an agile mindset and a range of adaptive skills including agile methods, practices and values that are associated with achieving higher levels of performance and customer satisfaction. The course will also prepare the student to sit for the Project Management Institute's PMI-ACP certification exam. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4143. Wide Area Networks. (3-0) 3 Credit Hours.

Prerequisite: IS 3413 with a grade of "C-" or better or consent of instructor and Department Chair. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4183. Advanced Database Concepts and Applications. (3-0) 3 Credit Hours.

Prerequisite: IS 3063 with a grade of "C-" or better. Databases play a critical role in the business operations of most organizations. This course provides an in-depth coverage on concepts governing the design and management of database systems. Topics include data modeling, database design, administration, optimization and performance evaluation, SQL language, procedures, functions and triggers. Students will have the opportunity to learn how to design and build modern database systems through a set of hands-on exercises and projects using MS SQL Server, Oracle and other contemporary database software. The course also covers some advanced topics such as database security, database connectivity and Web applications. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4213. Data Center Infrastructure Planning. (3-0) 3 Credit Hours.

Prerequisite: IS 4033 with a grade of "C-" or better or consent of instructor and Department Chair. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4223. Emerging Network Technologies. (3-0) 3 Credit Hours.

Cloud computing has become popular in industry. This class will look at what it is and how it works. Security issues will be an important part of the course. Other topics include virtual machines, storage area networks, software defined networks, and remote systems management. New hardware will also be included. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4233. Introduction to Cloud Computing. (3-0) 3 Credit Hours.

Cloud computing has gone from a leading trend in IT to a widely adopted mainstream computing platform. This course introduces cloud computing concepts where students explore the basics of cloud services ecosystem and deployment models. Students will become acquainted with commonly used industry terms, typical business scenarios and applications for the cloud, security models, and benefits and limitations inherent in the new paradigm of computing. This course will help prepare students for more advanced courses in big data technology and cyber analysis. (Formerly titled Cloud Technologies for Business.) Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4463. Web Application Security. (3-0) 3 Credit Hours.

Prerequisite: IS 3513 with a grade of "C-" or better or consent of instructor. The security issues related to web applications will be discussed in this course. Topics include web application authentication, authorization, as well as browser and web database security principles. Various web application security attack types such as code injection, cross-site scripting, and cross-site request forgery will be studied. The course will also include discussions about business aspects that contribute to a secure web-based transaction environment. (Formerly titled Secure Electronic Commerce.) Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4473. Information Assurance Policy. (3-0) 3 Credit Hours.

Prerequisites: IS 3413 with a grade of "C-" or better and one 3-semester-credit-hour security course or consent of instructor and Department Chair. 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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4483. Digital Forensic Analysis I. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4513. Industrial Control Systems. (3-0) 3 Credit Hours.

Prerequisite: IS 3513 with a grade of "C-" or better, or consent of instructor and Department Chair. Many of the critical infrastructure systems contain a system control and data acquisition (SCADA) component. Frequently, the control systems are remotely accessed and therefore become the focal point for attack. This course examines the control system components from the standpoint of vulnerability and protection. (Formerly titled Cyber and Physical Systems.) Generally offered: Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4523. Digital Forensic Analysis II. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4533. Malware Analysis. (3-0) 3 Credit Hours.

Prerequisites: IS 3033 and IS 3513 with grades of "C-" or better, or instructor's consent. This class is designed to introduce students to concepts, tools and techniques associated with modern malicious code analysis. The course will examine the methods employed by malicious actors to prevent analysis and neutralization of their exploits and discuss ways of leveraging resources and tools to effectively examine malicious code. Safe handling practices for malware analysis such as sandboxing, virtualization, and system isolation will be taught/practiced throughout the course. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4543. Cyber Attack and Defend. (3-0) 3 Credit Hours.

This course will bridge the concepts of implementing a secure network with actual cyber threats. Students will learn the necessary skills to implement key IT system components, create security policies, and understand the background of what hackers do to mandate such security measures. Students will conduct red team assessments against common infrastructure components, and monitor residual effects of attacks. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

IS 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: A 3.0 College of Business grade point average, and approval in writing from the instructor, the Department Chair, and the Dean of the College. See academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

IS 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: A 3.0 College of Business grade point average, and approval in writing from the instructor, the Department Chair, and the Dean of the College. See academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

IS 4933. Internship in Information Systems. (0-0) 3 Credit Hours.

Prerequisites: 6 semester credit hours of information systems courses (excluding IS 1403 and IS 3003), a 2.5 UTSA grade point average, and approval in writing from the instructor, the Department Chair, and the Associate/Assistant Dean of Undergraduate Studies in the College of Business. Directed internship of at least 200 hours of work under the supervision of a professional providing students with opportunities to apply concepts, principles, and techniques learned in the classroom. Written report required. A proposal form must be completed and approved prior to registration. Internship may not be repeated for credit. Course Fees: BISP \$20; BTSI \$15.

IS 4943. Internship in Cyber Security. (0-0) 3 Credit Hours.

Prerequisites: 6 semester credit hours of information systems courses (excluding IS 1403 and IS 3003), a 2.5 UTSA grade point average, and approval in writing from the instructor, the Department Chair, and the Associate/Assistant Dean of Undergraduate Studies in the College of Business. Directed internship of at least 200 hours of work under the supervision of a professional providing students with opportunities to apply concepts, principles, and techniques learned in the classroom. Written report required. A proposal form must be completed and approved prior to registration. Internship may not be repeated for credit. Course Fees: BISP \$20; BTSI \$15.

IS 4953. Special Studies in Information Systems. (3-0) 3 Credit Hours.

Prerequisite: 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

Interdisciplinary Studies (IDS)

Interdisciplinary Studies (IDS) Courses

IDS 2013. Introduction to Learning and Teaching in a Culturally Diverse Society. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

IDS 2083. Learning with Technology. (3-1) 3 Credit Hours.

This course investigates theoretical and practical issues surrounding the use of digital technologies in formal and informal contexts of learning. The course offers opportunities for learners to explore current and emergent technologies for learning, and how the use of these technologies can be optimized for diverse learning contexts. (Formerly titled "Technology for Learning and Teaching.") Course Fees: LRH1 \$10; STSH \$15.

IDS 2113. Society and Social Issues. (3-0) 3 Credit Hours.

This course explores contemporary social issues resulting from modern globalization and transnationalism from diverse disciplinary perspectives. Students investigate data and relate scholarship to understand the nature of global changes, as well as their impact on the world's people and global societies. Personal and social responsibility in relation to social issues will be explored through a variety of global, national, regional, and community-based topics. Students will be expected to synthesize disciplinary studies and demonstrate their connections of global issues to local contexts through written, oral, and visual representations. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRH1 \$10; STSH \$15.

IDS 2403. Physical Science. (3-0) 3 Credit Hours.

Prerequisites: Completion of Mathematics and Science Core Curriculum requirements. Study of fundamental laws that govern the universe, including mechanics, thermodynamics, electromagnetism, and quantum theory, and how these relate to physics and chemistry. Topics will include but not be limited to: basic scientific problem-solving techniques, fundamental forces; energy and how it is conserved and transformed; matter; atomic structure; and chemical interactions. (Credit cannot be earned for both IDS 2403 and IDS 3234.) Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

IDS 2413. Earth Systems Science. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

IDS 3003. STEM in Social Contexts. (3-0) 3 Credit Hours.

Prerequisites: IDS 2113, WRC 1013 and WRC 1023. An exploration of inquiry in STEM fields and how it is situated in local and global sociocultural contexts across time. This course uses an interdisciplinary approach to studying the nature of inquiry, knowledge, and theory development, as well as the mutual relationships between STEM fields and social contexts. (Formerly titled "Science and Humanity.") Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

IDS 3013. Diversity, Equity, and the Social Sciences. (3-0) 3 Credit Hours.

Prerequisite: IDS 2113. This course offers learners opportunities to explore issues of diversity and equity by examining the social construction of race, class, sex, sexuality and other markers that may cause social oppression. Students will be invited to engage in in-depth inquiry about knowledge production and identity construction within the dominant discourse, as well as in critical reflection on social transformation practices in schools and communities. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

IDS 3123. Culture, Literature, and Fine Arts. (3-0) 3 Credit Hours.

Prerequisites: IDS 2113, WRC 1013, and WRC 1023. The goal of this course is to engage students in inquiry on how issues embedded within and across cultures/time periods are reflected, challenged, and reinterpreted, through literature, art, music, film, and other forms of cultural expression. By contrasting and comparing cultural discourses and identities, students will have opportunities to develop respect, empathy, and understanding of diversity and social responsibility from an interdisciplinary perspective. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

IDS 3201. Inquiry in Physical Science. (0-3) 1 Credit Hour.

Prerequisites: Completion of Mathematics and Science Core Curriculum requirements. Hands-on experimental inquiry with standard laboratory tools and techniques in the fields of physics and chemistry. Major themes include energy, forces, and atomic and subatomic interactions. (Credit cannot be earned for both IDS 3201 and IDS 3234.) Generally offered: Fall, Spring, Summer. Course Fees: L001 \$25; LRH1 \$10; STSH \$5.

IDS 3211. Inquiry in Earth Systems Science. (0-3) 1 Credit Hour.

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.") Generally offered: Fall, Spring, Summer. Course Fees: L001 \$25; LRH1 \$10; STSH \$5.

IDS 3224. Earth Systems Science Investigations. (2-4) 4 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$20.

IDS 3234. Investigations in Physical Science. (2-4) 4 Credit Hours.

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 will include varied methods of engagement, including hands-on and minds-on experimentation. Credit for IDS 3234 is equivalent to credit for both IDS 2403 and IDS 3201. Credit cannot be earned for IDS 2403 (or IDS 3203) and IDS 3201 if this course is taken. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$20.

IDS 3713. Interdisciplinary Inquiry. (3-0) 3 Credit Hours.

Prerequisites: IDS 2113, IDS 3003, IDS 3013, IDS 3123, WRC 1013, and WRC 1023. This course fosters opportunities for engaging in the study of thinking in the sciences, social studies, mathematics, language arts, and fine arts through interdisciplinary investigations. Course experiences include development, practice, and analysis of ways of inquiring in several subject areas and seeking their implications for interdisciplinary inquiries toward critical reflection and transformative praxis. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

IDS 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fee: STSH \$15.

IDS 4993. Honors Thesis. (0-0) 3 Credit Hours.

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. Course Fees: LRH1 \$10; STSH \$15.

Interior Design (IDE)

Interior Design (IDE) Courses

IDE 2143. Architecture and Interior Assemblies. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major. The study of building materials, assemblies, and construction processes as used in interior environments with an emphasis on system components qualities, characteristics, and standard installation practices. Generally offered: Fall. Course Fees: SAP1 \$25; STSA \$15.

IDE 2153. Interior Materials and Assemblies. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major. Continued study of materials and assemblies as used in interior environments with an emphasis on ceiling, floor, and furniture systems, applied finishes, and specifications. (Formerly IDE 3153. Credit cannot be earned for both IDE 2153 and IDE 3153.) Course Fees: SAP1 \$25; STSA \$15.

IDE 2166. Digital Design Studio. (0-14) 6 Credit Hours.

Prerequisite: Enrollment as an IDE major. Architectural and interior architectural design through the agency of digital design media. Course content includes the development of design skills for the conceptualization and informed design of buildings. Course Fees: SAP1 \$25; STSA \$30.

IDE 2263. Color Theory and Behavior. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major. A study of the physiological, psychological, and emotional effects of color, light, and space on human experience, behavior, and performance within the built environment. Explores fundamental properties of color, color relationships and their effects, as well as the fundamental theories found in environment and behavior interactions. Course Fees: SAP1 \$25; STSA \$15.

IDE 2413. History of Interior Architecture I. (3-0) 3 Credit Hours.

Prerequisites: WRC 1013, WRC 1023 and enrollment as an ARC or IDE major. Introduction to art, architecture, interior design, and decorative arts from antiquity to the Industrial Revolution. Explores the varied ways that design reflects and serves the social, religious, and political life in the Western and non-Western world. Course Fees: SAP1 \$25; STSA \$15.

IDE 2423. History of Interior Architecture II. (3-0) 3 Credit Hours.

Prerequisites: WRC 1013, WRC 1023 and enrollment as an ARC or IDE major. Introduction to art, architecture, interior design, and decorative arts through the post-Industrial Revolution to the modern period. Explores the varied ways that design reflects and serves the social, religious, and political life in the Western and non-Western world. (Formerly titled "History of Design: Renaissance through Nineteenth Century.") Course Fees: SAP1 \$25; STSA \$15.

IDE 3123. Space Planning and Interior Details. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major. Space planning and interior details informed by human factors, concepts and regulations. Course Fees: SAP1 \$25; STSA \$15.

IDE 3133. Interior Design Topics. (3-0) 3 Credit Hours.

Prerequisite: Enrollment as an ARC or IDE major. A study of current trends and issues in interior design. Course Fees: SAP1 \$25; STSA \$15.

IDE 3236. Interior Design Studio I. (0-14) 6 Credit Hours.

Prerequisites: 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. Generally offered: Fall. Course Fees: SAP1 \$25; STSA \$30.

IDE 3246. Interior Design Studio II. (0-14) 6 Credit Hours.

Prerequisites: IDE 2143, IDE 2153, and completion of or concurrent enrollment in ARC 4183. Interior design focused on integrating mechanical, acoustical, and lighting systems through a consideration of the relationship between human activities and various interior environments. Generally offered: Spring. Course Fees: SAP1 \$25; STSA \$30.

IDE 3433. Topics in Design Theory. (3-0) 3 Credit Hours.

Prerequisite: IDE 2423. Introduction to design theories. May be repeated for credit when topics vary. (Formerly IDE 4423.) Course Fees: SAP1 \$25; STSA \$15.

IDE 4213. Furniture Design and Construction. (0-6) 3 Credit Hours.

Prerequisite: 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. Course Fees: SAP1 \$25; STSA \$15.

IDE 4233. Computer Projects in Design. (2-2) 3 Credit Hours.

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 ARC 4233. Credit cannot be earned for both IDE 4233 and ARC 4233.) Course Fees: SAP1 \$25; STSA \$15.

IDE 4266. Systems Integration Studio. (0-14) 6 Credit Hours.

Prerequisites: IDE 2143, IDE 2153, IDE 3133, IDE 3246 or IDE 4816, and ARC 4183. 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.") Generally offered: Fall. Course Fees: SAP1 \$25; STSA \$30.

IDE 4333. Practicum/Internship. (0-0) 3 Credit Hours.

Prerequisite: IDE 3236 or 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. Course Fees: SAP1 \$25; STSA \$15.

IDE 4513. Practice and Ethics. (3-0) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166. 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. Course Fees: SAP1 \$25; STSA \$15.

IDE 4816. International Studies Studio. (0-14) 6 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. An interior architecture studio associated with a study abroad program. (Formerly titled "Study Abroad: Studio.") (Same as ARC 4816. Credit cannot be earned for both IDE 4816 and ARC 4816.) Course Fees: SAP1 \$25; STSA \$30.

IDE 4823. International Studies Theory Seminar. (3-0) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. A lecture/seminar course associated with a study abroad program; involves field trips. (Formerly titled "Study Abroad: History/Theory.") (Same as ARC 4823. Credit cannot be earned for both IDE 4823 and ARC 4823.) Course Fees: SAP1 \$25; STSA \$15.

IDE 4833. International Studies Drawing Seminar. (0-8) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. A drawing course associated with a study abroad program; involves field trips. (Formerly titled "Study Abroad: Observational Drawing.") (Same as ARC 4833. Credit cannot be earned for both IDE 4833 and ARC 4833.) Course Fees: SAP1 \$25; STSA \$15.

IDE 4843. International Studies History Seminar. (3-0) 3 Credit Hours.

Prerequisites: ARC 2156 and ARC 2166 or consent of instructor. A lecture/seminar course associated with a study abroad program; involves field trips. (Same as ARC 4843. Credit cannot be earned for both IDE 4843 and ARC 4843.) Course Fees: SAP1 \$25; STSA \$15.

IDE 4911. Independent Study. (0-0) 1 Credit Hour.

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. Course Fees: SAP1 \$25; STSA \$5.

IDE 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fees: SAP1 \$25; STSA \$15.

IDE 4953. Special Studies in Interior Architecture. (3-0) 3 Credit Hours.

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. Course Fees: SAP1 \$25; STSA \$15.

IDE 4956. Special Studies in Interior Architecture. (0-14) 6 Credit Hours.

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. Course Fees: SAP1 \$25; STSA \$30.

Italian (ITL)

Italian (ITL) Courses

ITL 1014. Elementary Italian I. (3-2) 4 Credit Hours. (TCCN = ITAL 1411)

Fundamentals of Italian offering the opportunity to develop listening, speaking, reading, and writing skills. Introduction to Italian culture. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall. Course Fees: LRC1 \$16; LRLF \$10; MM01 \$7.

ITL 1024. Elementary Italian II. (3-2) 4 Credit Hours. (TCCN = ITAL 1412)

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. Generally offered: Spring. Course Fee: MM01 \$7.

ITL 2013. Intermediate Italian I. (3-1) 3 Credit Hours. (TCCN = ITAL 2311)

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. Course Fee: MM01 \$7.

ITL 2023. Intermediate Italian II. (3-1) 3 Credit Hours. (TCCN = ITAL 2312)

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. Course Fee: MM01 \$7.

ITL 2333. Italian Literature in English Translation. (3-0) 3 Credit Hours.

Major works of Italian literature across time, genres, and movements. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly ITL 3333. Credit cannot be earned for both ITL 2333 and ITL 3333.) Course Fees: LRC1 \$12; LRLF \$10; MM01 \$7.

Japanese (JPN)

Japanese (JPN) Courses

JPN 1014. Elementary Japanese I. (3-2) 4 Credit Hours. (TCCN = JAPN 1411)

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall. Course Fees: LRC1 \$16; LRLF \$10; MM01 \$7.

JPN 1024. Elementary Japanese II. (3-2) 4 Credit Hours. (TCCN = JAPN 1412)

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. Generally offered: Spring. Course Fee: MM01 \$7.

JPN 2013. Intermediate Japanese I. (3-1) 3 Credit Hours. (TCCN = JAPN 2311)

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. Generally offered: Fall. Course Fee: MM01 \$7.

JPN 2023. Intermediate Japanese II. (3-1) 3 Credit Hours. (TCCN = JAPN 2312)

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. Generally offered: Spring. Course Fee: MM01 \$7.

JPN 3023. Advanced Language Skills. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fee: MM01 \$7.

JPN 3053. Business Japanese. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

JPN 4213. Topics in Japanese Culture. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

Kinesiology (KIN)

NOTE: All prerequisites for Kinesiology (KIN) courses must be completed with a grade of "C-" or better.

Kinesiology (KIN) Courses

KIN 1001. Individual Physical Activities. (0-3) 1 Credit Hour.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$3; PAG1 \$10.

KIN 1013. Freshman Topics in Kinesiology. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Summer. Course Fees: LRH1 \$10; STSH \$15.

KIN 1101. Team Sports. (0-3) 1 Credit Hour.

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. Generally offered Fall, Spring. Course Fees: LRH1 \$10; PAG1 \$10; STSH \$5.

KIN 2003. Computer Applications in Kinesiology and Health. (3-0) 3 Credit Hours.

Prerequisite: KIN 2303 or HTH 2413. Application of computer and multimedia technology in Kinesiology and Health disciplines. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

KIN 2111. Lifetime Fitness Activity Instruction. (1-2) 1 Credit Hour.

Practice in delivering instructions in lifetime fitness activities for adults. These activities include cycling, hiking, jogging, golf, badminton and tennis. Course Fees: LRH1 \$10; PAG1 \$20; STSH \$5.

KIN 2123. Fitness and Wellness Concepts. (3-0) 3 Credit Hours. (TCCN = KINE 1338)

Prerequisite: KIN 2303 or consent of instructor. 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 may be required. Generally offered Fall, Spring. Course Fees: LRH1 \$10; PAG1 \$20; STSH \$15.

KIN 2141. Medical Terminology. (1-1) 1 Credit Hour.

Prerequisites: KIN 2303 and admission to the Athletic Training concentration or Kinesiology and Health Science concentration. This course examines the word roots, prefixes, suffixes and terms used in medicine and clinical exercise. A major focus will be on the terms used in the major organ systems of the body, diseases, injuries, and medical treatments. Course Fees: LRH1 \$10; STSH \$5.

KIN 2211. First Aid and CPR. (1-2) 1 Credit Hour.

A study of basic first aid procedures, cardiopulmonary resuscitation (CPR), automated external defibrillation (AED), and blood borne pathogens. Upon successful completion of this course students will be able to sit for national certification in first aid and CPR. (Formerly KIN 3213. Credit cannot be earned for both KIN 2211 and KIN 3213.) Course Fees: KSM1 \$10; LRH1 \$10; STSH \$5.

KIN 2303. Foundations of Kinesiology. (3-0) 3 Credit Hours. (TCCN = KINE 1301)

Study of the history and philosophy of physical activity, and an introduction to anatomy, physiology, biomechanics, motor behavior, and psychology of exercise and sport. This course will also introduce careers in kinesiology and the requirements for graduation with a degree in kinesiology. (Formerly titled "Cultural and Scientific Foundations of Kinesiology.") Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

KIN 2421. Outdoor Activities and Innovative Games. (1-2) 1 Credit Hour.

Prerequisite: KIN 2303. 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 titled "Outdoor Activities and Lifetime Sports.") Generally offered: Fall, Spring. Course Fees: LRH1 \$10; PARC \$40; STSH \$5.

KIN 2441. Management in Kinesiology. (1-0) 1 Credit Hour.

Prerequisite: KIN 2303. 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.) Course Fees: LRH1 \$10; STSH \$5.

KIN 3001. Skill Analysis in Physical Activity: Individual Activities. (1-2) 1 Credit Hour.

Practice in delivering developmentally appropriate physical activity instruction in a variety of selected individual activities such as golf, bowling, archery, and track and field. Generally offered Fall, Spring. Course Fees: LRH1 \$10; PAG1 \$20; STSH \$5.

KIN 3011. Skill Analysis in Physical Activity: Team Sports I. (1-2) 1 Credit Hour.

Practice in delivering developmentally appropriate physical activity instruction in a variety of selected team sports, such as basketball, soccer, and baseball/softball. Generally offered: Fall. Course Fees: LRH1 \$10; PAG1 \$20; STSH \$5.

KIN 3013. Theory of Coaching. (3-0) 3 Credit Hours.

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. Generally offered Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

KIN 3021. Skill Analysis in Physical Activity: Team Sports II. (1-2) 1 Credit Hour.

Practice in delivering developmentally appropriate physical activity instruction in a variety of selected team sports, such as football, volleyball, and team handball. Generally offered: Spring. Course Fees: LRH1 \$10; PAG1 \$20; STSH \$5.

KIN 3031. Skill Analysis in Physical Activity: Dual Sports. (1-2) 1 Credit Hour.

Practice in delivering developmentally appropriate physical activity instruction in a variety of selected dual sports, such as badminton, tennis and handball. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; PAG1 \$20; STSH \$5.

KIN 3051. Group Fitness Instruction. (1-2) 1 Credit Hour.

Prerequisite: KIN 2303 or consent of instructor. Practice in delivering a variety of appropriate aerobic, musculoskeletal fitness, and wellness activities for children and adults. (Formerly titled "Aerobic Fitness Instruction.") Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; PAG1 \$20; STSH \$5.

KIN 3061. Foundational Movement. (1-2) 1 Credit Hour.

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 titled "Rhythmical Activities and Dance.") Generally offered: Fall, Spring. Course Fees: LRH1 \$10; PAG1 \$20; STSH \$5.

KIN 3071. Musculoskeletal Fitness Instruction. (1-2) 1 Credit Hour.

Prerequisite: KIN 3313 or BIO 2053. Instructional techniques applied to health related fitness using resistance training, balance, flexibility, and musculoskeletal conditioning activities. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; PAG1 \$20; STSH \$5.

KIN 3103. Motor Development. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STFK \$57; STSH \$15.

KIN 3113. Scientific Principles of Physical Activity. (3-1) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: KSM1 \$10; LRH1 \$10; STSH \$15.

KIN 3303. Care and Prevention of Athletic Injuries. (3-0) 3 Credit Hours.

Prerequisite: KIN 3313 or BIO 2053. 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. (Formerly titled "Athletic Injuries and Training Procedures.") Generally offered: Fall, Spring, Summer. Course Fees: KSM1 \$10; LRH1 \$10; STSH \$15.

KIN 3313. Anatomy and Physiology for Kinesiology. (3-1) 3 Credit Hours.

Prerequisite: KIN 2303 or HTH 2413. 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. Generally offered: Fall, Spring, Summer. Course Fees: KSM1 \$10; LRH1 \$10; STSH \$15.

KIN 3321. Biomechanics Laboratory. (1-1) 1 Credit Hour.

Prerequisite: KIN 3313 or equivalent (BIO 2053 and BIO 2063) and concurrent enrollment in KIN 3323. Quantitative and qualitative evaluation of human movement through analysis of video and biomechanical data. Application of Biomechanics to sports performance enhancement and injury prevention. This lab will complement the content covered in KIN 3323. Course Fees: KSM1 \$10; LRH1 \$10; STSH \$5.

KIN 3323. Biomechanics. (3-0) 3 Credit Hours.

Prerequisite: KIN 3313 or equivalent (BIO 2053 and BIO 2063). 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. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

KIN 3413. Tactics. (3-0) 3 Credit Hours.

Development, organization, and delivery of appropriate physical activities for children through the adolescent stage. Some fieldwork observation experiences may be required. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; PAG1 \$20; STSH \$15.

KIN 3431. Exercise Physiology Laboratory. (1-1) 1 Credit Hour.

Prerequisite: KIN 3313 or equivalent (BIO 2053 and BIO 2063) and concurrent enrollment in KIN 3433. Laboratory exercises demonstrating principles of exercise physiology. Topics include metabolic, cardiorespiratory, and neuromuscular responses to physical activity and exercise. Course Fees: KSM1 \$10; LRH1 \$10; STSH \$5.

KIN 3433. Exercise Physiology. (3-0) 3 Credit Hours.

Prerequisite: KIN 3313 or equivalent (BIO 2053 and BIO 2063). 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. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

KIN 3441. Health Related Fitness Assessment Laboratory. (0-2) 1 Credit Hour.

Prerequisite: KIN 3433 and concurrent enrollment in KIN 3443. This course includes laboratory and clinical measurements of aerobic capacity, balance, body composition, electrocardiography, flexibility, muscular endurance, muscular strength, and pulmonary function. Students are required to demonstrate competence in administering health related physical fitness. (Formerly titled "Graded Exercise Testing and Fitness Assessment Laboratory.") Course Fees: KSM1 \$10; LRH1 \$10; STSH \$5.

KIN 3443. Health Related Fitness Assessment. (3-0) 3 Credit Hours.

Prerequisite: KIN 3433. A study 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. (Formerly titled "Graded Exercise Testing and Fitness Assessment.") Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

KIN 3453. Fitness Programming and Exercise Prescription. (3-1) 3 Credit Hours.

Prerequisites: KIN 3071, KIN 3323, and 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. Generally offered: Fall, Spring. Course Fees: KSM1 \$10; LRH1 \$10; STSH \$15.

KIN 3463. Musculoskeletal Anatomy. (3-1) 3 Credit Hours.

Prerequisite: KIN 3313 or equivalent (BIO 2053 and BIO 2063), and admission to the Athletic Training concentration or Kinesiology and Health Science concentration. A detailed examination of the nervous, muscular, and skeletal systems. This course focuses on bones, bone markings, articulations, origins, insertions, actions, and innervations of these systems. The etiology and pathophysiology of common sport and exercise related injuries to the musculoskeleton will be introduced. Laboratory examination of the skeletal system may be required. Course Fees: KSM1 \$10; LRH1 \$10; STSH \$15.

KIN 4023. Exercise Psychology. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

KIN 4043. Therapeutic Modalities. (3-0) 3 Credit Hours.

Prerequisites: KIN 3303, KIN 3463, KIN 4143, and admission to the Athletic Training concentration or Kinesiology and Health Science concentration. 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. Generally offered: Fall, Spring. Course Fees: KSM1 \$10; LRH1 \$10; STSH \$15.

KIN 4113. Evaluation. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; PAG1 \$20; STSH \$15.

KIN 4123. Introduction to Sport Psychology. (3-0) 3 Credit Hours.

Prerequisite: KIN 2303. This course involves an in-depth study of the psychological factors that underlie and support human behavior and performance, particularly as it relates to sports. This course introduces contemporary and practical theories regarding mental processes and applicable uses for this information. (Formerly titled "Psychosocial Aspects of Exercise and Sport.") Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

KIN 4143. Evaluation of Athletic Injuries. (3-0) 3 Credit Hours.

Prerequisites: KIN 3303 and KIN 3463, and admission to the Athletic Training concentration or Kinesiology and Health Science concentration. This course deals in depth with issues related to athletic training, including assessment of injuries, and proper taping and wrapping techniques. (Formerly titled "Advanced Athletic Training.") Generally offered: Fall, Spring, Summer. Course Fees: KSM1 \$10; LRH1 \$10; STSH \$15.

KIN 4203. Teaching Secondary Physical Education. (3-1) 3 Credit Hours.

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. Weekly fieldwork in the public schools at the secondary school level is required. Restricted course; advisor code required for registration. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STFK \$57; STSH \$15.

KIN 4233. Advanced Exercise Physiology. (3-1) 3 Credit Hours.

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. This course includes introduction to research in exercise physiology. Course Fees: KSM1 \$10; LRH1 \$10; STSH \$15.

KIN 4243. Musculoskeletal Rehabilitation. (3-1) 3 Credit Hours.

Prerequisites: KIN 3303, KIN 3463, KIN 4143, and admission to the Athletic Training concentration or Kinesiology and Health Science concentration. This course examines various therapeutic exercises and programs used in the treatment and rehabilitation of exercise-related injuries. Generally offered: Fall, Spring, Summer. Course Fees: KSM1 \$10; LRH1 \$10; STSH \$15.

KIN 4253. Exercise Nutrition. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: KSM1 \$10; LRH1 \$10; STSH \$15.

KIN 4263. Clinical Exercise Physiology. (3-1) 3 Credit Hours.

Prerequisites: KIN 3441, KIN 3443, and KIN 3453. This course will examine the essential knowledge, skills, and abilities necessary for exercise physiology practiced in clinical settings. Topics will include diseases of the cardiovascular, pulmonary, and metabolic systems. Skills in administering graded exercise testing with ECG monitoring, pulmonary function testing, and screening for metabolic disease will be emphasized in laboratory settings. Additionally, exercise prescription and programming will be studied for persons with chronic disease. Course Fees: KSM1 \$10; LRH1 \$10; STSH \$15.

KIN 4303. Teaching Elementary Physical Education. (3-1) 3 Credit Hours.

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. Weekly fieldwork in the public schools at the elementary school level is required. Restricted course; advisor code required for registration. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STFK \$57; STSH \$15.

KIN 4343. Movement Awareness. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; PAG1 \$20; STSH \$15.

KIN 4401. Motor Learning Laboratory. (1-1) 1 Credit Hour.

Prerequisite: KIN 3313 or equivalent (BIO 2053 and BIO 2063) and concurrent enrollment in KIN 4403. Laboratory exercises demonstrating the principles of motor learning and motor control. This lab will complement KIN 4403. Course Fees: KSM1 \$10; LRH1 \$10; STSH \$15.

KIN 4403. Motor Learning. (3-0) 3 Credit Hours.

Prerequisite: KIN 3313 or equivalent (BIO 2053 and BIO 2063). Functional applications of motor control and learning theory in skill instruction and sports performance. Motor learning laboratory hours are required. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

KIN 4413. Coaching Athletics. (2-2) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; PAG1 \$20; STSH \$15.

KIN 4423. Developmental/Adapted Physical Activity. (3-1) 3 Credit Hours.

Prerequisites: KIN 3103 and KIN 3413, or consent of instructor. A developmental and functional approach to the study of disabilities in physical activity. Legislation, pathologies, and adaptation principles. Field experience is required throughout the course. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; PAG1 \$20; STSH \$15.

KIN 4911. Independent Study. (0-0) 1 Credit Hour.

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. Course Fee: STSH \$5.

KIN 4912. Independent Study. (0-0) 2 Credit Hours.

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. Course Fee: STSH \$10.

KIN 4913. Independent Study. (0-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fee: STSH \$15.

KIN 4931. Clinical Applications of Athletic Injuries. (1-2) 1 Credit Hour.

Prerequisites: Consent of instructor and admission to the Athletic Training concentration or Kinesiology and Health Science concentration. This course provides practical applications in prevention, diagnosis, treatment, and rehabilitation of athletic injuries, and includes 300 hours of supervised field, laboratory and clinical experiences in athletic training. May be repeated for credit for a maximum of 6 semester credit hours. Course Fees: LRH1 \$10; STFK \$57; STSH \$5.

KIN 4933. Practicum in Kinesiology Research. (0-0) 3 Credit Hours.

Prerequisites: Admission to Kinesiology major and consent of Instructor. This course provides supervised research experience in various areas of kinesiology. May be repeated for credit, but not more than 6 semester credit hours will apply to a bachelor's degree. The 6 semester credit hours of this course can be used to substitute for KIN 4936. (Credit cannot be earned for both KIN 4936 and KIN 4933.) Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

KIN 4936. Internship in Kinesiology. (0-0) 6 Credit Hours.

Prerequisites: Student is required to have a cumulative grade point average of 2.0 or greater and must be within 13 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.) Generally offered: Fall, Spring, Summer. Course Fees: STFK \$57; STSH \$30.

KIN 4943. Athletic Coaching Practicum. (0-0) 3 Credit Hours.

Prerequisites: First Aid and CPR certification and consent of instructor. Supervised coaching practicum with appropriate agency in the field of kinesiology. May be repeated for credit for a maximum of 6 semester credit hours. (Formerly titled "Practicum in Kinesiology.") Generally offered: Spring. Course Fees: LRH1 \$10; STSH \$15.

KIN 4953. Special Studies. (3-0) 3 Credit Hours.

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. Course Fees: KSM1 \$10; LRH1 \$10; STSH \$15.

KIN 4973. Wellness Counseling. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

KIN 4983. Applied Exercise Science. (3-1) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: KSM1 \$10; LRH1 \$10; STSH \$15.

KIN 4993. Honors Thesis. (0-0) 3 Credit Hours.

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. Course Fee: STSH \$15.

Korean (KOR)

Korean (KOR) Courses

KOR 1014. Elementary Korean I. (3-2) 4 Credit Hours. (TCCN = KORE 1411)

Fundamentals of Korean offering the opportunity to develop basic listening, speaking, reading, and writing skills. Introduction of Korean characters and Korean culture. Course Fees: LRLF \$10; MM01 \$7.

KOR 1024. Elementary Korean II. (3-2) 4 Credit Hours. (TCCN = KORE 1412)

Prerequisite: KOR 1014, an equivalent, an appropriate placement test score, or consent of instructor. Fundamentals of Korean offering the opportunity to develop basic speaking, listening, reading, and writing skills. Further study of Korean characters and Korean culture. Course Fee: MM01 \$7.

Latin (LAT)

Latin (LAT) Courses

LAT 1114. Introductory Latin I. (3-2) 4 Credit Hours. (TCCN = LATI 1411)

Fundamentals of Latin grammar and readings in Latin. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall. Course Fees: LRC1 \$16; LRLF \$10.

LAT 1124. Introductory Latin II. (3-2) 4 Credit Hours. (TCCN = LATI 1412)

Prerequisite: LAT 1114. Fundamentals of Latin grammar and readings in Latin. Generally offered: Spring.

LAT 1214. Self-Paced Introductory Latin. (4-0) 4 Credit Hours.

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.

LAT 2113. Intermediate Latin I. (3-0) 3 Credit Hours. (TCCN = LATI 2311)

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. Generally offered: Fall.

LAT 2123. Intermediate Latin II. (3-0) 3 Credit Hours. (TCCN = LATI 2312)

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. Course Fee: LRLF \$10.

LAT 2213. Self-Paced Intermediate Latin. (3-0) 3 Credit Hours.

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.

LAT 3113. Selected Latin Authors. (3-0) 3 Credit Hours.

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.

LAT 3213. Latin Epic Poetry. (3-0) 3 Credit Hours.

Prerequisite: Intermediate Latin II or equivalent. Students will read, analyze and discuss selections from Vergil's Aeneid and Ovid's Metamorphoses, setting the poems in the context of the historical and social events in Rome that inspired them as well as exploring their Greek precedents.

LAT 3223. Latin Lyric Poetry. (3-0) 3 Credit Hours.

Prerequisite: Intermediate Latin II or equivalent. Students will read, analyze and discuss the poetry of Catullus and Horace, setting the poems in the context of the historical and social events in Rome that inspired them and exploring the Greek precedents for the genre of lyric poetry.

LAT 3253. Republican Prose. (3-0) 3 Credit Hours.

Prerequisite: Intermediate Latin II or equivalent. An overview of the development of prose in the Republican era, with an emphasis on the works of Cicero and Caesar. Students consider the rhetorical and generic features of their composition and the historical social and political circumstances that produced them.

LAT 4013. Advanced Readings in Latin. (3-0) 3 Credit Hours.

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.

Latin American Studies (LAS)

Latin American Studies (LAS) Courses

LAS 2013. Latin American Foundations. (3-0) 3 Credit Hours.

This course is designed as an introduction to important debates about Latin American history, politics, society and culture. In this course, we will analyze general and specific questions regarding pre-Hispanic cultures, colonial legacies, cultural heritages, political developments and societal challenges facing the region. The structure of this course is primarily chronological but also thematic and inter-disciplinary, involving anthropological, historical, cultural, and political studies about Latin America.

LAS 4933. Internship in Latin American Studies. (0-0) 3 Credit Hours.

Prerequisite: Consent of internship coordinator and Department Chair. Supervised experience relevant to Latin American studies within selected community organizations. May be repeated for credit. A maximum of 6 semester credit hours may be earned through the internship.

LAS 4953. Topics in Latin American Studies. (3-0) 3 Credit Hours.

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

Linguistics (LNG)

Linguistics (LNG) Courses

LNG 3813. Introduction to Linguistics. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring. Course Fee: MM01 \$7.

LNG 3833. Sociolinguistics. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

LNG 4013. Topics in Linguistics. (3-0) 3 Credit Hours.

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.) Course Fee: MM01 \$7.

Literacy Education (LTED)

Literacy Education (LTED) Courses

LTED 3513. Children's Literature EC–6. (3-0) 3 Credit Hours.

Concurrent enrollment in ECE 3143, ECE 3313, and ECE 3603 is required. 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. (Formerly RDG 3513. Credit cannot be earned for both LTED 3513 and RDG 3513.) Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

LTED 3523. Reading for Teachers-Grades 4–8. (3-0) 3 Credit Hours.

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 "C-" or better for it to serve as a prerequisite for C&I 4626 Clinical Teaching: Grades 4–8. Field experience required. (Formerly RDG 3523. Credit cannot be earned for both LTED 3523 and RDG 3523.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

LTED 3533. Reading and Writing Across the Disciplines-Grades 4–8. (3-0) 3 Credit Hours.

Prerequisite: LTED 3523. Concurrent enrollment in C&I 4543, C&I 4553, and EDP 4203 in semester prior to clinical teaching for Grades 4–8 LA/ RDG/SS 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 Clinical Teaching: Grades 4–8. Field experience required. (Formerly RDG 3533. Credit cannot be earned for both LTED 3533 and RDG 3533.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

LTED 3633. Literature and Other Texts Across the Content Areas-Grades 4–8. (3-0) 3 Credit Hours.

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 Clinical Teaching: Grades 4–8. (Formerly RDG 3633. Credit cannot be earned for both LTED 3633 and RDG 3633.) Generally offered: Spring. Course Fees: LRH1 \$10; STSH \$15.

LTED 3643. Children's Literature for Young Diverse Learners - Infants and Toddlers. (3-0) 3 Credit Hours.

This course is designed to familiarize students with formats and genres of children's books appropriate for young children from 0 to age 5, with a particular focus on books from diverse cultures. Topics will include: the values of children's books for promoting social, linguistic, emotional, and cognitive development, criteria for selecting books, the evaluation of individual books, and ways of fostering young children's engagement with books. (Formerly RDG 3643. Credit cannot be earned for both LTED 3643 and RDG 3643.) Course Fees: LRH1 \$10; STSH \$15.

LTED 3673. Reading for Secondary Teachers-Grades 7–12. (3-0) 3 Credit Hours.

An overview of the developmental nature of reading across the grades with an emphasis on grades 7 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 "C-" or better for it to serve as a prerequisite for C&I 4646 Clinical Teaching: Grades 7–12. Field experience required. (Formerly RDG 3673. Credit cannot be earned for both LTED 3673 and RDG 3673.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

LTED 3683. Writing Development, Processes, and Instruction-Grades 7–12. (3-0) 3 Credit Hours.

Prerequisite: Admission to the Teacher Certification Program. 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 English majors 7-12, this course must be completed with a grade of "C-" or better for it to serve as a prerequisite for C&I 4646 Clinical Teaching: Grades 7-12. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

LTED 3773. Reading and Writing Across the Disciplines-Grades 7–12. (3-0) 3 Credit Hours.

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 4646 Clinical Teaching: Grades 7–12. Field experience required. (Formerly RDG 3773. Credit cannot be earned for both LTED 3773 and RDG 3773.) Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

LTED 3803. Writing Development, Processes, and Instruction-Grades 4–8. (3-0) 3 Credit Hours.

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 Clinical Teaching: Early Childhood–Grade 6 and C&I 4626 Clinical Teaching: Grades 4–8. Restricted course; advisor code required for registration. (Formerly RDG 3803. Credit cannot be earned for both LTED 3803 and RDG 3803.) Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

LTED 3813. Writing Development and Instruction-EC–6. (3-0) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, ECE 3143, ECE 3313, and ECE 3603. Concurrent enrollment with C&I 4303, ECE 4143, and LTED 4833 is required. Examines the developmental nature of writing and contextual factors that impact development. The course focuses on the nature of written language, the writing process, and writing to learn for monolingual children and children who are learning English as a Second Language. 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 Clinical Teaching: Early Childhood–Grade 6. Restricted course; advisor code required for registration. Course Fees: LRH1 \$10; STSH \$15.

LTED 3823. Reading Comprehension-EC–6. (2-2) 3 Credit Hours.

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 LTED 4833. Study of the reading comprehension process, including how textual, reader, psychological, contextual, and cultural factors affect understanding of text for monolingual children and children who are learning English as a Second Language. 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 Clinical Teaching: Early Childhood–Grade 6. Restricted course; advisor code required for registration. Field experience required. (Formerly RDG 3823. Credit cannot be earned for both LTED 3823 and RDG 3823. Credit cannot be earned for both LTED 3823 and BBL 3823.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

LTED 4833. Organizing Literacy Programs for Differentiated Instruction-EC–6. (2-2) 3 Credit Hours.

Prerequisites: Admission to the Teacher Certification Program, completion of C&I 4353, C&I 4403, ECE 4203, and LTED 3823. Concurrent enrollment in C&I 4303 and ECE 4143 is required. May not be taken concurrently with C&I 4353, C&I 4403, ECE 4203, and LTED 3823. Study of the reading comprehension process, including how textual, reader, psychological, contextual, and cultural factors affect understanding of text for monolingual children and children who are learning English as a Second Language. 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 Clinical Teaching: Early Childhood–Grade 6. Restricted course; advisor code required for registration. Field experience required. (Formerly RDG 4833. Credit cannot be earned for both LTED 4833 and RDG 4833.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

LTED 4913. Independent Study. (0-0) 3 Credit Hours.

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. (Formerly RDG 4913.) Course Fee: STSH \$15.

Management (MGT)

Note: Beginning Fall 2019, course fees will be replaced with differential tuition at a rate of \$42 per semester credit hour for upper-division College of Business courses.

Management (MGT) Courses

MGT 3003. Business Communication and Professional Development. (3-0) 3 Credit Hours.

Prerequisites: COM 1043 or COM 1053 or COM 1063, WRC 1023, and classified as a prebusiness or declared major in the College of Business or approval of Department Chair and Dean of the College. 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 are required. (Formerly MGT 3043. Credit cannot be earned for both MGT 3003 and MGT 3043.) Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 3013. Introduction to Organization Theory, Behavior, and Management. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 3023. Understanding People and Organizations. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 3123. Organizational Communication. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3013 with a grade of "C-" or better, and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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.) Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 3253. Interpersonal Communication. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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.) Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 3613. Managing Human Resources. (3-0) 3 Credit Hours.

Prerequisites: MGT 3013 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 4023. Business Plan. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3013 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 4073. International Management. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3013 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 4083. Comparative International Management Practices. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3013, with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 4103. Introduction to Healthcare Management. (3-0) 3 Credit Hours.

Prerequisite: Junior or senior standing, or consent of the instructor. This course will provide students with an understanding of the skills, knowledge and abilities needed to be successful leaders in the dynamic, complex and rewarding field of healthcare management. Topics include the economic, regulatory, political and social framework of the healthcare industry, as well as the roles and expectations of managers in planning, organizing, coordinating and overseeing the delivery of healthcare services. A broad spectrum of healthcare organizations and settings will be included with emphasis on practical relevance and interaction with local healthcare organizations. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 4213. Designing Organizations. (3-0) 3 Credit Hours.

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 approval of Department Chair and Dean of the College. Study of the antecedents and consequences of organizational design and structure. Emphasis on the implications for managing behavior in a rapidly changing global environment. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 4413. Performance Management. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3013 or consent of the instructor. This course examines the effective management of people in the contemporary workplace. Types of performance criteria and the development of each will be covered. Diagnosis of the causes of performance and the evaluation of performance will be examined. Providing feedback, dealing with feedback, and approaches to improving performance will be addressed. Contextual factors such as organizational strategy, hiring practices, and the legal framework will also be considered. The course will emphasize both conceptual understanding and application. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 4433. Introduction to Business Negotiations. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3013 or consent of the instructor. This course will provide students with an understanding of the skills, knowledge and abilities needed to be successful negotiators in management and organizations. Topics include dyadic negotiation, multi-party negotiation, dispute resolution, and persuasion and influence. A broad spectrum of organizational and business settings will be used for students to experience and learn theory and practical skills when negotiating. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 4613. Compensating Employees. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3613 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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.) Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 4623. Staffing Organizations. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3613 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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. Generally Offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 4643. Human Resources Law. (3-0) 3 Credit Hours.

Prerequisites: BLW 3013 and MGT 3003 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 4663. Training and Developing Employees. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3613 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 4803. Managing Human Resources for Competitive Advantage. (3-0) 3 Credit Hours.

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 approval of Department Chair and Dean of the College. 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.") Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 4893. Management Strategy. (3-0) 3 Credit Hours.

Prerequisites: FIN 3013 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 academic advisor 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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: A 3.0 College of Business grade point average, MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

MGT 4923. Leading Organizations and Making Decisions. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 4933. Internship in Management. (0-0) 3 Credit Hours.

Prerequisites: MGT 3003, a 2.5 UTSA grade point average, 6 semester credit hours of management courses, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. This opportunity for managerial work experience requires a semester-long experience in a private business or with a public agency. A written report is required. 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. Generally offered: Fall, Spring, and Summer. Course Fees: BISP \$20; BTSI \$15.

MGT 4943. Managing Teams and Avoiding Conflict. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MGT 3013 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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. (Previously titled Managing Effective Teams and Resolving Conflicts.) Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 4951. Special Studies in Management. (1-0) 1 Credit Hour.

Prerequisites: MGT 3003 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MGT 4953. Special Studies in Management. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 with a grade of "C-" or better and a declared major in the College of Business or approval of Department Chair and Dean of the College. 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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

Management Science (MS)

Note: Beginning Fall 2019, course fees will be replaced with differential tuition at a rate of \$42 per semester credit hour for upper-division College of Business courses.

Management Science (MS) Courses

MS 1023. Business Statistics with Computer Applications I. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in IS 1403 (or IS 1413) and MAT 1053, 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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$10; BTSI \$15; LRB1 \$15.

MS 3043. Business Statistics with Computer Applications II. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in IS 1403 (or IS 1413), MAT 1053, 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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MS 3053. Management Science and Operations Technology. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in IS 1403 (or IS 1413), MAT 1053, 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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MS 3063. Decision Support Systems. (3-0) 3 Credit Hours.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MS 3073. Business Analytics. (3-0) 3 Credit Hours.

This course is designed to provide an introduction to business analytics. It describes and interprets the basic concepts of business analytics, describes basic principles of data mining as a basic tool of business analytics, evaluates the difficulties presented by large databases, and plans, organizes and evaluates methods to prepare raw data. Comparison and contrasts among different business analytics techniques are examined, including different methods of data mining, and provides for interpreting, analyzing and validating results. Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MS 3313. Business Applications of Statistics. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MS 3403. Logistics Management. (3-0) 3 Credit Hours.

This course focuses on analyzing managerial decisions related to the movement and storage of supplies, work-in-process, and finished goods, 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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MS 3413. Purchasing and Inventory Management. (3-0) 3 Credit Hours.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MS 4313. Six Sigma and Lean Operations. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MS 4323. Simulation Applications in Business. (3-0) 3 Credit Hours.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MS 4333. Project Management. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MS 4343. Production/Operations Management. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MS 4353. Service Operations Management. (3-0) 3 Credit Hours.

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. (Same as MKT 4353. Credit cannot be earned for both MS 4353 and MKT 4353.) Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MS 4363. Quality Management and Control. (3-0) 3 Credit Hours.

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. (Same as STA 4803. Credit cannot be earned for both MS 4363 and STA 4803.) Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MS 4383. Predictive Operational Analytics. (3-0) 3 Credit Hours.

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). (Formerly titled Applied Forecasting in Operations.) Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MS 4543. Supply Chain Management. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MS 4913. Independent Study in Management Science. (0-0) 3 Credit Hours.

Prerequisites for business majors: A 3.0 College of Business grade point average, permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

MS 4933. Internship in Management Science. (0-0) 3 Credit Hours.

Prerequisites: A 2.5 grade UTSA point average and approval in writing from the instructor, the Department Chair, and the Associate/Assistant Dean of Undergraduate Studies in the College of Business. See academic advisor 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. A written report is required. May be repeated for credit, but not more than 6 semester credit hours will apply to a bachelor's degree. Generally offered: Summer. Course Fees: BISP \$20; BTSI \$15.

MS 4951. Special Studies in Management Science. (1-0) 1 Credit Hour.

Prerequisite: Consent of instructor, Department Chair and Dean. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MS 4953. Special Studies in Management Science. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor, Department Chair and Dean. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

Management of Technology (MOT)

Note: Beginning Fall 2019, course fees will be replaced with differential tuition at a rate of \$42 per semester credit hour for upper-division College of Business courses.

Management of Technology (MOT) Courses

MOT 4023. Essentials of Technology Management. (3-0) 3 Credit Hours.

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.") Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MOT 4143. Introduction to Project Management. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MOT 4153. Project Management Certification. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor. This course is designed to give students the opportunity to prepare for the Project Management Professional (PMP) and Certified Associate in Project Management (CAPM) certification exams. The course is structured around the Project Management Institute Knowledge Areas including: integration, scope, time, cost, quality, risk, procurement, human resources, communication, and stakeholders. The course focuses on the inputs, tools, techniques and outputs associated with the core project management processes. Students will also complete diagnostics exam instruments and practice exams. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MOT 4203. Strategic Management of Technology and Innovation. (3-0) 3 Credit Hours.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MOT 4313. Disruptive Innovations. (3-0) 3 Credit Hours.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MOT 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisite: Approval in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

MOT 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisite: Approval in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

MOT 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisite: Approval in writing from the instructor, the Department Chair, and the Dean of the College of Business. See academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

MOT 4951. Special Studies in Management of Technology. (1-0) 1 Credit Hour.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MOT 4952. Special Studies in Management of Technology. (2-0) 2 Credit Hours.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MOT 4953. Special Studies in Management of Technology. (3-0) 3 Credit Hours.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

Marketing (MKT)

Note: Beginning Fall 2019, course fees will be replaced with differential tuition at a rate of \$42 per semester credit hour for upper-division College of Business courses.

Marketing (MKT) Courses

MKT 3013. Principles of Marketing. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MKT 3043. Advertising. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MKT 3063. Personal Selling. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MKT 3083. Marketing Research. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MKT 3113. Retailing. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MKT 4033. Social Media Marketing. (3-0) 3 Credit Hours.

Prerequisite: MKT 3013 with a grade of "C-" or better, or consent of instructor, Chair and Dean. Advances in social media and the ease of e-commerce have enabled companies to gain instantaneous crucial customer insights. These insights are translated in to better products and services offered by organizations and governments. In this course, students will learn how to construct a set of objectives and a measurement system that will give them vital ROI information. With the crucial data, managers devise a stronger marketing strategy and a specific marketing campaigns (e.g., digital, social, and mobile) to strengthen relationships with customers at every opportunity. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MKT 4053. New Product Development. (3-0) 3 Credit Hours.

Prerequisite: MKT 3013 with a grade of "C-" or better, or consent of instructor, Chair and Dean. New products and services are critical to the success and growth of all organizations. This course covers the entire product development process, from identifying customer needs, to generating concepts, to prototyping and design, to product launch. Participants will also learn how to build business cases to gain venture capital and/or angel funding, as well as protect their inventions with patents and trademarks. Students in the New Product Development course will learn best practice examples from the industry using case studies, and will have an opportunity to apply their knowledge in a team project. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MKT 4063. Multicultural Marketing. (3-0) 3 Credit Hours.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MKT 4073. International Marketing. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MKT 4093. Consumer Behavior. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MKT 4143. Sports Marketing. (3-0) 3 Credit Hours.

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.) Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MKT 4153. Ethics in Marketing. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MKT 3013 with a grade of "C-" or better. Addresses the moral principles behind the operation and regulation of marketing including; advertising, international marketing, internet and social advertising, marketing research, personal selling, pricing and distribution channels, and product management. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MKT 4233. Integrated Marketing Communications. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MKT 4353. Service Operations Management. (3-0) 3 Credit Hours.

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 MKT 4353 and MS 4353. Marketing majors cannot take MS 4353 as an upper-division Marketing elective.) Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MKT 4763. Real Estate Marketing. (3-0) 3 Credit Hours.

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.) Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MKT 4893. Marketing Capstone. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and 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 through the academic advisor. The course focuses on integrating marketing functions, processes, and concepts into coherent and effective marketing decision making. (Formerly titled "Marketing Strategy.") Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MKT 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: A 3.0 College of Business grade point average, MGT 3003 and 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 academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

MKT 4933. Internship in Marketing. (0-0) 3 Credit Hours.

Prerequisites: MGT 3003 and MKT 3013 with a grade of "C-" or better, a 2.5 UTSA grade point average, 6 semester credit hours of marketing courses, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. This opportunity for marketing work experience requires a semester-long experience in a private business or with a public agency. A written report is required. 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. Only 3 hours will count towards the Marketing degree requirements. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15.

MKT 4951. Special Studies in Marketing. (1-0) 1 Credit Hour.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

MKT 4953. Special Studies in Marketing. (3-0) 3 Credit Hours.

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. Generally offered: Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

Mathematics (MAT)

NOTE: All prerequisites for Mathematics (MAT) courses must be completed with a grade of "C-" or better.

Mathematics (MAT) Courses

MAT 0203. Basic Mathematics. (3-0) 3 Credit Hours.

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 Success Initiative (TSI), 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.) Course Fees: LRS1 \$15; STSI \$15.

MAT 0213. Intermediate Algebra. (3-0) 3 Credit Hours.

Introductory algebra course that includes the Texas Success Initiative (TSI) 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.) Course Fees: LRS1 \$15; STSI \$15.

MAT 1023. College Algebra with Applications. (3-0) 3 Credit Hours. (TCCN = MATH 1314)

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. NOTE: For the purpose of the Three-Attempt Rule, these courses are considered to be equivalent and additional fees may be charged for the third or subsequent attempt to take any of these courses in any combination.) This course is designed for majors outside sciences and engineering. May apply toward the Core Curriculum requirement in Mathematics. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

MAT 1043. Introduction to Mathematics. (3-0) 3 Credit Hours. (TCCN = MATH 1332)

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.) May apply toward the Core Curriculum requirement in Mathematics. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

MAT 1053. Mathematics for Business. (3-0) 3 Credit Hours. (TCCN = MATH 1324)

Prerequisite: Satisfactory performance on a placement examination. This course is designed to prepare the student for MAT 1133 Calculus for Business. Topics include the application of common algebraic functions, including polynomial, exponential, logarithmic, and rational, to problems in business, economics, statistics, finance, and accounting. The applications include mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value. May apply toward the Core Curriculum requirement in Mathematics. (Credit can be earned for only one of the following: MAT 1023, MAT 1033, MAT 1053, MAT 1063, or MAT 1073.) Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

MAT 1073. Algebra for Scientists and Engineers. (1-4) 3 Credit Hours. (TCCN = MATH 1314)

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. NOTE: For the purpose of the Three-Attempt Rule, these courses are considered to be equivalent and additional fees may be charged for the third or subsequent attempt to take any of these courses in any combination.) May apply toward the Core Curriculum requirement in Mathematics. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

MAT 1093. Precalculus. (3-0) 3 Credit Hours. (TCCN = MATH 2312)

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. May apply toward the Core Curriculum requirement in Mathematics. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

MAT 1133. Calculus for Business. (3-0) 3 Credit Hours. (TCCN = MATH 1325)

Prerequisite: MAT 1053 with a grade of "C-" or better, or an equivalent course, or satisfactory performance on a placement examination. This course is the basic study of limits and continuity, differentiation of single and multivariable functions, optimization and graphing, and integration of elementary, single variable functions, with an emphasis on applications in business and economics. May apply toward the Core Curriculum requirement in Mathematics. (Credit cannot be earned for both MAT 1033 and MAT 1133.) Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

MAT 1153. Essential Elements in Mathematics I. (3-0) 3 Credit Hours. (TCCN = MATH 1350)

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.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; MFSM \$30; STSI \$15.

MAT 1163. Essential Elements in Mathematics II. (3-0) 3 Credit Hours. (TCCN = MATH 1351)

Prerequisite: MAT 1153. Algebra, statistics and probability; geometric shapes; measurement; coordinate and transformational geometry. May not be applied toward a major in mathematics. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; MFSM \$30; STSI \$15.

MAT 1193. Calculus for the Biosciences. (3-0) 3 Credit Hours. (TCCN = MATH 2313)

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.) May apply toward the Core Curriculum requirement in Mathematics. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRS1 \$15; STSI \$15.

MAT 1214. Calculus I. (4-0) 4 Credit Hours. (TCCN = MATH 2413)

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.) May apply toward the Core Curriculum requirement in Mathematics. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$16; LRS1 \$20; STSI \$20.

MAT 1224. Calculus II. (4-0) 4 Credit Hours. (TCCN = MATH 2414)

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.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$20; STSI \$20.

MAT 2113. Functions and Modeling. (3-0) 3 Credit Hours.

Prerequisite: MAT 1093 or consent of instructor and admission to the UTeachSA teacher preparation program. In-depth study of concepts needed to teach secondary school mathematics at various levels. Emphasizes the development of the concept of function, exploring function patterns in data sets, and the connections between the main topics of mathematics associated with a secondary school curriculum. Use of appropriate technology is explored. May not be applied toward the Mathematics Concentration of the B.S. degree in Mathematics. (Same as UTE 2113. Credit cannot be earned for both MAT 2113 and UTE 2113).

MAT 2214. Calculus III. (4-0) 4 Credit Hours. (TCCN = MATH 2415)

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.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$20; STSI \$20.

MAT 2233. Linear Algebra. (3-0) 3 Credit Hours. (TCCN = MATH 2318)

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. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

MAT 3013. Foundations of Mathematics. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

MAT 3023. Perspectives on Science and Mathematics. (3-0) 3 Credit Hours.

Prerequisite: MAT 1193, MAT 1214, STA 1053, or consent of instructor. An examination of important episodes in the history of mathematics and science that illustrate the nature of scientific inquiry and convey that scientific and mathematical concepts are not static. Topics may include Galileo's conflict with the Catholic Church, Isaac Newton's formulation of the laws of motion and invention of calculus, Charles Darwin's proposal of the theory of evolution by natural selection, the development of the atomic bomb, and the discovery of the double helix structure of DNA, or others chosen by the instructor. May not be applied toward the Mathematics Concentration of the B.S. degree in Mathematics. (Same as UTE 3023. Credit cannot be earned for both MAT 3023 and UTE 3023. Credit cannot be earned for both MAT 3023 and MAT 4123).

MAT 3103. Data Analysis and Interpretation. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

MAT 3123. Fundamentals of Geometry. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

MAT 3213. Foundations of Analysis. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

MAT 3223. Complex Variables. (3-0) 3 Credit Hours.

Prerequisites: MAT 2214 and MAT 3213. An introduction to complex variables, including elementary functions, line integrals, power series, residues and poles, and conformal mappings. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

MAT 3233. Modern Algebra. (3-0) 3 Credit Hours.

Prerequisite: MAT 3013. 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. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

MAT 3273. Applied Mathematics for Sciences and Engineering. (3-0) 3 Credit Hours.

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. Course Fees: LRS1 \$15; STSI \$15.

MAT 3613. Differential Equations I. (3-0) 3 Credit Hours.

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, Laplace transforms, and may include additional topics such as power series solutions of differential equations, linear systems, and stability. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

MAT 3623. Differential Equations II. (3-0) 3 Credit Hours.

Prerequisite: MAT 3613. Continuation of MAT 3613. May include topics in stability, linear systems, power series solutions, partial differential equations, and boundary value problems. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

MAT 3633. Numerical Analysis. (3-0) 3 Credit Hours.

Prerequisites: MAT 2233, MAT 3213, and one of the following: CS 1063, CS 1713, or CS 2073. Solution of linear and nonlinear equations, curve-fitting, and eigenvalue problems. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

MAT 3653. Stochastic Calculus. (3-0) 3 Credit Hours.

Prerequisite: STA 3513. Probability, random walk, Brownian motion, stationary and evolutionary processes and stochastic differential equations. Course Fees: LRS1 \$15; STSI \$15.

MAT 4013. Graphing Calculator Topics. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

MAT 4113. Computer Mathematical Topics. (3-0) 3 Credit Hours.

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. Generally offered: Spring, Summer. Course Fees: LRS1 \$15; MFSM \$30; STSI \$15.

MAT 4123. History of Mathematics. (3-0) 3 Credit Hours.

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. (Credit cannot be earned for both UTE 3023 and MAT 4123.) Generally offered: Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

MAT 4213. Real Analysis I. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

MAT 4223. Real Analysis II. (3-0) 3 Credit Hours.

Prerequisite: MAT 4213. Lebesgue integral on the real line; n-dimensional spaces; vectors; calculus of functions of several variables; multidimensional integration. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

MAT 4233. Modern Abstract Algebra. (3-0) 3 Credit Hours.

Prerequisites: MAT 2233 and MAT 3013. Basic properties and examples of semigroups, monoids, and groups, detailed study of permutation, dihedral, and congruence groups, cyclic groups, normal subgroups, quotient groups, homomorphism, isomorphism theorems, direct products of groups, The Sylow Theorems, rings and fields and their basic properties, ideals, polynomial rings. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

MAT 4263. Geometry. (3-0) 3 Credit Hours.

Prerequisite: MAT 3013. A study of non-Euclidean geometries, including spherical geometry, hyperbolic geometry and others. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

MAT 4273. Topology. (3-0) 3 Credit Hours.

Prerequisite: MAT 3213. Set theory, including cardinal and ordinal numbers. Topological properties of the real-line and metric spaces. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

MAT 4303. Capstone Course for Mathematics. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

MAT 4353. Mathematical Foundations of Cryptography. (3-0) 3 Credit Hours.

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). Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

MAT 4803. Statistical Quality Control. (3-0) 3 Credit Hours.

Prerequisites: MAT 1224 and STA 3003 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.) Course Fees: LRS1 \$15; STSI \$15.

MAT 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fees: LRS1 \$15; STSI \$15.

MAT 4953. Special Studies in Mathematics. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; STSI \$15.

MAT 4993. Honors Research. (0-0) 3 Credit Hours.

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. Course Fees: LRS1 \$15; STSI \$15.

Mechanical Engineering (ME)

Mechanical Engineering (ME) Courses

ME 1403. Engineering Practice and Graphics. (2-3) 3 Credit Hours. (TCCN = ENGR 1304)

Prerequisites: MAT 1093 and completion of or concurrent enrollment in WRC 1013. Introduction to engineering practice and 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 1402. Credit cannot be earned for both ME 1402 and ME 1403.) Course Fees: LRE1 \$20; STSE \$30.

ME 2173. Numerical Methods. (2-3) 3 Credit Hours.

Prerequisite: EGR 2323. Introduction to numerical algorithms to solve science and engineering problems. Construction and derivation of numerical algorithm as well as application limits. Various numerical approaches in finding roots of linear and non-linear functions, regression analysis, interpolation, curve fitting procedures, differentiation, integration, solutions of system of linear algebraic equations, solutions of ordinary differential equations and boundary value problems. Introduction to structured programming (MATLAB), including error estimation, and stability. (Formerly ME 3173. Credit cannot be earned for both ME 3173 and ME 2173.) Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

ME 3113. Measurements and Instrumentation. (2-3) 3 Credit Hours.

Prerequisites: EE 2213, EGR 2513, PHY 1951, and PHY 1971. Fundamentals of measurement systems theory and laboratory practice; descriptive statistics, probability distributions, error, uncertainty analysis, confidence intervals, hypothesis testing, correlation, linear regression, and plotting. Technical report writing and data acquisition with NI Elvis boards and Multisim, RC circuits, op-amps, filters, strain gauges, and basic embedded systems and programming with Arduino. Generally offered: Fall, Spring, Summer. Course Fees: L001 \$30; LRE1 \$20; STSE \$30.

ME 3241. Materials Engineering Laboratory. (0-3) 1 Credit Hour.

Prerequisite: Concurrent enrollment in or completion of ME 3243. Investigation of the mechanical properties of engineering materials, with emphasis on metals, sample preparation, and metallography. (Formerly ME 3244. Credit cannot be earned for both ME 3244 and ME 3241.) Course Fees: L001 \$30; LRE1 \$20; STSE \$10.

ME 3243. Materials Engineering. (3-0) 3 Credit Hours.

Prerequisites: CHE 1103, EGR 2103, and concurrent enrollment in or completion of ME 3241. Fundamentals in atomic structure, microstructures, properties, and mechanical behavior of engineering materials, such as metals, polymers, and ceramics. (Formerly ME 3244. Credit cannot be earned for both ME 3244 and ME 3243/ME 3241. Prior completion of ME 3244 can be substituted for ME 3243 and ME 3241.) Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

ME 3263. Manufacturing Engineering. (3-0) 3 Credit Hours.

Prerequisites: EGR 2513, ME 3241 and ME 3243 (or ME 3244 in previous catalogs). Manufacturing processes, quality assurance, statistical methods, economic analysis, planning, and communication. (Formerly titled "Materials Processing.") Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

ME 3293. Thermodynamics I. (3-0) 3 Credit Hours.

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. (Credit cannot be earned for both ME 3293 and CME 3103.) Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

ME 3323. Mechanical Vibration. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: LRE1 \$20; STSE \$30.

ME 3513. Mechanism Design. (3-0) 3 Credit Hours.

Prerequisites: EGR 2513 and ME 1403. Introduction to mechanisms, graphical and linear analytical methods for kinematic synthesis of mechanisms; design of cam follower; gearing fundamentals, ordinary and planetary gear trains; and computer-aided design projects. Course Fees: LRE1 \$20; STSE \$30.

ME 3541. Dynamics and Controls Laboratory. (0-2) 1 Credit Hour.

Prerequisites: ME 3113 and concurrent enrollment in or completion of ME 3543. Investigation of the dynamics and control of physical systems. (Formerly ME 4733. Credit cannot be earned for both ME 4733 and ME 3541.) Course Fees: LRE1 \$20; STSE \$10.

ME 3543. Dynamic Systems and Control. (3-0) 3 Credit Hours.

Prerequisites: EGR 2513, EGR 3323, ME 3113, and concurrent enrollment in or completion of ME 3541. 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.) Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

ME 3663. Fluid Mechanics. (3-0) 3 Credit Hours.

Prerequisites: EGR 2323, EGR 2513, and completion of or concurrent enrollment in 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. Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

ME 3813. Mechanics of Solids. (3-0) 3 Credit Hours.

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. (Credit cannot be earned for both ME 3813 and BME 3223.) Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

ME 3823. Machine Element Design I. (3-0) 3 Credit Hours.

Prerequisites: ME 1403, ME 3241 and ME 3243 (or ME 3244 in previous catalogs), and ME 3813. Introduction to design of machine elements, materials selection, static and fatigue failures, shafts, fasteners, springs, gears, bearings and design projects. (Formerly ME 4423. Credit cannot be earned for both ME 3823 and ME 4423.) Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$20; STSE \$30.

ME 4173. High Performance Computing. (3-0) 3 Credit Hours.

Prerequisite: ME 2173. Introduction to UNIX (login, shell scripts, editors, file permissions), visualization (software tools, data formats), Parallel programming (numerical libraries, Message Passing Interface, Trilinos, GPGPU programming). Course Fees: LRE1 \$20; STSE \$30.

ME 4183. Compressible Flow and Propulsion Systems. (3-0) 3 Credit Hours.

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.) Course Fees: LRE1 \$20; STSE \$30.

ME 4243. Intermediate Materials Engineering. (3-0) 3 Credit Hours.

Prerequisites: ME 3241 and ME 3243 (or ME 3244 in previous catalogs) and ME 3813. Selected topics in fabrication and processing of materials; macroscopic and microscopic aspects of the mechanical behavior of metals, ceramics, polymers and composites; Failure mode analysis in materials; optimization of material selection in the design process. Course Fees: LRE1 \$20; STSE \$30.

ME 4293. Thermodynamics II. (3-0) 3 Credit Hours.

Prerequisite: ME 3293. Energy and availability analysis, reactive and nonreactive mixtures, moist air properties, psychrometric systems and analysis, vapor and gas power cycles, refrigeration and heat-pump cycles, thermodynamic relations, and chemical equilibria. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

ME 4312. Thermal and Fluids Laboratory. (0-4) 2 Credit Hours.

Prerequisites: ME 3113, ME 4293, and concurrent enrollment in or completion of ME 4313. Investigation of thermal and fluid physical systems, and design of experiments. (Formerly ME 4733. Credit cannot be earned for both ME 4733 and ME 4312.) Course Fees: LRE1 \$20; STSE \$20.

ME 4313. Heat Transfer. (3-0) 3 Credit Hours.

Prerequisites: EGR 3323, ME 2173, ME 3293, and ME 3663. Generalized potential distribution and gradients, and heat transfer, including transient and steady state conduction, forced and free convection, radiation, and heat exchanger analysis. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

ME 4323. Thermal Systems Design. (3-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

ME 4343. Heating, Air Conditioning, and Refrigeration Design. (3-0) 3 Credit Hours.

Prerequisite: ME 4293. Moist air properties, human comfort, solar radiation, heating loads, design selection, construction, and operation of air conditioning equipment, and duct design. Course Fees: LRE1 \$20; STSE \$30.

ME 4373. Separation Processes. (3-0) 3 Credit Hours.

Prerequisite: ME 4293. Rate- and equilibrium-controlled separation, mass transfer, phase equilibrium, absorption, distillation, extraction, adsorption and membranes. Course Fees: LRE1 \$20; STSE \$30.

ME 4433. Machine Element Design II. (3-0) 3 Credit Hours.

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 project. Course Fees: LRE1 \$20; STSE \$30.

ME 4503. Lean Manufacturing and Enterprise Engineering. (3-0) 3 Credit Hours.

Prerequisite: ME 3263. Concepts and applications of Lean Systems applied to manufacturing and non-manufacturing environments. Topics include lean fundamentals and various tools and methodologies for transformation of companies and organizations into globally competitive enterprises. Team project on Value Streaming Mapping analysis of processes in real settings is required. Course Fees: LRE1 \$20; STSE \$30.

ME 4543. Mechatronics. (2-3) 3 Credit Hours.

Prerequisite: ME 3113. Modeling and analysis of electrical (resistors, capacitors, inductors, diodes, transistors, operational amplifiers, combinational logic and sequential logic) and mechanical systems (spring mass damper), data acquisition and measurements, sensors, actuators, and micro-controller programming. A lab component with emphasis on building electrical circuits, data acquisition using LabVIEW, and integration of sensors, actuators, and micro-controller programming (Arduino) to create a mechatronics system. Generally offered: Fall, Spring. Course Fees: L001 \$30; LRE1 \$20; STSE \$30.

ME 4553. Automotive Vehicle Dynamics. (3-0) 3 Credit Hours.

Prerequisites: EGR 2323 and EGR 2513. Dynamics and control of automotive systems, handling, tires, suspension, steering, and aerodynamic forces. Course Fees: LRE1 \$20; STSE \$30.

ME 4563. Computer Integrated Manufacturing. (3-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

ME 4573. Facilities Planning and Design. (3-0) 3 Credit Hours.

Prerequisite: ME 3263. Product, process, and schedule design, flow, space, and activity relationships, material handling, layout planning models and design algorithms, and warehouse operations. Course Fees: LRE1 \$20; STSE \$30.

ME 4583. Enterprise Process Engineering. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: LRE1 \$20; STSE \$30.

ME 4593. Alternative Energy Sources. (3-0) 3 Credit Hours.

Prerequisites: ME 3293 and ME 3663. 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.) Course Fees: LRE1 \$20; STSE \$30.

ME 4603. Finite Element Analysis. (3-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

ME 4613. Power Plant System Design. (3-0) 3 Credit Hours.

Prerequisite: ME 4293. 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. Course Fees: LRE1 \$20; STSE \$30.

ME 4623. Internal Combustion Engines. (3-0) 3 Credit Hours.

Prerequisite: ME 4293. 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. Course Fees: LRE1 \$20; STSE \$30.

ME 4643. Pressure Vessel and Piping Design. (3-0) 3 Credit Hours.

Prerequisites: ME 3663 and ME 3813. ASME Section XIII Boiler and Pressure Vessel code, inspection, maintenance, repair, and modification of pressure vessels. Piping design and construction. Course Fees: LRE1 \$20; STSE \$30.

ME 4653. Oil and Gas Engineering and Reservoir Geomechanics. (3-0) 3 Credit Hours.

Prerequisites: ME 3663 and ME 3813. Introduction to the oil and gas industry, Measurement; deformation mechanisms in rock; rock fracture description and analysis; wellbore stresses and failure; wellbore stability analysis; fault stability analysis; depletion-induced reservoir deformation; and hydraulic fracturing. Course Fees: LRE1 \$20; STSE \$30.

ME 4683. Corrosion Engineering. (3-0) 3 Credit Hours.

Prerequisites: ME 3241 and ME 3243 (or ME 3244 in previous catalogs). Principles of electrochemistry, fundamentals of the environmental degradation of materials, corrosion thermodynamics and kinetics, corrosion phenomenology, and corrosion control and prevention. Course Fees: LRE1 \$20; STSE \$30.

ME 4723. Reliability and Quality Control in Engineering Design. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: LRE1 \$20; STSE \$30.

ME 4773. Robotics. (3-0) 3 Credit Hours.

Prerequisites: EGR 2513 and ME 2173. Kinematics, dynamics, planning and control of mobile robots and manipulators. Special topics may include legged robots, soft robots, climbing robots, advanced control methods, image processing, computer vision, estimation. A LEGO-based laboratory with emphasis on prototyping robotic systems for practical applications. Course Fees: LRE1 \$20; STSE \$30.

ME 4801. Manufacturing Practices Laboratory. (0-2) 1 Credit Hour.

Prerequisite: Concurrent enrollment in or completion of ME 3263. Use of measurement tools, saw, drill, mill, lathe, and welder. Course Fees: LRE1 \$20; STSE \$10.

ME 4812. Senior Design I. (2-0) 2 Credit Hours.

Prerequisites: ME 3113, ME 3263, ME 3543, ME 3663, ME 3823, and ME 4293. Completion of or concurrent enrollment in ME 4313, ME 4543 (or ME 3513 in previous catalogs), ME 4801, and ME 4312 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. This course, as well as ME 4313, ME 4543, ME 4801, and ME 3541, must be completed with a grade of "C-" or better to serve as prerequisites for ME 4813. (Formerly ME 4811 and ME 4803. Credit cannot be earned for more than one of the following: ME 4812, ME 4803, or ME 4811.) Course Fees: LRE1 \$20; STSE \$20.

ME 4813. Senior Design II. (2-3) 3 Credit Hours.

Prerequisites: ME 4312, ME 4313, ME 4543, ME 4801, and 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. Generally offered: Fall, Spring. Course Fees: L001 \$30; LRE1 \$20; STSE \$30.

ME 4911. Independent Study. (0-0) 1 Credit Hour.

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. Course Fees: LRE1 \$20; STSE \$10.

ME 4912. Independent Study. (0-0) 2 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$20.

ME 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fees: LRE1 \$20; STSE \$30.

ME 4953. Special Studies in Mechanical Engineering. (3-0) 3 Credit Hours.

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 9 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Generally offered: Fall, Spring. Course Fees: LRE1 \$20; STSE \$30.

ME 4963. Mechanical Engineering Applications to Biomedical Systems. (3-0) 3 Credit Hours.

Prerequisites: EGR 2513, ME 3663 and ME 3813. Applications of dynamics, solid mechanics and fluid mechanics to biomedical systems. (Formerly titled Bioengineering.) Course Fees: LRE1 \$20; STSE \$30.

Media Studies (MES)

Media Studies (MES) Courses

MES 3113. Film Studies. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fee: MM01 \$7.

MES 3333. Digital Video Production. (2-3) 3 Credit Hours.

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. Generally offered: Spring. Course Fee: MM01 \$7.

MES 4333. Digital Video Practicum. (3-2) 3 Credit Hours.

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. Course Fee: MM01 \$7.

Medical Humanities (MHU)

Medical Humanities (MHU) Courses

MHU 2013. Introduction to Medical Humanities. (3-0) 3 Credit Hours.

Survey of the human aspects of medical practice as addressed through the social sciences, arts, and humanities. Examines concepts of illness and wellness as influenced by the study of history, psychology, cross-cultural variation, ethics, and aesthetics. Emphasis on systems of meaning, representation, reflective practice, and the dynamics of patient-provider interactions. Provides a history of the field of medical humanities and outlines current and future career paths.

MHU 4813. Seminar in Medical Humanities. (3-0) 3 Credit Hours.

Prerequisite: MHU 2013. Examines current theories, critiques, and applied approaches in medical humanities. Reviews case studies exemplifying contrasting or competing definitions of health, wellness, illness, embodiment, disease, and disability. Sample topics include body image, diagnosis, narrative medicine, and professionalization. May be taught from different perspectives depending upon faculty expertise and interests.

MHU 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: MHU 2013, Medical Humanities major, and 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.

MHU 4931. Internship in Medical Humanities. (0-0) 1 Credit Hour.

Prerequisite: Consent of instructor required. Supervised experience relevant to medical humanities within selected community organizations. May be repeated for credit. A maximum of 6 semester credit hours may be earned through Internship in Medical Humanities.

MHU 4932. Internship in Medical Humanities. (0-0) 2 Credit Hours.

Prerequisite: Consent of instructor required. Supervised experience relevant to medical humanities within selected community organizations. May be repeated for credit. A maximum of 6 semester credit hours may be earned through Internship in Medical Humanities.

MHU 4933. Internship in Medical Humanities. (0-0) 3 Credit Hours.

Prerequisite: Consent of instructor required. Supervised experience relevant to medical humanities within selected community organizations. May be repeated for credit. A maximum of 6 semester credit hours may be earned through Internship in Medical Humanities.

Mexican American Studies (MAS)

Mexican American Studies (MAS) Courses

MAS 2013. Introduction to Chicano(a) Studies. (3-0) 3 Credit Hours. (TCCN = HUMA 1305)

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly BBL 2013. Credit cannot be earned for both MAS 2013 and BBL 2013.) Generally offered: Spring. Course Fees: LRC1 \$12; LRH1 \$10; STSH \$15.

MAS 2023. Latino Cultural Expressions. (3-0) 3 Credit Hours. (TCCN = HUMA 1311)

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. May be applied toward the Core Curriculum requirement in Creative Arts. (Same as BBL 2023. Credit cannot be earned for both MAS 2023 and BBL 2023.) Course Fees: LRC1 \$12; LRH1 \$10; STSH \$15.

MAS 2033. Multiculturalism in the Southwest. (3-0) 3 Credit Hours.

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. (Same as BBL 2033. Credit cannot be earned for both MAS 2033 and BBL 2033.) Course Fees: LRH1 \$10; STSH \$15.

MAS 3003. Musical Mestizaje. (3-0) 3 Credit Hours.

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. Course Fees: LRH1 \$10; STSH \$15.

MAS 3013. Chicana/o Queer Communities, Identities and Theories. (3-0) 3 Credit Hours.

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. Course Fees: LRH1 \$10; STSH \$15.

MAS 3023. Historical Legacies: Chicanas/os in Education. (3-0) 3 Credit Hours.

This course presents key texts that are central to the study of Chicanas/os in education. This course critically examines the historical legacies and contemporary experiences of Chicana/o children and youth in U.S. educational institutions. The course will present various theoretical perspectives that problematize the pervasive history of educational inequality and patterns of academic attainment and achievement throughout the educational pipeline. Special attention will be given to the pervasive history of segregation, tracking, language oppression, and assimilationist ideologies and practices, as well as the current struggles for educational justice in Chicana/o schools and communities. Course Fees: LRH1 \$10; STSH \$15.

MAS 3033. Mexican Americans in the Southwest. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

MAS 3043. Social Psychological Considerations in Mexican American Communities. (3-0) 3 Credit Hours.

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.) Course Fees: LRH1 \$10; STSH \$15.

MAS 3413. Mexican American Family. (3-0) 3 Credit Hours.

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.) Course Fees: LRH1 \$10; STSH \$15.

MAS 4083. Research Seminar in Mexican American Studies. (3-0) 3 Credit Hours.

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.) Generally offered: Spring. Course Fees: LRH1 \$10; STSH \$15.

MAS 4931. Internship in Mexican American Studies. (0-0) 1 Credit Hour.

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. Course Fee: STSH \$5.

MAS 4932. Internship in Mexican American Studies. (0-0) 2 Credit Hours.

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. Course Fee: STSH \$10.

MAS 4933. Internship in Mexican American Studies. (0-0) 3 Credit Hours.

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. Course Fee: STSH \$15.

MAS 4953. Special Studies in Mexican American Studies. (3-0) 3 Credit Hours.

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 is required. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

MAS 4993. Honors Thesis. (0-0) 3 Credit Hours.

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. Course Fee: STSH \$15.

Military Science (MSC)

Military Science (MSC) Courses

MSC 1001. Introduction to the Army and Critical Thinking Laboratory. (0-2) 1 Credit Hour.

Corequisite: Concurrent enrollment in MSC 1012. This two hour mandatory laboratory applies and reinforces classroom instruction with outdoor, hands-on training on campus. In addition, it provides an opportunity to experience unique training opportunities unavailable to the general public at nearby Camp Bullis, and other local military installations. (Formerly titled "Introduction to Army ROTC Laboratory").

MSC 1012. Introduction to the Army and Critical Thinking. (2-0) 2 Credit Hours.

Corequisite: Concurrent enrollment in MSC 1001. Introduces personal challenges and competencies that are critical for effective leadership. Students learn how the personal development of life skills such as critical thinking, time management, goal setting, stress management, and comprehensive fitness relate to leadership, and the Army profession. Students attend two hours of lecture, a required two hours of leadership laboratory (MSC 1001) plus participate in organized physical fitness training. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. Concurrent enrollment in KIN 1001 Ind PhysAct: AROTC is recommended. (Formerly MSC 1011. Credit cannot be earned for both MSC 1012 and MSC 1011.) (Formerly titled "Introduction to Army ROTC").

MSC 1101. Adaptive Leadership and Professional Competence Laboratory. (0-2) 1 Credit Hour.

Corequisite: Concurrent enrollment in MSC 1122. This two hour mandatory laboratory applies and reinforces classroom instruction with outdoor, hands-on training on campus. In addition, it provides an opportunity to experience unique training opportunities unavailable to the general public at nearby Camp Bullis, and other local military installations. (Formerly titled "Introduction to Tactical Leadership Laboratory").

MSC 1122. Adaptive Leadership and Professional Competence. (2-0) 2 Credit Hours.

Corequisite: Concurrent enrollment in MSC 1101. This course introduces Students to the professional challenges and competencies that are needed for effective execution of the profession of arms and Army communication. Through this course, Students will learn how Army ethics and values shape the army and the specific ways that these ethics are inculcated into Army culture. Students attend two hours of lecture, a required two hours of leadership laboratory (MSC 1101) plus participate in organized physical fitness training. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. Concurrent enrollment in KIN 1001 Ind PhysAct: AROTC is recommended. (Formerly MSC 1021. Credit cannot be earned for both MSC 1122 and MSC 1021.) (Formerly titled "Introduction to Tactical Leadership").

MSC 2011. Leadership and Decision Making Laboratory. (0-2) 1 Credit Hour.

Corequisite: Concurrent enrollment in MSC 2012. This two hour mandatory laboratory applies and reinforces classroom instruction with outdoor, hands-on training on campus. In addition, it provides an opportunity to experience unique training opportunities unavailable to the general public at nearby Camp Bullis, and other local military installations. (Formerly titled "Foundations of Leadership Laboratory").

MSC 2012. Leadership and Decision Making. (2-0) 2 Credit Hours.

Corequisite: Concurrent enrollment in MSC 2011. This is an academically challenging course where Students will study, practice, and apply the fundamentals of Army Leadership, Officership, Army Values and Ethics, Personal Development, and small unit tactics at the squad level. Students are required to demonstrate writing skills and present information briefings in preparation for becoming a successful future U.S. Army officer. Students attend two hours of lecture, a required two hours of leadership laboratory (MSC 2011) plus participate in physical fitness training. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. Concurrent enrollment in KIN 1001 Ind PhysAct: AROTC is recommended. (Formerly titled "Foundations of Leadership"). Generally offered: Fall.

MSC 2021. Army Doctrine and Team Development Laboratory. (0-2) 1 Credit Hour.

Corequisite: Concurrent enrollment in MSC 2022. This two hour mandatory laboratory applies and reinforces classroom instruction with outdoor, hands-on training on campus. In addition, it provides an opportunity to experience unique training opportunities unavailable to the general public at nearby Camp Bullis, and other local military installations. (Formerly titled "Foundations of Tactical Leadership Laboratory").

MSC 2022. Army Doctrine and Team Development. (2-0) 2 Credit Hours.

Corequisite: Concurrent enrollment in MSC 2021. This course examines the challenges of leading teams in the complex operational environment. 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. Students develop greater self-awareness as they assess their own leadership styles and practice communication and team building skills. Students attend two hours of lecture, a required two hours of leadership laboratory (MSC 2021) plus participate in physical fitness training. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. Concurrent enrollment in KIN 1001 Ind PhysAct: AROTC is recommended. (Formerly titled "Foundations of Tactical Leadership"). Generally offered: Spring.

MSC 3011. Training Management and the Warfighting Functions Laboratory. (0-2) 1 Credit Hour.

Corequisite: Concurrent enrollment in MSC 3013. This two hour mandatory laboratory applies and reinforces classroom instruction with outdoor, hands-on training on campus. In addition, it provides an opportunity to experience unique training opportunities unavailable to the general public at nearby Camp Bullis, and other local military installations. (Formerly titled "Leading Small Organizations I Laboratory").

MSC 3013. Training Management and the Warfighting Functions. (3-0) 3 Credit Hours.

Prerequisites: MSC 1012, MSC 1122, MSC 2012, and MSC 2022, or consent of instructor. Concurrent enrollment in MSC 3011. Concurrent enrollment in MSC 3011. This course introduces students to Military Mission Planning, the Army Operations Order Process, Military Land Navigation, the Tenants of Mission Command and the tactical skills and knowledge needed to lead at the squad and platoon level. At the conclusion of this course, students will be capable of planning, coordinating, navigating, motivating and leading a squad and platoon in the execution of a mission during a classroom PE, a Leadership Lab, or during a Leader Training Exercise (LTX). Students will receive feedback on their abilities as a leader and how to improve those leader skills that they can be further developed into a successful U.S. Army officer. Students attend three hours of lecture, two hours of leadership laboratory (MSC 3011) 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 Ind PhysAct: AROTC is recommended. (Formerly titled "Leading Small Organizations I"). Generally offered: Fall.

MSC 3021. Applied Leadership in Small Unit Operations Laboratory. (0-2) 1 Credit Hour.

Corequisite: Concurrent enrollment in MSC 3023. This two hour mandatory laboratory applies and reinforces classroom instruction with outdoor, hands-on training on campus. In addition, it provides an opportunity to experience unique training opportunities unavailable to the general public at nearby Camp Bullis, and other local military installations. (Formerly titled "Leading Small Organizations II Laboratory").

MSC 3023. Applied Leadership in Small Unit Operations. (3-0) 3 Credit Hours.

Prerequisite: MSC 3013 or consent of instructor. Concurrent enrollment in MSC 3021. This course continues to build on the skills and fundamentals taught and discussed during MSC 3013. Students will continue to study, practice, and apply the fundamentals of Army Leadership, Officership, Army Values and Ethics, Personal Development, and small unit tactics at the platoon level. At the conclusion of this course, students will be capable of planning, coordinating, navigating, motivating and leading a platoon in the execution of a mission during a classroom PE, a Leadership Lab, or during a Leader Training Exercise (LTX). Successful completion of this course prepares students for the ROTC Cadet Leader Course (CLC), which they will attend in the summer at Fort Knox, KY. Students attend three hours of lecture, two hours of leadership laboratory (MSC 3021) 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 Ind PhysAct: AROTC is recommended. (Formerly titled "Leading Small Organizations II"). Generally offered: Spring.

MSC 3033. American Military History. (3-0) 3 Credit Hours.

Prerequisites: MSC 1012, MSC 1122, MSC 2012, and MSC 2022, or consent of instructor. A comprehensive, but brief account of the US Army from past to present. Integrates the basic knowledge of American military history into the future officer's education. This is an Army standardized, mandatory course that is a part of pre-commissioning training for contracted US Army ROTC cadets. Employs American military history as a tool for studying military professionalism and applying critical-thinking skills and decision-making skills to military problems. Analyzes the definition of Military History, the theory and practice of war, and the American Military System as an intellectual framework for applying critical-thinking skills and problem-solving skills to the study of historical military problems.

MSC 4011. The Army Officer Laboratory. (0-2) 1 Credit Hour.

Corequisite: Concurrent enrollment in MSC 4013. This two hour mandatory laboratory applies and reinforces classroom instruction with outdoor, hands-on training on campus. In addition, it provides an opportunity to experience unique training opportunities unavailable to the general public at nearby Camp Bullis, and other local military installations. (Formerly titled "Adaptive Leadership Laboratory").

MSC 4013. The Army Officer. (3-0) 3 Credit Hours.

Prerequisite: MSC 3023 or consent of instructor. Concurrent enrollment in MSC 4011. This is an advanced course that places primary emphasis on Officership with our Senior Students. The overall objective of this course is to focus on the leadership development, critical thinking and final preparation for commissioning as U.S. Army 2nd Lieutenant. Students attend three hours of lecture, two hours of leadership laboratory (MSC 4011) 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 Ind PhysAct: AROTC is recommended. (Formerly titled "Adaptive Leadership"). Generally offered: Fall.

MSC 4021. Company Grade Leadership Laboratory. (0-2) 1 Credit Hour.

Corequisite: Concurrent enrollment in MSC 4023. This two hour mandatory laboratory applies and reinforces classroom instruction with outdoor, hands-on training on campus. Under the supervision of the Professor of Military Science, Senior Cadets are trained to forecast, plan resource and execute training events and venues for the entire ROTC Battalion. In addition, it provides an opportunity to experience unique training opportunities unavailable to the general public at nearby Camp Bullis, and other local military installations. (Formerly titled "Leadership in a Complex World Laboratory").

MSC 4023. Company Grade Leadership. (3-0) 3 Credit Hours.

Prerequisite: MSC 4013 or consent of instructor. Concurrent enrollment in MSC 4021. Continues the methodology from MSC 4013. This course places significant emphasis on preparing Cadets for their Officer Basic Course, and their first unit of assignment. Cadets explore military professional ethics and ethical decision making process and how it applies to a complex operational environment. Cadets gain practical experience in cadet battalion leadership roles, demonstrate personnel skills in operations and communications, develop and evaluate junior students and gain an understanding of the contemporary military operating environment. Students attend three hours of lecture, two hours of leadership laboratory (MSC 4021) 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 Ind PhysAct: AROTC is recommended. (Formerly titled "Leadership in a Complex World"). Generally offered: Spring.

MSC 4033. Practical Leadership. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

Multidisciplinary Studies (MDS)

Multidisciplinary Studies (MDS) Courses

MDS 2013. Introduction to Multidisciplinary Studies. (3-0) 3 Credit Hours.

Introduction to Multidisciplinary Studies as an academic program. This course provides foundational skills from various academic areas and methodologies for approaching complex issues across the disciplines. Students develop and apply critical thinking, problem solving, and effective oral and written communication skills to social, political, scientific, and civic problems. The course includes a capstone project in which students plan a program of study appropriate within the Multidisciplinary Studies degree.

MDS 4911. Independent Study in Multidisciplinary Studies. (0-0) 1 Credit Hour.

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.

MDS 4912. Independent Study in Multidisciplinary Studies. (0-0) 2 Credit Hours.

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.

MDS 4913. Independent Study in Multidisciplinary Studies. (0-0) 3 Credit Hours.

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.

MDS 4933. Internship in Multidisciplinary Studies. (0-0) 3 Credit Hours.

Prerequisite: Consent of internship coordinator. Supervised experience relevant to the student's program of study within selected community organizations. May be repeated for credit, but not more than 6 semester credit hours of internship will apply to a bachelor's degree.

MDS 4983. Senior Seminar for Multidisciplinary Studies. (3-0) 3 Credit Hours.

Prerequisite: Declared major in Multidisciplinary Studies and senior status. 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. Generally offered: Fall, Spring.

Museum Studies (MSM)

Museum Studies (MSM) Courses

MSM 3003. Fundamentals of Museum Studies. (3-0) 3 Credit Hours.

A general overview of the field of museum studies, including curatorship, collections management, fieldwork, exhibits, interpretation, educational and public programming, marketing, fundraising, and administration.

MSM 4813. Topics in Museum Science. (3-0) 3 Credit Hours.

Prerequisite: MSM 3003 or consent of instructor. Advanced examination of one or more topics in the museum profession. May be repeated for credit when topics vary.

MSM 4913. Independent Study in Museum Studies. (0-0) 3 Credit Hours.

Prerequisite: consent of instructor. Scholarly research under the supervision of a faculty member on method, theory, or practice in the museum profession. May be repeated for credit, but not more than 6 hours of independent study, regardless of discipline, may apply to the Minor in Museum Studies or a bachelor's degree.

MSM 4933. Museum Internship. (0-0) 3 Credit Hours.

Prerequisite: consent of instructor. Supervised work at a museum in one or more areas of museum studies. Internships in other major or minor disciplines may be substituted for the Museum Internship course when conducted at museums or galleries. May be repeated for credit in the minor, up to 6 hours.

Music (MUS)

Music (MUS) Courses

MUS 1102. Aural Skills I. (2-1) 2 Credit Hours. (TCCN = MUSI 1216)

Enrollment is limited to music majors and students pursuing the Minor in Music. Introductory course in diatonic sight-singing and ear training. Includes the study of solfege, dictation (rhythmic, melodic, and harmonic), error detection, transcription, and form. Should be taken concurrently with MUS 1112. May not be attempted more than two times. Generally offered: Fall.

MUS 1112. Basic Skills of Music I. (2-1) 2 Credit Hours. (TCCN = MUSI 1211)

Enrollment is limited to music majors and students pursuing the Minor in Music. Introductory course in music theory, with emphasis on fundamentals and rudiments. Also includes an introduction to diatonic harmony, counterpoint, and fugue as applied to repertoire from a variety of style periods. Should be taken concurrently with MUS 1102. May not be attempted more than two times. Generally offered: Fall.

MUS 1122. Aural Skills II. (2-1) 2 Credit Hours. (TCCN = MUSI 1217)

Prerequisite: MUS 1102. Enrollment is limited to music majors and students pursuing the Minor in Music. Continued study of sight-singing and ear training with more advanced diatonic materials. Includes the study of solfege, dictation (rhythmic, melodic, and harmonic), error detection, transcription, and form. Should be taken concurrently with MUS 1132. May not be attempted more than three times. Generally offered: Spring.

MUS 1132. Basic Skills of Music II. (2-1) 2 Credit Hours. (TCCN = MUSI 1212)

Prerequisite: MUS 1112. Enrollment is limited to music majors and students pursuing the Minor in Music. Continued study of music theory with emphasis on the development of analytical and compositional skills as applied to diatonic music from a variety of style periods. Also includes an introduction to small forms. May not be attempted more than three times. Generally offered: Spring.

MUS 1141. Beginning Composition. (1-1) 1 Credit Hour.

Prerequisites: MUS 1102 and MUS 1112. Enrollment is limited to music majors. An introduction to the fundamentals and techniques of composition, including development of listening skills, notation, and improvisational aspects of generating original creative ideas. Attendance at composition seminar is required.

MUS 1511. Music Performance-Secondary Instrument. (0-0) 1 Credit Hour.

Enrollment is limited to music majors. 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. Generally offered: Fall, Spring. Course Fee: M001 \$100.

MUS 1512. Music Performance-Private Instruction. (0-0) 2 Credit Hours.

Enrollment is limited to music majors. Private instruction for all first-semester students, both freshmen and transfer students, whose principal instrument is: 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. Attendance at weekly performance seminar and concurrent enrollment in an assigned University ensemble are required. Students must earn a grade of "C-" or higher to progress to MUS 1542. May be repeated for credit a maximum of two semesters. Generally offered: Fall, Spring. Course Fee: M001 \$100.

MUS 1521. Class Piano 1. (1-1) 1 Credit Hour. (TCCN = MUSI 1181)

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. Generally offered: Fall. Course Fee: IUM1 \$30.

MUS 1531. Class Voice. (1-0) 1 Credit Hour. (TCCN = MUSI 1183)

For students with no previous vocal training. Offers the opportunity for development of fundamentals of voice technique through in-class performances of suitable songs. Generally offered: Fall, Spring.

MUS 1542. Music Performance-Private Instruction I. (0-0) 2 Credit Hours.

Prerequisite: Successful completion of MUS 1512 with a grade of "C-" or better. Private instruction for students whose principal instrument is: 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. Attendance at weekly performance seminar and concurrent enrollment in an assigned University ensemble are required. May be repeated for credit a maximum of two semesters. Generally offered: Fall, Spring. Course Fee: M001 \$100.

MUS 1552. Functional Piano for Keyboard Principals. (2-0) 2 Credit Hours.

Prerequisite: Music major with piano or organ as the principal instrument. Offers the opportunity for development of keyboard skills, harmonization, transposition, and improvisation of accompaniments to melodies, sight-reading, score reading, and multiple-part reading. Generally offered: Spring of even-numbered years. Course Fee: IUM1 \$30.

MUS 1621. Class Piano 2. (1-1) 1 Credit Hour.

Prerequisite: MUS 1521. 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. Generally offered: Spring. Course Fee: IUM1 \$30.

MUS 2001. Music Convocation. (1-0) 1 Credit Hour.

Prerequisite: Music major. Required attendance at a selected number of approved music concerts and recitals as determined by the Department of Music. May be repeated for credit. (Formerly titled "Concert Music.") Generally offered: Fall, Spring.

MUS 2102. Aural Skills III. (2-1) 2 Credit Hours. (TCCN = MUSI 2216)

Prerequisite: MUS 1122. Enrollment is limited to music majors. Continued study of sight-singing and ear training with repertoire featuring decorative chromaticism, chromatic chords, and modulation. Includes the study of solfege, dictation (rhythmic, melodic, and harmonic), error detection, transcription, and form. Should be taken concurrently with MUS 2152. May not be attempted more than three times. Generally offered: Fall.

MUS 2112. Aural Skills IV. (2-1) 2 Credit Hours. (TCCN = MUSI 2217)

Prerequisite: MUS 2102. Enrollment is limited to music majors. Continued study of sight-singing and ear training as applied to repertoire featuring increased chromaticism and compositional techniques first introduced in the twentieth century. Includes the study of solfege, dictation (rhythmic, melodic, and harmonic), error detection, transcription, and form. Should be taken concurrently with MUS 2162. May not be attempted more than three times. Generally offered: Spring.

MUS 2122. Aural Skills Review. (2-1) 2 Credit Hours.

Prerequisite: MUS 2112 or the equivalent. Review of aural skills materials for incoming transfer students. Designed to satisfy deficiencies indicated by the aural skills proficiency exam. Offers an overview of sight-singing methodology and ear training techniques, with an emphasis on rhythmic, melodic, and harmonic materials drawn from common-practice literature. Generally offered: Fall.

MUS 2132. Introduction to Improvisation. (0-0) 2 Credit Hours.

Prerequisites: Enrollment is limited to music majors and students pursuing the Minor in Jazz Studies. 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 two semesters. Generally offered: Fall, Spring. Course Fee: M001 \$100.

MUS 2141. Composition II. (0-0) 1 Credit Hour.

Prerequisites: MUS 1122, MUS 1132, and MUS 1141. Private study of the fundamentals of composition through small forms. Attendance at composition seminar is required. May be repeated for credit a maximum of two times. (Formerly MUS 2142. Credit cannot be earned for both MUS 2141 and MUS 2142.) Generally offered: Fall, Spring. Course Fee: M001 \$100.

MUS 2152. Basic Skills of Music III. (2-1) 2 Credit Hours. (TCCN = MUSI 2211)

Prerequisite: MUS 1132. Enrollment is limited to music majors. Continued study of music theory, with emphasis on the analysis and composition of chromatic materials and modulation as applied to repertoire from a variety of style periods. Also includes the continued study of small forms. Should be taken concurrently with MUS 2102. May not be attempted more than three times. Generally offered: Fall.

MUS 2162. Basic Skills of Music IV. (2-1) 2 Credit Hours. (TCCN = MUSI 2212)

Prerequisite: MUS 2152. Continued study of music theory, with emphasis on nineteenth-century chromaticism, large-scale forms, and analytical techniques for early twentieth-century music. Should be taken concurrently with MUS 2112. May not be attempted more than three times. Generally offered: Spring.

MUS 2172. Tonal Analysis Review. (2-1) 2 Credit Hours.

Prerequisite: MUS 2162 or the equivalent. Review of tonal analysis for incoming transfer students. Designed to satisfy deficiencies indicated by the music theory proficiency exam. Offers an overview of harmony and form, with an emphasis on binary form, ternary form, rondo form, sonata-allegro form, and contrapuntal techniques. (Formerly MUS 2173 and MUS 3113. Credit cannot be earned for more than one of the following: MUS 2172, MUS 2173, or MUS 3113).

MUS 2183. Jazz Skills. (0-0) 3 Credit Hours.

Prerequisites: MUS 1122 and MUS 1132 or instructor approval. 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.) Generally offered: Fall, Spring.

MUS 2232. Introduction to Guitar Literature. (2-1) 2 Credit Hours.

Enrollment is limited to music majors. 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. Generally offered: Fall of odd-numbered years.

MUS 2243. World Music in Society. (3-0) 3 Credit Hours. (TCCN = MUSI 1307)

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. May be applied toward the Core Curriculum requirement in Creative Arts. (Formerly MUS 2252. Credit may not be earned for both MUS 2243 and MUS 2252.) Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10; MC01 \$25.

MUS 2263. Introduction to the Music Industry. (3-0) 3 Credit Hours.

A survey of the various structures and facets of the American and international 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. Generally offered: Fall.

MUS 2273. Introduction to Music and Art Nonprofit Organizations. (3-0) 3 Credit Hours.

An introduction to the world of nonprofit music and arts organizations. Focused on strategies of management, financial structuring, artistic direction, and marketing, primarily within the context of opera companies, symphony orchestras, ballet companies, theaters and other performing arts venues, museums, and chamber music organizations. Includes an examination of the challenges of audience development and discussion of the role of art in contemporary society. Generally offered: Spring.

MUS 2403. Conducting I. (3-1) 3 Credit Hours.

Prerequisites: MUS 1122 and MUS 1132. Fundamentals of beat patterns, score mechanics and score reading, regular and irregular meters, gesture design, left-hand cueing, and rehearsal techniques. Different sections for Choral Conducting and Instrumental Conducting. Laboratory attendance is required. Generally offered: Fall, Spring.

MUS 2421. Class Piano 3. (1-1) 1 Credit Hour.

Prerequisite: MUS 1621. 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. Generally offered: Fall. Course Fee: IUM1 \$30.

MUS 2501. Accompanying. (0-2) 1 Credit Hour.

Enrollment is limited to music majors. 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. Generally offered: Fall, Spring.

MUS 2521. Class Piano 4. (1-1) 1 Credit Hour.

Prerequisite: MUS 2421. 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. Generally offered: Spring. Course Fee: IUM1 \$30.

MUS 2542. Music Performance-Private Instruction II. (0-0) 2 Credit Hours.

Prerequisite: Successful completion of MUS 1542 with a grade of "C-" or better. Private instruction for students whose principal instrument is: bassoon, clarinet, contrabass, cornet, electric bass, euphonium, flute, classical guitar, electric bass, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Attendance at area performance seminar and concurrent enrollment in an assigned University ensemble are required. May be repeated for credit a maximum of three semesters. Generally offered: Fall, Spring. Course Fee: M001 \$100.

MUS 2601. Diction Survey. (1-1) 1 Credit Hour.

Enrollment is limited to music majors. 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.) Generally offered: Fall.

MUS 2603. Beginning Guitar. (3-0) 3 Credit Hours.

An introductory course intended primarily for the non-music major. Emphasis on music in the first position (through the fourth fret) while students learn technical aspects as defined by the early 19th-century guitar masters. Generally offered: Fall, Spring.

MUS 2613. Intermediate Guitar. (3-0) 3 Credit Hours.

Prerequisite: MUS 2603. Designed primarily for the non-music major. Continued study of rudimentary classical guitar repertoire and basic elements of classical guitar technique. Generally offered: Spring.

MUS 2623. Fundamentals of Music for the Non-Music Major. (3-0) 3 Credit Hours. (TCCN = MUSI 1303)

A study of traditional music notation and the fundamentals of music theory. Topics include music reading, rhythmic notation, key signatures, scales, intervals, and triads. Emphasis is placed on the historical development of music notation and music theoretical systems and their applications to both classical and popular music. Generally offered: Fall, Spring, Summer.

MUS 2633. American Roots Music. (3-0) 3 Credit Hours. (TCCN = MUSI 1310)

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. May be applied toward the Core Curriculum requirement in Creative Arts. Generally offered: Fall. Course Fees: LRC1 \$12; LRLF \$10; MC01 \$25.

MUS 2653. Music in Culture. (3-0) 3 Credit Hours.

This course examines the music and the culture of a specific region, on a rotating basis. The alternating regions are: Asia, Africa, Native America/ First Nations, and Latin America and the Caribbean. The course will focus not only on the soundscapes of the cultures in these regions, but also on their aesthetic foundations, relation to social and cultural contexts, historical development, and cross-cultural interactions and influences. The course will examine musical and other artistic works from various cultures, as well as the historical, social and cultural criteria that led to their creation. May be applied toward the Core Curriculum requirement in Creative Arts. Course Fees: LRC1 \$12; LRLF \$10; MC01 \$25.

MUS 2663. History and Styles of Jazz. (3-0) 3 Credit Hours. (TCCN = MUSI 1310)

A survey of the evolution of jazz styles, contributions of important performers, and musical techniques involved in the creation and performance of jazz music. May be applied toward the Core Curriculum requirement in Creative Arts. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10; MC01 \$25.

MUS 2673. History and Styles of Rock. (3-0) 3 Credit Hours. (TCCN = MUSI 1310)

A survey of the evolution of rock styles, contributions of important performers, and musical techniques involved in the creation and performance of rock music. May be applied toward the Core Curriculum requirement in Creative Arts. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10; MC01 \$25.

MUS 2683. History and Styles of Western Art Music. (3-0) 3 Credit Hours. (TCCN = MUSI 1306)

A study of individual works that are representative of the classical musical traditions of the Western world. Includes background information on social setting and function, historical importance, aesthetics, and composer biographies. May be applied toward the Core Curriculum requirement in Creative Arts. (Formerly titled Masterpieces of Music.) Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRLF \$10; MC01 \$25.

MUS 2693. The Music of Latin America and the Caribbean. (3-0) 3 Credit Hours.

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. May be applied toward the Core Curriculum requirement in Creative Arts. Generally offered: Spring. Course Fees: LRC1 \$12; LRLF \$10; MC01 \$25.

MUS 2713. History of Recorded Music. (3-0) 3 Credit Hours.

A survey of recording innovations from notation to musical boxes and sound recordings. The course will include contributions by the popular performers and significant inventors. It will also treat the topics of technology convergence and displacement, the rise of music piracy, hit records throughout history, and the role of broadcasting. Designed for students interested in the history of preservation of music in any form and its impact on culture and society. No prerequisite and no previous musical background is required. May be applied toward the Core Curriculum requirement in Creative Arts. Course Fees: LRC1 \$12; LRLF \$10; MC01 \$25.

MUS 2743. Music and Film. (3-0) 3 Credit Hours.

A survey of the evolving role of music in film. Study of how various creative, technological, industrial, economic, historical, social, and cultural factors affect the creation, manufacturing, and consumption of film music. May be applied toward the Core Curriculum requirement in Creative Arts. Course Fees: LRC1 \$12; MC01 \$25.

MUS 3013. Digital Music Production. (3-0) 3 Credit Hours.

The conceptual core of the music technology curriculum. A broad survey of fundamental concepts and skills related to computer-based music production and music technology in general. Topics and/or platforms include the digital audio workstation, MIDI and audio sequencing, synthesis and sampling, analog vs. digital audio, acoustics and the overtone series, basic production (editing and mixing), ProTools, and the history of computer and the recording studio. (Formerly MUS 3313. Credit cannot be earned for both MUS 3013 and MUS 3313.) Generally offered: Fall, Spring. Course Fee: IUM1 \$30.

MUS 3103. Audio Technology I. (3-0) 3 Credit Hours.

The practical core of the music technology curriculum. A summary of current production techniques with an emphasis on creative applications. Topics include live recording, microphone selection and placement, terminology and equipment, signal flow, digital audio systems, mixing and signal processing, mastering, and the employment of MIDI instruments. Students will also have opportunity to develop mastery with ProTools, on which several creative assignments will be completed. (Formerly MUS 3153. Credit cannot be earned for both MUS 3103 and MUS 3153 under the title Audio Technology I.) Generally offered: Fall, Spring. Course Fee: IUM1 \$30.

MUS 3123. Introduction to Electronic and Computer Music. (3-0) 3 Credit Hours.

Prerequisite: Consent of instructor required for non-music majors. Lecture course 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. Generally offered: Spring. Course Fee: IUM1 \$30.

MUS 3133. Analysis of Twentieth-Century Music. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. 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. Generally offered: Spring of even-numbered years.

MUS 3143. Orchestration. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. Applied instrumentation emphasizing idiomatic scoring for various orchestral and wind combinations with an approach to writing for full orchestra and symphonic band. Generally offered: Spring of odd-numbered years.

MUS 3153. Conducting II. (3-1) 3 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, MUS 2403, and MUS 2521. Continued training in conducting, with emphasis on score reading, rehearsal techniques, expressive conducting, score interpretation, and repertoire. Different sections for Choral Conducting and Instrumental Conducting. Laboratory attendance is required. (Formerly MUS 2413. Credit cannot be earned for both MUS 3153 and MUS 2413.) Generally offered: Spring.

MUS 3162. Composition III. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2141, MUS 2162, and MUS 2521. Private study in applied composition, with emphasis on expansion of musical materials to larger forms. Attendance at composition seminar is required. May be repeated for credit a maximum of two semesters. Generally offered: Fall, Spring. Course Fee: M001 \$100.

MUS 3163. Audio Technology II. (3-0) 3 Credit Hours.

Prerequisite: MUS 3103. 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; and in-depth investigations of automation and mixing. The course emphasizes hands-on and project-oriented application of learned concepts in a studio and live recording environments. Generally offered: Spring. Course Fee: IUM1 \$30.

MUS 3213. Music in Civilization I. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. 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. Generally offered: Fall, Spring.

MUS 3223. Music in Civilization II. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. 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. Generally offered: Fall, Spring.

MUS 3232. Wind and Percussion Literature. (2-1) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. A study of music literature 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. Generally offered: Spring.

MUS 3242. String Literature. (2-1) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. A study of music literature for the string and full orchestra at all grade levels. 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. Generally offered: Spring.

MUS 3263. Music Since 1900. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. 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. Generally offered: Fall of even-numbered years.

MUS 3272. Choral Literature. (2-1) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. 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. Generally offered: Fall.

MUS 3282. Vocal Literature. (2-1) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. 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. Generally offered: Fall of odd-numbered years.

MUS 3292. Operatic Literature. (2-1) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. A study of the historical significance and literature of the opera form from its precursors through the present time. Generally offered: Fall of odd-numbered years.

MUS 3312. Music Technology for Music Educators. (2-1) 2 Credit Hours.

Enrollment is limited to music majors. 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.) Generally offered: Spring. Course Fee: IUM1 \$30.

MUS 3322. Keyboard Literature. (2-1) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. 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. Generally offered: Spring.

MUS 3332. Advanced Guitar Literature. (2-1) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. 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. Generally offered: Fall of even-numbered years.

MUS 3342. Wind and Percussion Literature for Performance Majors. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. A study of wind or percussion literature and analysis at an advanced level. Topics include Solo/Chamber Literature and Orchestral/Wind Band Literature. May be repeated for credit when topics vary. Generally offered: Fall, Spring.

MUS 3352. String Literature for Performance Majors. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. 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/Chamber Literature and Orchestral Literature. May be repeated for credit when topics vary. Generally offered: Fall, Spring.

MUS 3401. Brass Instruments. (1-2) 1 Credit Hour.

Prerequisites: MUS 1122 and MUS 1132. Enrollment is limited to music majors. A study of playing techniques, pedagogy, selection of materials, and maintenance of brass instruments. Laboratory attendance is required. Generally offered: Fall, Spring. Course Fee: IUM1 \$30.

MUS 3413. Psychology of Music. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. A survey of the field of music psychology, focusing on various interdisciplinary approaches to the study of music. Emphasis is placed on how empirical research methods can be used to study the relationship between music and other disciplines (including philosophy, physics, biology, anthropology, sociology, cognitive psychology, neuroscience, and education). Generally offered: Fall and Spring of odd-numbered years, Summer of even-numbered years.

MUS 3421. Vocal Techniques for Instrumental Majors. (1-1) 1 Credit Hour.

Prerequisites: MUS 1122 and MUS 1132. Enrollment is limited to music majors. 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 Studies majors with the opportunity to develop experience and familiarity with teaching vocal music. Generally offered: Fall, Spring. Course Fee: IUM1 \$30.

MUS 3431. Woodwind Instruments. (1-2) 1 Credit Hour.

Prerequisites: MUS 1122 and MUS 1132. Enrollment is limited to music majors. A study of the playing techniques, pedagogy, selection of materials, and maintenance of woodwind instruments. Laboratory attendance is required. Generally offered: Fall, Spring. Course Fee: IUM1 \$30.

MUS 3453. Teaching Elementary Music. (3-0) 3 Credit Hours.

Prerequisites: MUS 1122 and MUS 1132. Enrollment is limited to music majors. A study of the essential elements of teaching music at the elementary level. Generally offered: Fall, Spring.

MUS 3463. Teaching Secondary Vocal Music. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. A study of the essential elements of teaching general and vocal music at the secondary level. Generally offered: Spring.

MUS 3471. String Instruments. (1-2) 1 Credit Hour.

Prerequisites: MUS 1122 and MUS 1132. Enrollment is limited to music majors. A study of playing techniques, pedagogy, selection of materials, and maintenance of string instruments. Generally offered: Fall, Spring. Course Fee: IUM1 \$30.

MUS 3481. Percussion Instruments. (1-2) 1 Credit Hour.

Prerequisites: MUS 1122 and MUS 1132. Enrollment is limited to music majors. A study of playing techniques, pedagogy, selection of materials, and maintenance of percussion instruments. Generally offered: Fall. Course Fee: IUM1 \$30.

MUS 3491. Instrumental Techniques for Voice Majors. (1-1) 1 Credit Hour.

Prerequisites: MUS 1122 and MUS 1132. Enrollment is limited to music majors. A study of playing techniques, pedagogy, selection of materials, and maintenance of percussion, woodwind, brass, and string instruments. Designed to provide choral Music Studies majors with the opportunity to develop experience and familiarity with teaching orchestral and band instruments. Generally offered: Spring. Course Fee: IUM1 \$30.

MUS 3511. Diction for Singers. (1-1) 1 Credit Hour.

Enrollment is limited to music majors. Designed specifically for vocal performance majors. An intensive study of language pronunciation as applied to performance. Topics include English, French, Italian, and German. May be repeated for credit when topics vary. Generally offered: Fall, Spring.

MUS 3532. Music Performance-Private Instruction III. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, MUS 2521, and successful completion of two semesters of MUS 2542 with grades of "C-" or better. Private instruction for students whose principal instrument is: bassoon, clarinet, contrabass, cornet, electric bass, euphonium, flute, classical guitar, electric bass, euphonium, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Attendance at performance seminar and concurrent enrollment in an assigned University ensemble are required. May be repeated for credit a maximum of three semesters. Generally offered: Fall, Spring. Course Fee: M001 \$100.

MUS 3543. Music Performance-Private Instruction IV. (0-0) 3 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, MUS 2521, and successful completion of two semesters of MUS 2542 with grades of "C-" or better. 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 for students whose principal instrument is: 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. Attendance at performance seminar and concurrent enrollment in an assigned University ensemble are required. May be repeated for credit a maximum of three semesters. Generally offered: Fall, Spring. Course Fee: M001 \$100.

MUS 3583. Advanced Improvisation. (0-0) 3 Credit Hours.

Prerequisites: MUS 2132 and MUS 2183. 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 a maximum of two semesters. Generally offered: Fall, Spring. Course Fee: M001 \$100.

MUS 3613. Entrepreneurship in Music. (3-0) 3 Credit Hours.

Prerequisite: MUS 2263. 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. Generally offered: Spring of even-numbered years.

MUS 3711. Mariachi Ensemble. (0-3) 1 Credit Hour.

Open to all students by audition. Ensemble rehearses and performs the music repertoire of the Mexican folk mariachi tradition. May be repeated for credit. Generally offered: Fall, Spring. Course Fee: MC01 \$25.

MUS 3721. UTSA Men's Glee Club. (0-5) 1 Credit Hour.

Open to all male students. No audition required. No previous choral experience is necessary. Many types of music are studied, and the repertoire is moderate in difficulty. May be repeated for credit. Generally offered: Fall, Spring. Course Fee: MC01 \$25.

MUS 3731. UTSA University Band. (0-5) 1 Credit Hour.

Open to all students. No audition required. Ensemble rehearses and performs standard repertoire of concert band music. May be repeated for credit. Generally offered: Fall, Spring. Course Fee: MC01 \$25.

MUS 3751. UTSA Symphonic Band. (0-5) 1 Credit Hour.

Open to all students by audition. Ensemble performs standard repertoire for the full symphonic band. May be repeated for credit. (Formerly MUS 3752.) Generally offered: Fall, Spring. Course Fee: MC01 \$25.

MUS 3761. UTSA Orchestra. (0-5) 1 Credit Hour.

Open to all students by audition. Ensemble rehearses and performs literature from the standard orchestral repertoire. May be repeated for credit. (Formerly MUS 3762.) Generally offered: Fall, Spring. Course Fee: MC01 \$25.

MUS 3771. Jazz Ensemble. (0-3) 1 Credit Hour.

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. Generally offered: Fall, Spring. Course Fee: MC01 \$25.

MUS 3781. Concert Choir. (0-5) 1 Credit Hour.

Open to all students by audition. Ensemble rehearses and performs repertoire for mixed choir from all historical periods. May be repeated for credit. (Formerly MUS 3712.) Generally offered: Fall, Spring. Course Fee: MC01 \$25.

MUS 3791. Lyric Theatre. (0-5) 1 Credit Hour.

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 MUS 3792.) Generally offered: Fall, Spring. Course Fee: MC01 \$25.

MUS 3801. UTSA Athletic Band. (0-5) 1 Credit Hour.

Open to all students. No audition required. 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 3802.) (Formerly titled UTSA Marching Band.) Generally offered: Fall, Spring. Course Fee: MC01 \$25.

MUS 3811. Women's Choir. (0-5) 1 Credit Hour.

Open to all female students by audition. Ensemble rehearses and performs repertoire for women's choir from all historical periods. May be repeated for credit. (Formerly MUS 3722.) Generally offered: Fall, Spring. Course Fee: MC01 \$25.

MUS 3821. UTSA Wind Ensemble. (0-5) 1 Credit Hour.

Open to all students by audition. Ensemble rehearses and performs repertoire for various combinations of wind instruments. May be repeated for credit. (Formerly MUS 3742.) Generally offered: Fall, Spring. Course Fee: MC01 \$25.

MUS 4113. Counterpoint. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. 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. Generally offered: Fall of odd-numbered years.

MUS 4142. Composition IV. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, MUS 2521, and MUS 3162. Composing in the larger forms for small and large ensembles and electronic media. Attendance at composition seminar is required. May be repeated for credit a maximum of two semesters. Generally offered: Fall, Spring. Course Fee: M001 \$100.

MUS 4153. Audio Technology III. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fee: IUM1 \$30.

MUS 4163. Topics in Music Theory. (3-0) 3 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. Specialized instruction in advanced music theory. Possible topics include rhythm and meter, 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. Generally offered: Fall of even-numbered years.

MUS 4183. Jazz Composition and Arranging. (0-0) 3 Credit Hours.

Prerequisite: MUS 2183. Private study in applied jazz composition and arranging, emphasizing writing for large jazz ensemble and studio orchestra. May be repeated for credit a maximum of two semesters. Generally offered: Fall, Spring.

MUS 4263. Topics in Music History. (3-0) 3 Credit Hours.

Prerequisites: MUS 3213 and MUS 3223. A study of works and styles appropriate to the stylistic period of the topic. Possible 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.

MUS 4433. Multimedia Production. (3-0) 3 Credit Hours.

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, and webpage development. Aspects of artistic design are also introduced. Emphasis is placed on hands-on development of useful, effective products for instructional and commercial applications. Students have the opportunity to gain a basic fluency with six programs within the Adobe Creative Cloud: Photoshop, Audition, Premiere, After Effects, Muse, and Dreamweaver. Generally offered: Fall. Course Fee: IUM1 \$30.

MUS 4452. Marching Band Techniques. (2-1) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. A study of the repertoire, materials, instructional methods, administration, and maneuvers used by marching bands. Generally offered: Fall.

MUS 4522. Music Pedagogy for Performance Majors. (0-0) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. 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, and Organ. (Credit cannot be earned for both MUS 4522 and MUS 4532.) Generally offered: Fall, Spring.

MUS 4531. Vocal Pedagogy I. (1-1) 1 Credit Hour.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. 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. Generally offered: Fall.

MUS 4532. Music Pedagogy. (2-1) 2 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. 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, Winds and Percussion, Guitar, Piano, and Organ. (Credit cannot be earned for both MUS 4522 and MUS 4532.) Generally offered: Fall.

MUS 4541. Vocal Pedagogy II. (1-1) 1 Credit Hour.

Prerequisites: MUS 2112, MUS 2162, and MUS 2521. 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. Generally offered: Spring.

MUS 4543. Music Performance-Private Instruction V. (0-0) 3 Credit Hours.

Prerequisites: MUS 2112, MUS 2162, MUS 2521, and successful completion of two semesters of MUS 3543 with grades of "C-" or better. Private instruction at an advanced level for students whose principal instrument is: 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. Attendance at area performance seminar and concurrent enrollment in an assigned University ensemble are required. May be repeated for credit for a maximum of three semesters. Generally offered: Fall, Spring. Course Fee: M001 \$100.

MUS 4561. Senior Recital. (0-0) 1 Credit Hour.

Prerequisites: MUS 2112, MUS 2162, MUS 2521, and consent of instructor. A public performance presented as a culmination of the student's private instruction. Concurrent enrollment in MUS 4543 is required of students in the Performance emphasis; concurrent enrollment in MUS 4142 is required of students in the Composition emphasis. Generally offered: Fall, Spring.

MUS 4581. Chamber Music. (0-3) 1 Credit Hour.

Open to all students by audition. Designed to offer students the opportunity to gain knowledge of chamber music literature through performance of select repertoire. Possible ensembles are: Flute Ensemble, Percussion Ensemble, Chamber Orchestra, Chamber Singers, String Ensemble, Jazz Combo, New Music Lab, Trombone Ensemble, Tuba Ensemble, Saxophone Ensemble, Horn Ensemble, and Keyboard Ensemble. May be repeated for credit. Generally offered: Fall, Spring. Course Fee: MC01 \$25.

MUS 4803. Seminar in Music Marketing. (3-0) 3 Credit Hours.

Prerequisite: MUS 2263. An intensive, project-based study of music marketing oriented toward students' specific career interests in the music business and/or arts management. Generally offered: Spring of even-numbered years.

MUS 4911. Independent Study. (0-0) 1 Credit Hour.

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.

MUS 4912. Independent Study. (0-0) 2 Credit Hours.

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.

MUS 4913. Independent Study. (0-0) 3 Credit Hours.

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.

MUS 4933. Music Marketing Internship. (0-0) 3 Credit Hours.

Prerequisites: MUS 3613 and MUS 4803. 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. Generally offered: Summer.

MUS 4951. Special Studies in Music. (1-0) 1 Credit Hour.

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.

MUS 4952. Special Studies in Music. (2-0) 2 Credit Hours.

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.

MUS 4953. Special Studies in Music. (3-0) 3 Credit Hours.

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. Generally offered: Fall.

MUS 4961. Music Technology Project. (0-0) 1 Credit Hour.

Prerequisite: Consent of instructor. 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. Generally offered: Fall, Spring. Course Fee: IUM1 \$30.

Non-course Based Instruction (NCB)

Non-course Based Instruction (NCB) Courses

NCB 0200. Basic Math for TSI. (2-0) 1.25 Credit Hour.

The objective of this course is to provide students with the basic knowledge and skills they need in preparation for college level math courses.

NCB 0210. Intermediate Math for TSI. (2-0) 1.25 Credit Hour.

The objective of this course is to provide students with the knowledge and skills they need in preparation for college level math courses.

NCB 0300. Writing Review for TSI. (2-0) 1.25 Credit Hour.

This course will review basic skills for college-level and professional-level writing and reading. The writing process as well as critical reading and study skills that can be applied to this course and throughout your college career are discussed and practiced in class. Appropriate tone, Standard English grammar, paragraph construction, essay development, citation formatting, and other topics will be taught and practiced throughout the semester. These subjects will be taught with the application toward use with main ideas, supporting details, and inferences, as well as learning to read critically and analyze texts.

NCB 0500. Specialized Study for Math. (2-0) 1.25 Credit Hour.

This is a Non-Course-Based intervention and can be paired with any section of MAT 1073. This class is intended for those students who have been designated as not college ready (NCR) by the Texas Success Initiative (TSI) but who scored between 340 and 349 on the TSI Assessment.

NCB 0540. Specialized Study for MAT 1043 Corequisite. (2-0) 1.25 Credit Hour.

Non-course based corequisite for MAT 1043.

NCB 0550. Specialized Study for MAT 1053 Corequisite. (2-0) 1.25 Credit Hour.

Non-course based corequisite for MAT 1053.

NCB 0570. Specialized Study for MAT 1073 Corequisite. (2-0) 1.25 Credit Hour.

Non-course based corequisite for MAT 1073.

NCB 0600. Specialized Study for Writing and Reading. (2-0) 1.25 Credit Hour.

This course will review basic skills for college-level and professional-level writing and reading. The writing process as well as critical reading and study skills that can be applied to this course and throughout your college career are discussed and practiced in class. Appropriate tone, Standard English grammar, paragraph construction, essay development, citation formatting, and other topics will be taught and practiced throughout the semester. These subjects will be taught with the application toward use with main ideas, supporting details, and inferences, as well as learning to read critically and analyze texts.

NCB 0700. NCB Integrated Reading and Writing for TSI. (2-0) 1.25 Credit Hour.

This course will review basic skills for college-level and professional-level writing and reading. The writing process as well as critical reading and study skills that can be applied to this course and throughout your college career are discussed and practiced in class. Appropriate tone, Standard English grammar, paragraph construction, essay development, citation formatting, and other topics will be taught and practiced throughout the semester. These subjects will be taught with the application toward use with main ideas, supporting details, and inferences, as well as learning to read critically and analyze texts.

Nutrition and Dietetics (NDT)

Nutrition and Dietetics (NDT) Courses

NDT 2043. Introduction to Nutritional Sciences. (3-0) 3 Credit Hours.

Prerequisite: BIO 1233 or BIO 1404. Basic concepts related to the classification and functions of nutrients; the process of digestion, absorption, transport, utilization, and storage of nutrients in humans and the interaction between diet and health. (Credit cannot be earned for both NDT 2043 and BIO 2043.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

NDT 3191. Applied Food Science Practicum. (0-3) 1 Credit Hour.

Prerequisites: BIO 1053, CHE 1103, CHE 1113, and NDT 2043 or equivalent. Corequisite: Concurrent enrollment in NDT 3313 or permission of faculty advisor. The application of concepts related to the chemical, physical, sensory, and nutritional properties of food in menu planning, food preparation, and recipe modification. Generally offered: Fall. Course Fees: DNMF \$112; LRH1 \$10; STSH \$5.

NDT 3203. Introduction to Nutrition and Dietetics Careers. (3-0) 3 Credit Hours.

Prerequisite: Nutrition and Dietetics majors only. General overview of nutrition and dietetics as a profession, including career opportunities, scope of practice, credentialing, code of ethics, and collaboration with other disciplines. Self-directed modules on medical terminology, word roots, prefixes and suffixes will be integrated into the course content. Generally offered: Fall. Course Fees: LRH1 \$10; STSH \$15.

NDT 3292. Food Production Practicum. (0-6) 2 Credit Hours.

Prerequisite: Nutrition and Dietetics majors only. Corequisite: Concurrent enrollment in NDT 3353 or permission of faculty advisor. Practicum related to the procurement, preparation, and delivery of food in large foodservice operations. Generally offered: Spring. Course Fees: DNPF \$40; LRH1 \$10; STSH \$10.

NDT 3313. Applied Food Science. (3-0) 3 Credit Hours.

Prerequisites: BIO 1053, CHE 1103, CHE 1113, and NDT 2043 or equivalent. Concurrent enrollment in NDT 3191 is recommended. Concepts related to the chemical, physical, sensory, and nutritional properties of food in menu planning, food preparation, and recipe modification. Generally offered: Fall. Course Fees: LRH1 \$10; STSH \$15.

NDT 3323. Nutrition and Health Assessment. (3-0) 3 Credit Hours.

Prerequisites: Nutrition and Dietetics majors and minors only, and NDT 2043 or equivalent. Methods, tools, and interpretation of data in assessing the nutritional status of individuals including dietary, anthropometric, biochemical, and clinical assessment, as well as other measurements of health in individuals and the community. Generally offered: Spring. Course Fees: LRH1 \$10; STSH \$15.

NDT 3333. Nutrition Counseling and Education. (3-0) 3 Credit Hours.

Prerequisites: Nutrition and Dietetics majors only, and NDT 2043 or equivalent. Discussion of theories of learning and behavior modification, models and techniques, communication skills, evaluation methods, and cultural competence in nutrition counseling and education; and application of concepts to facilitate behavioral change. Generally offered: Spring. Course Fees: LRH1 \$10; STSH \$15.

NDT 3343. Nutrition in the Life Span. (3-0) 3 Credit Hours.

Prerequisites: Nutrition and Dietetics majors and minors only, and NDT 2043 or equivalent and Human Physiology. Nutritional needs during various stages of the lifecycle as influenced by physiologic, cultural, and environmental factors. Course Fees: LRH1 \$10; STSH \$15.

NDT 3353. Production and Foodservice System Management I. (3-0) 3 Credit Hours.

Prerequisites: Nutrition and Dietetics majors only, and NDT 3313 or equivalent; concurrent enrollment in NDT 3292 is recommended. Principles related to the menu planning, food sanitation and safety, procurement, production, marketing, and materials management in foodservice operations. Generally offered: Spring. Course Fees: LRH1 \$10; STSH \$15.

NDT 3413. Advanced Human Nutrition. (3-0) 3 Credit Hours.

Prerequisites: Nutrition and Dietetics majors and minors only, and NDT 2043 or equivalent and Biochemistry. Advanced discussion of nutrient structure, function and interaction, metabolic pathways, and regulation and integration of metabolism. Course Fees: LRH1 \$10; STSH \$15.

NDT 4091. Community Service Practicum. (0-3) 1 Credit Hour.

Prerequisite: Nutrition and Dietetics majors only. Corequisite: NDT 4333 is recommended or with permission of faculty advisor. Application of learned strategies in meaningful community service through collaborative tasks performed at various community programs. Service learning activities are aimed at enriching the life experiences of students through civic responsibility and community outreach. Course Fees: DPNF \$20; LRH1 \$10; STSH \$5.

NDT 4191. Nutrition Care Process Practicum. (0-3) 1 Credit Hour.

Prerequisite: Nutrition and Dietetics majors only. Corequisite: Concurrent enrollment in NDT 4353 is required. A problem-based approach to dietetics practice using case simulations and studies; application of basic nutritional assessment skills, nutritional diagnosis, intervention, and monitoring in different settings; practice skills in counseling and nutrition education. Course Fees: DPNF \$20; LRH1 \$10; STSH \$5.

NDT 4313. Production and Food Service System Management II. (3-0) 3 Credit Hours.

Prerequisites: Nutrition and Dietetics majors only, and NDT 3353 and NDT 3292 or equivalent. Theories and principles related to the foodservice, systems management including leadership, decision-making, human resources, and financial management of operations. Course Fees: LRH1 \$10; STSH \$15.

NDT 4323. Medical Nutrition Therapy I. (3-0) 3 Credit Hours.

Prerequisites: Nutrition and Dietetics majors only, and NDT 3323 and NDT 3333 or equivalent. Pathophysiology and the application of the nutritional care process in the treatment of simple human diseases and conditions, part 1. Course Fees: LRH1 \$10; STSH \$15.

NDT 4333. Community Nutrition. (3-0) 3 Credit Hours.

Prerequisite: NDT 2043 or equivalent. Nutrition-related issues in public health, various community resources, agencies, and programs involved in health promotion and disease prevention. Course Fees: LRH1 \$10; STSH \$15.

NDT 4343. Nutrition in Disease Prevention and Health Promotion. (3-0) 3 Credit Hours.

Prerequisites: NDT 2043 and NDT 4333. An evidence-based analysis as it relates to diet/nutrition in the prevention of chronic diseases; and fundamental concepts in the promotion of health among individuals and groups. Course Fees: LRH1 \$10; STSH \$15.

NDT 4353. Medical Nutrition Therapy II. (3-0) 3 Credit Hours.

Prerequisites: Nutrition and Dietetics majors only, and NDT 4323. Continuation of Advanced Medical Nutrition I; and review of the pathophysiology and the application of the nutritional care process in the treatment of more complex human disease and conditions. Course Fees: LRH1 \$10; STSH \$15.

NDT 4363. Current Issues in Nutrition. (3-0) 3 Credit Hours.

Prerequisites: NDT 2043 or equivalent; must have senior or graduate standing. In-depth discussion and analysis of emerging trends, concepts, and controversies in nutritional sciences, including application of evidence-based principles in the discussion. Course Fees: LRH1 \$10; STSH \$15.

NDT 4951. Independent Study in Nutrition and Dietetics. (0-0) 1 Credit Hour.

Prerequisite: NDT 2043 or equivalent. An exploration of topics of interest to the student in Nutrition and Dietetics. Students work under the close supervision of a faculty member to conduct research, intense study, or a project related to the selected topic. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Course Fee: STSH \$5.

NDT 4952. Independent Study in Nutrition and Dietetics. (0-0) 2 Credit Hours.

Prerequisite: NDT 2043 or equivalent. An exploration of topics of interest to the student in Nutrition and Dietetics. Students work under the close supervision of a faculty member to conduct research, intense study, or a project related to the selected topic. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Course Fee: STSH \$10.

NDT 4953. Independent Study in Nutrition and Dietetics. (0-0) 3 Credit Hours.

Prerequisite: NDT 2043 or equivalent. An exploration of topics of interest to the student in Nutrition and Dietetics. Students work under the close supervision of a faculty member to conduct research, intense study, or a project related to the selected topic. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Course Fee: STSH \$15.

Philosophy (PHI)

Philosophy (PHI) Courses

PHI 1043. Critical Thinking. (3-0) 3 Credit Hours. (TCCN = PHIL 2303)

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Course Fee: LRC1 \$12.

PHI 2013. Basic Philosophical Problems. (3-0) 3 Credit Hours. (TCCN = PHIL 1301)

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Spring. Course Fee: LRC1 \$12.

PHI 2023. Introduction to Ancient Philosophy. (3-0) 3 Credit Hours. (TCCN = PHIL 2316)

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Course Fees: LRC1 \$12; LRLF \$10.

PHI 2033. Introduction to Early Modern Philosophy. (3-0) 3 Credit Hours.

Introduction to early modern philosophy from the Renaissance to the Enlightenment through the study of Descartes, Locke, Berkeley, Hume, Spinoza, Leibniz, Kant or others. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Spring. Course Fees: LRC1 \$12; LRLF \$10.

PHI 2043. Introductory Logic. (3-0) 3 Credit Hours. (TCCN = PHIL 2303)

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.). May be applied toward the Core Curriculum requirement in the Component Area Option. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRLF \$10.

PHI 2073. Philosophy of Art. (3-0) 3 Credit Hours.

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. May be applied toward the Core Curriculum requirement in Creative Arts. (Formerly PHI 3053. Credit cannot be earned for both PHI 2073 and PHI 3053.) Course Fees: LRC1 \$12; LRLF \$10.

PHI 2123. Contemporary Moral Issues. (3-0) 3 Credit Hours.

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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly titled "Moral Issues in Contemporary America.") Course Fees: LRC1 \$12; LRLF \$10.

PHI 3013. Philosophy of Religion. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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. Generally offered: Fall.

PHI 3033. Philosophy of Science. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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. Generally offered: Fall.

PHI 3063. Philosophy of Law. (3-0) 3 Credit Hours.

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. (Formerly PHI 2063. Credit cannot be earned for both PHI 3063 and PHI 2063).

PHI 3073. Asian Philosophy. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Examination of the philosophical and religious traditions of the East, with emphasis on various schools such as Vedanta, Buddhism, Confucianism, and Taoism.

PHI 3203. Biomedical Ethics. (3-0) 3 Credit Hours.

This course explores the theoretical commitments that underwrite contemporary biomedical ethics and considers how these theoretical commitments play out in the context of specific debates about the permissibility of various medical interventions.

PHI 3213. Ethics. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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. Generally offered: Fall.

PHI 3223. Approaches to Knowledge and Reality. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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. Generally offered: Spring.

PHI 3303. Nineteenth-Century Philosophy. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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.

PHI 3343. Issues and Movements in Contemporary Philosophy. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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").

PHI 3403. Philosophy in Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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.

PHI 4013. Studies in Individual Philosophers. (3-0) 3 Credit Hours.

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.

PHI 4113. Contemporary Analytic Philosophy. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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.

PHI 4123. Contemporary Continental Philosophy. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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.

PHI 4333. Philosophy of Language. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. 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.

PHI 4911. Independent Study. (0-0) 1 Credit Hour.

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.

PHI 4912. Independent Study. (0-0) 2 Credit Hours.

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.

PHI 4913. Independent Study. (0-0) 3 Credit Hours.

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.

PHI 4953. Special Studies in Philosophy. (3-0) 3 Credit Hours.

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. Generally offered: Fall.

PHI 4973. Seminar for Philosophy Majors. (3-0) 3 Credit Hours.

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.

PHI 4991. Honors Thesis. (0-0) 1 Credit Hour.

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.

PHI 4992. Honors Thesis. (0-0) 2 Credit Hours.

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.

PHI 4993. Honors Thesis. (0-0) 3 Credit Hours.

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)

NOTE: All prerequisites for Physics (PHY) courses must be completed with a grade of "C-" or better.

Physics (PHY) Courses

PHY 1013. Universes. (3-0) 3 Credit Hours. (TCCN = PHYS 1310)

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 Core Curriculum requirement in Life and Physical Sciences. Course Fees: LRC1 \$12; LRS1 \$15; MEPA \$18; STSI \$15.

PHY 1603. Algebra-based Physics I. (3-0) 3 Credit Hours. (TCCN = PHYS 1301)

Prerequisite: MAT 1023 or MAT 1073 completed with a grade of "C-" or better. Concurrent enrollment in PHY 1611 is recommended. 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. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; MEPA \$18; STSI \$15.

PHY 1611. Algebra-based Physics I Laboratory. (1-4) 1 Credit Hour. (TCCN = PHYS 1101)

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. Generally offered: Fall, Spring, Summer. Course Fees: IUP1 \$20; LRS1 \$5; STSI \$5.

PHY 1623. Algebra-based Physics II. (3-0) 3 Credit Hours. (TCCN = PHYS 1302)

Prerequisite: PHY 1603 completed with a grade of "C-" or better. Concurrent enrollment in PHY 1631 is recommended. 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. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$15; MEPA \$18; STSI \$15.

PHY 1631. Algebra-based Physics II Laboratory. (1-4) 1 Credit Hour. (TCCN = PHYS 1102)

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. Generally offered: Fall, Spring, Summer. Course Fees: IUP1 \$20; LRS1 \$5; STSI \$5.

PHY 1943. Physics for Scientists and Engineers I. (3-1) 3 Credit Hours. (TCCN = PHYS 2325)

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. Concurrent enrollment in PHY 1951 is recommended. The first of a two-part, calculus-based introduction to classical physics, designed for physical sciences, mathematics, and engineering majors. Topics include mechanics and Newton's laws, conservation laws, gravitation, rotational motion and rigid bodies, oscillations and waves. Classes meet weekly for three hours of lecture and one hour of recitation. May apply toward the Core Curriculum requirement in Life and Physical Sciences. (Formerly PHY 1903 and PHY 1904. Credit cannot be earned for more than one of the following: PHY 1903, PHY 1904, or PHY 1943.) Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRS1 \$15; MEPA \$18; STSI \$15.

PHY 1951. Physics for Scientists and Engineers I Laboratory. (1-4) 1 Credit Hour.

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.) Generally offered: Fall, Spring. Course Fees: IUP1 \$20; LRS1 \$5; STSI \$5.

PHY 1963. Physics for Scientists and Engineers II. (3-1) 3 Credit Hours. (TCCN = PHYS 2326)

Prerequisites: PHY 1943 and MAT 1224 (or MAT 1193 and STA 1403) completed with grades of "C-" or better. Concurrent enrollment in PHY 1971 is recommended. The second of a two-part, calculus-based introduction to classical physics, designed for physical sciences, mathematics, and engineering majors. Topics include an introduction to thermal physics, electricity and magnetism, fundamentals of circuits, electromagnetic induction, AC circuits, electromagnetic waves, and Maxwell's equations. Classes meet weekly for three hours of lecture and one hour of recitation. May apply toward the Core Curriculum requirement in Life and Physical Sciences. (Formerly PHY 1923 and PHY 1924. Credit cannot be earned for more than one of the following: PHY 1923, PHY 1924, or PHY 1963.) Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRS1 \$15; MEPA \$18; STSI \$15.

PHY 1971. Physics for Scientists and Engineers II Laboratory. (1-4) 1 Credit Hour.

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.) Generally offered: Fall, Spring. Course Fees: IUP1 \$20; LRS1 \$5; STSI \$5.

PHY 2103. Modern Physics. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

PHY 2111. Modern Physics Laboratory. (1-4) 1 Credit Hour.

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. Generally offered: Fall, Spring. Course Fees: IUP1 \$20; LRS1 \$5; STSI \$5.

PHY 2823. Mathematical Physics I. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring. Course Fees: LRS1 \$15; MEPA \$18; STSI \$15.

PHY 3003. Current Research Topics in Physics. (3-0) 3 Credit Hours.

Prerequisites: PHY 1623 and PHY 1631, or PHY 1963 and PHY 1971, completed with a grade of "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. Course Fees: LRS1 \$15; MEPA \$18; STSI \$15.

PHY 3143. Introduction to Computational Physics. (3-0) 3 Credit Hours.

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.") Course Fees: LRS1 \$15; STSI \$15.

PHY 3203. Classical Mechanics I. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

PHY 3293. Thermal Physics. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

PHY 3313. Materials Physics. (3-0) 3 Credit Hours.

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.") Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

PHY 3343. Physics Research Laboratory. (0-6) 3 Credit Hours.

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. (Formerly titled "Advanced Physics Laboratory.") Course Fees: IUP1 \$20; LRS1 \$15; STSI \$15.

PHY 3423. Electricity and Magnetism. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

PHY 3443. Modern Optics. (3-0) 3 Credit Hours.

Prerequisite: PHY 3423 or consent of instructor. Topics include reflection, refraction, absorption, polarization, and diffraction of light, filters, lasers, nonlinear properties, and Fourier optics. Generally offered: Fall. Course Fees: LRS1 \$15; STSI \$15.

PHY 3453. Lasers: Theory and Applications. (3-0) 3 Credit Hours.

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. Course Fees: LRS1 \$15; STSI \$15.

PHY 3513. Electrodynamics. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

PHY 3583. Mathematical Physics II. (3-0) 3 Credit Hours.

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.) Generally offered: Spring. Course Fees: LRS1 \$15; MEPA \$18; STSI \$15.

PHY 3603. Cosmology. (3-0) 3 Credit Hours.

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.) Course Fees: LRS1 \$15; MEPA \$18; STSI \$15.

PHY 4013. Relativity: Special and General. (3-0) 3 Credit Hours.

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. Course Fees: LRS1 \$15; STSI \$15.

PHY 4203. Classical Mechanics II. (3-0) 3 Credit Hours.

Prerequisite: PHY 3203 or consent of instructor. Topics may include nonlinear oscillations and chaos, systems of particles and collisions, non-inertial frames, rigid bodies, coupled oscillations, continuous systems and waves. Course Fees: LRS1 \$15; STSI \$15.

PHY 4263. Quantum Mechanics I. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRS1 \$15; STSI \$15.

PHY 4423. Quantum Mechanics II. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

PHY 4563. Biophotonics. (3-0) 3 Credit Hours.

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. Course Fee: STSI \$15.

PHY 4603. Crystallography and Materials Characterization. (3-0) 3 Credit Hours.

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.

PHY 4623. Nanotechnology. (3-0) 3 Credit Hours.

Prerequisite: PHY 2103 or consent of instructor. This course will describe the fundamentals of nanotechnology, including properties of matter at the nanometric size.

PHY 4653. Introduction to Micro and Nanotechnology. (3-0) 3 Credit Hours.

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.).

PHY 4703. Renewable Energy: Solar Energy Convertors. (3-0) 3 Credit Hours.

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.

PHY 4833. Molecular Biophysics. (3-0) 3 Credit Hours.

Prerequisites: CHE 1113 and one of the following: PHY 2103, CHE 3804, or CHE 3854. 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. Generally offered: Spring. Course Fee: STSI \$15.

PHY 4843. Condensed Matter Theory. (3-0) 3 Credit Hours.

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.

PHY 4911. Independent Study. (0-0) 1 Credit Hour.

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. Course Fees: LRS1 \$5; STSI \$5.

PHY 4912. Independent Study. (0-0) 2 Credit Hours.

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. Course Fee: STSI \$10.

PHY 4913. Independent Study. (0-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

PHY 4953. Special Studies in Physics. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fees: LRS1 \$15; STSI \$15.

PHY 4983. Unifying Concepts in Physics. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: LRS1 \$15; MEPA \$18; STSI \$15.

PHY 4993. Honors Research. (0-0) 3 Credit Hours.

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. Course Fees: LRS1 \$15; STSI \$15.

Political Science (POL)

Correction to POL 2603: Credit **cannot** be earned for both POL 2603 and GLA 2603.

Political Science (POL) Courses

POL 1013. Introduction to American Politics. (3-0) 3 Credit Hours. (TCCN = GOVT 2305)

This course provides an introduction to American politics. The course centers on the fundamental role played by the institutions of American government including Congress, the Presidency, Federal Judiciary, and the Bureaucracy in understanding political dynamics in the United States. The course also examines public opinion and participation as inputs to the institutions of American government, and the mediating role of organizations such as interest groups, the news media, and political parties. Considerable time is devoted to thinking about how these components fit together, and how they shape the nature and importance of citizenship and civic engagement. The course also makes connections between politics at the federal level of government and the political institutions and processes of the state of Texas. This course is required to fulfill the Core Curriculum requirement in Government-Political Science. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

POL 1133. Texas Politics and Society. (3-0) 3 Credit Hours. (TCCN = GOVT 2306)

This course involves the analysis of Texas government institutions, political behavior, civic engagement and their political and philosophical foundations. 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. Considerable time is devoted to thinking about how these components fit together, and how they shape the nature and importance of citizenship and civic engagement in Texas. May be applied toward the Core Curriculum requirement in Government-Political Science. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

POL 1213. Civil Rights in Texas and America. (3-0) 3 Credit Hours. (TCCN = GOVT 2306)

This course presents the central elements of traditional introductory political science courses on Texas politics using an alternative, contextual method that teaches students to understand broader political and legal subjects through the lens of civil rights issues and struggles. May be applied toward the Core Curriculum requirement in Government-Political Science. (Formerly titled "Studies in Texas and American Politics.") Course Fees: LRC1 \$12; LRLF \$10.

POL 2403. Mexican American Politics. (3-0) 3 Credit Hours. (TCCN = GOVT 2311)

The study of Mexican American and other Latino/a group participation in the American experience. Topics include Mexican American and Latinos/as in the electoral process, political and economic institutions, political behavior and opinion, civil rights, representation, social movements, and contemporary public policy debates. (Formerly POL 3093. Credit cannot be earned for both POL 2403 and POL 3093).

POL 2503. Introduction to Political Theory. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of fundamental concepts in political science such as justice, democracy, obligation, freedom, and equality. Generally offered: Fall, Spring.

POL 2513. Politics and the Administrative Process. (3-0) 3 Credit Hours.

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. (Formerly titled "Public Administration and Public Policy.")

POL 2533. Introduction to Political Science. (3-0) 3 Credit Hours. (TCCN = GOVT 2304)

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. Generally offered: Spring.

POL 2603. Introduction to International Relations. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. The course focuses on the study of political processes and interactions between states and non-state actors in an interconnected world, and discusses basic theoretical frameworks like realist, liberal, constructivist and critical approaches; levels of analysis; international institutions; causes of war and peace; and effects of international trade. Other topics discussed may include transnational terrorism; human rights; humanitarian intervention and peacekeeping operations; development; globalization; multinational corporations; nuclear proliferation; climate change; international monetary and financial regimes; democracy promotion, etc. (Same as GLA 2603. Credit can be earned for both POL 2603 and GLA 2603.) Generally offered: Fall.

POL 2623. Law and Society. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of the nature of law, its role in sociopolitical systems, and the institutional components of legal systems. Theories and systems of law examined may include natural, constitutional, common, civil, customary, socialist, and theocratic law. May employ a comparative or historical framework for understanding the variety of institutional arrangements through which systems of law are implemented. (Same as PAL 2623. Credit cannot be earned for both PAL 2623 and POL 2623.) Generally offered: Fall.

POL 2633. Comparative Politics. (3-0) 3 Credit Hours.

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. (Same as GLA 2633. Credit cannot be earned for both POL 2633 and GLA 2633.)

POL 2693. Designing Research in Political Science. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. A practical introduction to understanding, interpreting, assessing, and developing research designs in Political Science. Students will be introduced to the different elements of research design and inquiry, including the development of research questions, techniques of operationalization and measurement, and methods of analysis. Topics may also include major theoretical approaches and philosophical debates related to social science inquiry to make students aware of the diversity of research approaches that characterizes Political Science in order to utilize and apply this knowledge in their curriculum. Generally offered: Fall, Spring.

POL 2703. Quantitative Methods in Political Science. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An introduction to fundamental quantitative analysis geared to provide the student knowledge and skills applicable for graduation and beyond. Emphasis will be placed on literacy and basic proficiency in statistical topics and techniques (e.g., classic hypothesis testing, univariate through multivariate analyses); and, data management (e.g., entry and manipulation) and graphical presentation of analysis. Standard statistical software packages will be used. Generally offered: Fall, Spring.

POL 3013. The American Legal Process. (3-0) 3 Credit Hours.

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. (Same as PAL 3013. Credit cannot be earned for both PAL 3013 and POL 3013.) Generally offered: Fall.

POL 3033. International Governance. (3-0) 3 Credit Hours.

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. (Same as GLA 3033. Credit cannot be earned for both POL 3033 and GLA 3033.) Generally offered: Summer.

POL 3043. International Human Rights. (3-0) 3 Credit Hours.

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. (Same as GLA 3043. Credit cannot be earned for both POL 3043 and GLA 3043.)

POL 3103. Contemporary Theories of Justice. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An exploration of competing contemporary accounts of the political, economic, and cultural components of a just society. Some of the following theories will be discussed: libertarianism, liberalism, socialism, Marxism, communitarianism, multiculturalism, feminism, critical race perspectives, and environmentalism. (Formerly titled "Political Ideology.")

POL 3113. American Political Thought. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Consideration of American political thought with an emphasis on primary sources. Readings may include the works of Winthrop, Madison, Hamilton, Jefferson, Tocqueville, Calhoun, Lincoln, Melville, Twain, Douglass, DuBois, Addams, Croly, Wilson, Roosevelt, MLK, Malcolm X, and other diverse works of a political, philosophical, or literary nature. May be organized chronologically or topically. Generally offered: Spring.

POL 3123. Political Psychology. (3-0) 3 Credit Hours.

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. Generally offered: Spring.

POL 3133. Political Philosophy: Ancient and Medieval. (3-0) 3 Credit Hours.

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.

POL 3143. Political Philosophy: Modern. (3-0) 3 Credit Hours.

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.

POL 3153. Political Philosophy: Contemporary. (3-0) 3 Credit Hours.

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.

POL 3173. Justice and Social Policy. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines social policies relating to the family, education, health care, old age, poverty, and other issues from a normative or social justice perspective. Questions that this course addresses may include: What role, if any, should the state play in the family? What should be the goals of a just education system? Should the United States support universal health care? What responsibility, if any, does society have toward the poor?.

POL 3183. Women in Politics. (3-0) 3 Credit Hours.

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.

POL 3203. African American Political Thought. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines the political thought of African Americans from the ante-bellum era to the present. May include the works of Frederick Douglass, Booker T. Washington, W.E.B. DuBois, Ida B. Wells, Marcus Garvey, Richard Wright, Ralph Ellison, Martin Luther King, Jr., Malcolm X, Angela Davis, Cornell West, Shelby Steele, Clarence Thomas, Lani Guinier, Eldridge Cleaver, Barack Obama, and others.

POL 3223. Judicial Politics. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Topics may include political behavior of the major participants in the judicial process; the development of judicial institutions and processes; the political and administrative context of the judicial process; judicial-executive and judicial-legislative relations; and the impact of judicial decisions. (Same as PAL 3223. Credit cannot be earned for both PAL 3223 and POL 3223.) Generally offered: Spring.

POL 3244. Mass Media and Public Opinion. (3-2) 4 Credit Hours.

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.) Generally offered: Fall. Course Fee: MST1 \$30.

POL 3253. Participation and American National Elections. (3-0) 3 Credit Hours.

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.

POL 3283. The American Presidency. (3-0) 3 Credit Hours.

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. Generally offered: Spring.

POL 3293. Political Movements. (3-0) 3 Credit Hours.

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.

POL 3303. Race, Ethnicity and Public Policy. (3-0) 3 Credit Hours.

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.

POL 3313. The Supreme Court. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines the U.S. Supreme Court as a political and legal institution. Topics may include the colonial and English antecedents to the Supreme Court, its constitutional origins in the framing and ratification debates, major episodes in its development from the early republic to the present, its role within the federal judiciary, its impact on party politics and political culture, and its relationship to Congress, the executive branch, and the state courts. (Same as PAL 3313. Credit cannot be earned for both PAL 3313 and POL 3313).

POL 3323. Constitutional Law I. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of constitutional questions arising from the institutional features of American government, including electoral processes, separation of powers, and federalism. Emphasizes judicial opinions and other primary sources. May be organized chronologically or topically. Generally offered: Fall.

POL 3333. Constitutional Law II. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of constitutional questions arising from the protection of rights and liberties in the American political system. Topics may include religious liberty, free speech, voting, property rights, due process, equal protection, and rights of the accused. Emphasizes judicial opinions and other primary sources. May be organized chronologically or topically. (Replaces POL 3023 Civil Liberties in American Law and Practice.)

POL 3353. Leadership and Elites. (3-0) 3 Credit Hours.

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.

POL 3363. Political Parties and Interest Groups. (3-0) 3 Credit Hours.

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.

POL 3373. The Legislative Process. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of the functions, structures, and politics of legislatures and their relationships to their constituencies and other branches of government.

POL 3383. East European Politics. (3-0) 3 Credit Hours.

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. (Same as GLA 3383. Credit cannot be earned for POL 3383 and GLA 3383.)

POL 3393. Latin American Politics. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines trends and variations in political development in Latin America during the last century. The main focus is on the interaction between states and citizens, social relations, and economic development. This course examines issues affecting Latin America as a whole, but readings and lectures will also explore individual countries within the region. (Same as GLA 3393. Credit cannot be earned for both POL 3393 and GLA 3393.)

POL 3403. European Governments. (3-0) 3 Credit Hours.

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. (Same as GLA 3403. Credit cannot be earned for both POL 3403 and GLA 3403.)

POL 3413. Urban Development: Politics Planning, and Power. (3-0) 3 Credit Hours.

The study of urbanization as a general process from multi-disciplinary perspectives - political, economic, geographic, and social. We will analyze urban change dynamics (both growth and stagnation) and study urban regimes with an emphasis on the history and current forms of spatial and social segregation of cities by race, class, ethnicity, culture, and gender. Case studies may be drawn from Texas urban areas, including San Antonio and Austin. (Formerly titled "The Politics of Urban Development.") (Same as GES 3563. Credit cannot be earned for both GES 3563 and POL 3413.)

POL 3423. Geopolitics of Russia and Eurasia. (3-0) 3 Credit Hours.

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 GLA 3423 and GES 3423. Credit cannot be earned for more than one of the following: GLA 3423, GES 3423, GRG 3423, or POL 3423.)

POL 3433. Governments and Politics of Southeast Asia. (3-0) 3 Credit Hours.

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. (Same as GLA 3433. Credit cannot be earned for both POL 3433 and GLA 3433.) Generally offered: Spring.

POL 3443. Governments and Politics of East Asia. (3-0) 3 Credit Hours.

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. (Same as GLA 3443. Credit cannot be earned for both POL 3443 and GLA 3443.)

POL 3453. Politics of Mexico. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course is an introduction to contemporary Mexican politics. It begins with a review of Mexico's history since independence, and then moves on to study the key challenges in Mexican political development. The course focuses on identifying the key players and institutions involved in Mexican politics, and will evaluate the nature of Mexico's recent democratic transition/consolidation process. (Same as GLA 3453. Credit cannot be earned for both POL 3453 and GLA 3453).

POL 3463. Politics of the Third World. (3-0) 3 Credit Hours.

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. (Same as GLA 3463. Credit cannot be earned for both POL 3463 and GLA 3463.) Generally offered: Summer.

POL 3473. Latin America in the World. (3-0) 3 Credit Hours.

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. (Same as GLA 3473. Credit cannot be earned for both GLA 3473 and POL 3473. Formerly titled "Theories and Problems in Latin American Politics.")

POL 3483. International Political Economy. (3-0) 3 Credit Hours.

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. (Same as GLA 3483. Credit cannot be earned for both POL 3483 and GLA 3483.)

POL 3493. Politics of the Middle East. (3-0) 3 Credit Hours.

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. (Same as GLA 3493. Credit cannot be earned for both POL 3493 and GLA 3493.)

POL 3503. American Foreign Policy since World War II. (3-0) 3 Credit Hours.

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. (Same as GLA 3503. Credit cannot be earned for both POL 3503 and GLA 3503.)

POL 3513. International Organizations in World Politics. (3-0) 3 Credit Hours.

Prerequisite: GLA 1013 or POL 1013. This course will examine the role and influence of international organizations in major issue areas such as security, development, human rights, and regionalism. Organizations examined include the United Nations system, regional organizations, alliance systems, and common markets (Same as GLA 3513. Credit cannot be earned for both POL 3513 and GLA 3513.) Generally offered: Fall.

POL 3523. Force in International Politics. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course engages with experiences of violence in international relations. It provides an examination of modern research into the use of coercion in international relations with a focus on economic sanctions, war, and terrorism. Special emphasis will be placed on the causes, trends, and consequences of interstate wars. Topics may include armed conflict, trauma and suffering, laws of war, representation of war in media, peace movements, and the technologies of peace making. (Same as GLA 3523. Credit cannot be earned for both POL 3523 and GLA 3523).

POL 3553. The Welfare State in Comparative Perspective. (3-0) 3 Credit Hours.

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. (Formerly titled "Social Policy in Modern Welfare States.") Generally offered: Spring.

POL 3563. Current Issues in World Politics. (3-0) 3 Credit Hours.

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. (Same as GLA 3563. Credit cannot be earned for both POL 3563 and GLA 3563.)

POL 3583. Jurisprudence. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An inquiry into the nature of law and legal obligation with emphasis on relevant works of political philosophy and those of important jurists. Works covered in the course may represent natural law, positivist, realist, theocratic, and critical perspectives on law. (Formerly POL 4153. Same as PAL 3583. Credit cannot be earned for both POL 3583 and POL 4153 or PAL 3583.)

POL 3593. Topics in Latin American Security. (3-0) 3 Credit Hours.

Prerequisite: POL 1013 or GLA 1013. This seminar examines key questions for regional security in Latin America. Although drawing on scholarly and historical materials, this course focuses essentially on contemporary regional security and includes general topics, such as regional security, peace and war in Latin America, civil-military relations, drug trafficking, and public security. The cases are selected in part to provide geographical balance and contemporary relevance, but also to demonstrate the contrasts between traditional and emerging security questions in the region. (Same as GLA 3593. Credit cannot be earned for both GLA 3593 and POL 3593.)

POL 3633. Political Economy. (3-0) 3 Credit Hours.

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. (Same as GLA 3633. Credit cannot be earned for both POL 3633 and GLA 3633.) Generally offered: Fall.

POL 3643. Justice among Nations. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of different theories of justice between states and/or the citizens of different states. Topics may include just war theory; cosmopolitan and anti-cosmopolitan debates; theories of human rights and the challenges to them; multiculturalism; diverse religious or cultural views on justice in world affairs. May be repeated for credit when topics vary.

POL 3743. Politics in Film. (3-0) 3 Credit Hours.

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.

POL 3763. Globalization. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines normative and empirical issues in globalization debates, such as the role of states and nonstate 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 GLA 3763 and INS 3763. Credit cannot be earned for more than one of the following: POL 3763, GLA 3763, or INS 3763.) Generally offered: Summer.

POL 3773. Experiments in Democratic Renewal. (3-0) 3 Credit Hours.

Prerequisites: POL 1013 and GLA 1013 or POL 2603 or POL 2633. This course examines experiments with popular participation around the world that try new forms of collective action to solve public problems. The setting of these experiments is the double movement of globalization of production and the decentralization of government which have placed a premium on learning processes in contrast to the bureaucratic welfare state and market-based decision-making. The course examines cases in the United States as well as other countries, such as Brazil, Mexico, Canada, India, and others. The course will examine debates about the foundations for as well as the efficacy of new decision-making procedures. Policy cases may include schooling, environmental protection, policing, housing, drug rehabilitation, sweat shop labor, community finance, women's development, and public budgeting.

POL 3783. Democracy and World Politics. (3-0) 3 Credit Hours.

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. (Same as GLA 3783. Credit cannot be earned for both POL 3783 and GLA 3783.) (Formerly titled "Comparative Democratization.").

POL 3813. Politics of Federal Justice Policy Making. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines the intersections of politics and legal institutions of the federal government. Consideration will be given to major historical and political developments mainly associated with policy decisions of the federal executive and the federal judiciary in carrying out constitutional and statutory obligations in civil and criminal enforcement, adjudication, and punishment. Special emphasis will be given to how federal justice policies are formed, implemented, and evaluated by presidents, Congress, and the federal courts in policy areas such as civil rights, privacy and surveillance, interstate and international criminal organizations, investigative practices, prosecutorial effectiveness, and civil and criminal penalties/sanctions. (Same as PAL 3813. Credit cannot be earned for both PAL 3813 and POL 3813.).

POL 3823. Politics of Congressional Elections. (3-0) 3 Credit Hours.

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.

POL 3843. Campaign and Election Law. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines the laws that govern elections in the United States. Topics include the constitutional and legal issues arising from campaign finance regulations, political party organization, election administration, and redistricting as well as the constitutional and statutory protection of voting rights. The course may also consider these issues in comparative perspective. (Same as PAL 3843. Credit cannot be earned for both PAL 3843 and POL 3843.).

POL 3853. Immigration Law. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Examines the legal framework of immigration and citizenship in the United States. Topics include the history and development of immigration and citizenship policy, the constitutional and international law foundations of immigration regulation, the structure and operation of federal institutions that regulate immigration, the role of state and local governments in enforcing immigration policy, and the legal processes that adjudicate immigration cases. (Same as PAL 3853. Credit cannot be earned for both PAL 3853 and POL 3853.).

POL 4023. Techniques in Global Analysis. (3-0) 3 Credit Hours.

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.) Generally offered: Fall.

POL 4123. Legal and Philosophical Reasoning. (3-0) 3 Credit Hours.

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 PAL 4123. Formerly LGS 4123. Credit cannot be earned for both POL 4123 and PAL 4123 or LGS 4123.).

POL 4133. Politics, Law, and Literature. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Examination of fundamental questions of political theory as treated in works of literature. Topics may include authority, law and discretion, the individual and the community, church and state, criminality, and the nature of freedom, especially as these issues emerge in different political orders. Potential works include Greek tragedy and comedy, Dante, Shakespeare, Dostoyevsky, Hawthorne, Melville, Twain, Richard Wright, Ralph Ellison, Flannery O'Connor, Robert Penn Warren, Walker Percy, Saul Bellow, and others. (Same as PAL 4153. Credit cannot be earned for both POL 4133 and PAL 4153.).

POL 4163. Model UN. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. The course introduces students to the United Nations and the world of Model UN. The class will discuss the organization's history, structure, operations, and role in the international system. Applying this knowledge in educational simulation, the class will engage students in modelling the UN. This will include hosting a Model UN as well as competing nationally as delegates. As such, the class will solidify substantial knowledge on the UN as well as provide logistical project management skills. Credit in GLA 3533 is not a prerequisite but priority will be given to students who have taken GLA 3533. (Same as GLA 4163. Credit cannot be earned for both POL 4163 and GLA 4163.)

POL 4213. The Intelligence Community in World Affairs. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Advanced study of key historical developments of U.S. and other intelligence functions in national and international security. Examines a broad range of issues and case studies such as collection and analytical methods, measures of success and failure of intelligence operations, agency organizational problems, accuracy and accountability, counterintelligence and covert operations, threats to homeland security, constitutional and legislative roles, liaison relationships, and challenges in executive-legislative interactions in the policy making process. (Same as GLA 4213. Credit cannot be earned for both POL 4213 and GLA 4213. Formerly GLA 4013 and POL 4013.) Generally offered: Spring.

POL 4323. Administrative Law and Politics. (3-0) 3 Credit Hours.

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. (Same as PAL 4323. Credit cannot be earned for both PAL 4323 and POL 4323.) Generally offered: Spring.

POL 4853. Study Abroad: Political Science. (3-0) 3 Credit Hours.

Prerequisite: Permission of instructor. A lecture course associated with a study abroad program. Involves international travel and field trips. May be repeated for credit when the destination country varies.

POL 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: Independent Study Course Form signed by 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.

POL 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: Independent Study Course Form signed by 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.

POL 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: Independent Study Course Form signed by 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.

POL 4933. Internship in Political Science. (0-0) 3 Credit Hours.

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.

POL 4936. Internship in Political Science. (0-0) 6 Credit Hours.

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.

POL 4953. Special Studies in Political Science. (3-0) 3 Credit Hours.

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.

POL 4973. Seminar in Political Science. (3-0) 3 Credit Hours.

Prerequisites: POL 1013, POL 2693, 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. Generally offered: Fall, Spring.

POL 4983. Research Practicum. (0-0) 3 Credit Hours.

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.

POL 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: 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. Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval. 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 enrolling should contact the Department Undergraduate Advisor of Record for additional information.

Politics and Law (PAL)

Politics and Law (PAL) Courses

PAL 2013. Introduction to Legal Studies. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An introduction to legal studies from an interdisciplinary perspective, exploring historical and contemporary aspects of the content, operations, and effects of law in societies. (Formerly LGS 2013. Credit cannot be earned for both PAL 2013 and LGS 2013.) Generally offered: Fall, Spring.

PAL 2623. Law and Society. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An examination of the nature of law, its role in sociopolitical systems, and the institutional components of legal systems. Theories and systems of law examined may include natural, constitutional, common, civil, customary, socialist, and theocratic law. May employ a comparative or historical framework for understanding the variety of institutional arrangements through which systems of law are implemented. (Same as POL 2623. Credit cannot be earned for both PAL 2623 and POL 2623.) Generally offered: Fall.

PAL 3013. The American Legal Process. (3-0) 3 Credit Hours.

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. (Same as POL 3013. Credit cannot be earned for PAL 3013 and POL 3013.) Generally offered: Fall.

PAL 3023. Legal Research and Writing. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Provides students with the opportunity to explore the modes and sources of legal research, both traditional and electronic. (Formerly LGS 3013. Credit cannot be earned for both LGS 3013 and PAL 3023.) Generally offered: Fall, Spring, Summer.

PAL 3113. Minorities and the Law. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines the litigation, case law, legislation, and legal literature associated with African Americans and Mexican Americans in the United States. (Formerly LGS 3113. Credit cannot be earned for both PAL 3113 and LGS 3113.) Generally offered: Fall.

PAL 3213. Law School Studies. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. 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. (Formerly LGS 3213. Credit cannot be earned for both PAL 3213 and LGS 3213.) Generally offered: Summer.

PAL 3223. Judicial Politics. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Topics may include political behavior of the major participants in the judicial process; the development of judicial institutions and processes; the political and administrative context of the judicial process; judicial-executive and judicial-legislative relations; and the impact of judicial decisions. (Same as POL 3223. Credit cannot be earned for both PAL 3223 and POL 3223.) Generally offered: Spring.

PAL 3313. The Supreme Court. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines the U.S. Supreme Court as a political and legal institution. Topics may include the colonial and English antecedents to the Supreme Court, its constitutional origins in the framing and ratification debates, major episodes in its development from the early republic to the present, its role within the federal judiciary, its impact on party politics and political culture, and its relationship to Congress, the executive branch, and the state courts. (Same as POL 3313. Credit cannot be earned for both PAL 3313 and POL 3313.)

PAL 3323. Constitutional Analysis. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An analysis of constitutional cases with close attention to alternative modes of interpretation and the role of precedent in judicial decision-making. Students will learn how to brief cases and will be expected to answer questions about assigned cases in class. (Formerly LGS 3323. Credit cannot be earned for both PAL 3323 and LGS 3323.) Generally offered: Summer.

PAL 3413. Regulatory Law and Enterprise. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. 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. (Formerly LGS 3413. Credit cannot be earned for both PAL 3413 and LGS 3413.)

PAL 3513. Trial and Appellate Advocacy. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Cultivates the practice of deliberative rhetoric with particular emphasis on its use in legal argumentation. Primary activity will be preparation for and participation in moot court, a simulation that involves arguing constitutional cases before the Supreme Court. Entails intensive study of case law. Course may be repeated for credit when the topic varies.

PAL 3533. State Courts: Judicial Decision-Making Practice and Procedure. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course will examine American trial courts and specifically the role of the Judge in dispensing and insuring justice in both civil and criminal matters. A constitutional analysis of judicial authority will be studied, including the court's powers and limitations. A review of the role of the various instrumental components in the administration of justice will be studied from legal counsel, prosecutors, and probation officers and the impact each has in the outcome of cases before the court. Additionally, constitutional protections will be surveyed to provide an in-depth understanding of due process and equal protection under the law and the procedure of litigants and defendants during the trial process.

PAL 3583. Jurisprudence. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An inquiry into the nature of law and legal obligation with emphasis on relevant works of political philosophy and those of important jurists. Works covered in the course may represent natural law, positivist, realist, theocratic, and critical perspectives on law. (Same as POL 3583. Credit cannot be earned for both PAL 3583 and POL 3583.)

PAL 3813. Politics of Federal Justice Policy. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines the intersections of politics and legal institutions of the federal government. Consideration will be given to major historical and political developments mainly associated with policy decisions of the federal executive and the federal judiciary in carrying out constitutional and statutory obligations in civil and criminal enforcement, adjudication, and punishment. Special emphasis will be given to how federal justice policies are formed, implemented, and evaluated by presidents, Congress, and the federal courts in policy areas such as civil rights, privacy and surveillance, interstate and international criminal organizations, investigative practices, prosecutorial effectiveness, and civil and criminal penalties/sanctions. (Same as POL 3813. Credit cannot be earned for both PAL 3813 and POL 3813.)

PAL 3843. Campaign and Election Law. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. This course examines the laws that govern elections in the United States. Topics include the constitutional and legal issues arising from campaign finance regulations, political party organization, election administration, and redistricting as well as the constitutional and statutory protection of voting rights. The course may also consider these issues in comparative perspective. (Same as POL 3843. Credit cannot be earned for both PAL 3843 and POL 3843.)

PAL 3853. Immigration Law. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Examines the legal framework of immigration and citizenship in the United States. Topics include the history and development of immigration and citizenship policy, the constitutional and international law foundations of immigration regulation, the structure and operation of federal institutions that regulate immigration, the role of state and local governments in enforcing immigration policy, and the legal processes that adjudicate immigration cases. (Same as POL 3853. Credit cannot be earned for both PAL 3853 and POL 3853).

PAL 3863. Contracts. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. An introduction to contract law, including topics such as offer and acceptance, consideration, contracts enforceable without consideration, defenses to enforcement of contracts, terms of contracts and their interpretation, performance and breach of contracts, remedies for breach, third-party beneficiaries, and assignments. (Formerly LGS 3868. Credit cannot be earned for both LGS 3863 and PAL 3863).

PAL 4013. Issues in Law and Society. (3-0) 3 Credit Hours.

Prerequisite: PAL 2013 or POL 1013. 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. (Formerly LGS 4013. Credit cannot be earned for both PAL 4013 and LGS 4013.) Generally offered: Spring.

PAL 4123. Legal and Philosophical Reasoning. (3-0) 3 Credit Hours.

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. (Formerly LGS 4123. Same as POL 4123. Credit cannot be earned for both PAL 4123 and POL 4123 or LGS 4123.)

PAL 4133. Legal Analysis and Argumentation. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. 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 accessing arguments throughout college, career, and life. (Formerly LGS 4133. Credit cannot be earned for both PAL 4133 and LGS 4133).

PAL 4153. Law and Literature. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Examination of fundamental questions of political theory as treated in works of literature. Topics may include authority, law and discretion, the individual and the community, church and state, criminality, and the nature of freedom, especially as these issues emerge in different political orders. Potential works include Greek tragedy and comedy. Dante, Shakespeare, Dostoyevsky, Hawthorne, Melville, Twain, Richard Wright, Ralph Ellison, Flannery O'Connor, Robert Penn Warren, Walker Percy, Saul Bellow, and others. (Same as POL 4133. Credit cannot be earned for both PAL 4153 and POL 4133.)

PAL 4213. Great Controversies in Politics and Law. (3-0) 3 Credit Hours.

Prerequisites: POL 1013 and PAL 2623. This course will examine a legal and political controversy of great importance, either current or historical. Topics vary and are chosen by the instructor. Examples may include Slavery, Abolition, and Reconstruction; Framing and Ratification of the Constitution; Religious Free Exercise; Civil Rights and Civil Disobedience; Presidential War Powers and Congress.

PAL 4223. Torts. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. 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. (Formerly LGS 4223. Credit cannot be earned for both PAL 4223 and LGS 4223.) Generally offered: Spring, Summer.

PAL 4233. Federal Courts. (3-0) 3 Credit Hours.

Prerequisite: POL 1013. Designed to provide students with a sophisticated understanding of the role of the federal judiciary in the American constitutional system. Topics may include the constitutional framework and institutional development of the federal courts; their interaction with administrative agencies and state courts; and questions arising from the power of judicial review. (Formerly LGS 4233. Credit cannot be earned for both PAL 4233 and LGS 4233.)

PAL 4323. Administrative Law and Politics. (3-0) 3 Credit Hours.

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. (Same as POL 4323. Credit cannot be earned for both PAL 4323 and POL 4323.) Generally offered: Spring.

PAL 4911. Independent Study. (0-0) 1 Credit Hour.

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.

PAL 4912. Independent Study. (0-0) 2 Credit Hours.

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.

PAL 4913. Independent Study. (0-0) 3 Credit Hours.

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. (Formerly LGS 4913).

PAL 4933. Internship in Politics and Law. (0-0) 3 Credit Hours.

Prerequisites: POL 1013 and consent of internship coordinator. Supervised experience relevant to legal studies within selected community organizations. A maximum of 6 semester credit hours may be earned through the internship. A maximum of 3 semester credit hours may be applied to the minor. (Formerly LGS 4933).

PAL 4953. Special Studies in Politics and Law. (3-0) 3 Credit Hours.

Prerequisites: 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.

PAL 4973. Senior Seminar in Politics and Law. (3-0) 3 Credit Hours.

Prerequisites: POL 1013, POL 2693, and 15 semester credit hours in PAL or POL coursework, or consent of instructor. Course involves guided, intensive study of a selected topic. Primary emphasis is on supervised research on various aspects of the topic. May be repeated for credit when topics vary. Enrollment is limited to juniors and seniors majoring in Politics and Law or Political Science.

PAL 4993. Honors Thesis. (3-0) 3 Credit Hours.

Prerequisites: 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. Supervised research and preparation of an honors thesis. Enrollment limited to candidates during the last two semesters. To enroll, contact the Department Undergraduate Advisor of Record for additional information. May be repeated once with advisor's approval.

Psychology (PSY)

Psychology (PSY) Courses

PSY 1013. Introduction to Psychology. (3-0) 3 Credit Hours. (TCCN = PSYC 2301)

Introduction to the study of the mind and behavior in humans and other species with attention to awareness, sensation, perception, emotion, motivation, learning, memory, problem solving, personality, mental and behavioral development, abnormal behavior, and social behavior in group settings. Psychological, social, cultural, institutional, and biological determinants of behavior are considered, together with applications of basic principles based on individuals within a variety of cultural, civic, and public policy contexts. Scientific approaches to the explanation of psychological phenomena are examined critically, with emphasis on empirical research involving the application of the scientific method and quantitative research skills and results to everyday life situations and areas of social responsibility. Communication of empirical results to an appropriate audience is required, as is participation in illustrative research. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences. (Credit cannot be earned for both PSY 1013 and PSY 2013.) Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

PSY 2073. Statistics for Psychology. (3-0) 3 Credit Hours.

Prerequisites: MAT 1023, MAT 1073, or STA 1053; 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.) Generally offered: Fall, Spring, Summer.

PSY 2503. Developmental Psychology. (3-0) 3 Credit Hours. (TCCN = PSYC 2314)

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. Generally offered: Fall, Spring, Summer.

PSY 2513. Abnormal Psychology. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

PSY 2523. Personality. (3-0) 3 Credit Hours. (TCCN = PSYC 2316)

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.

PSY 2533. Social Psychology. (3-0) 3 Credit Hours. (TCCN = PSYC 2319)

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. Generally offered: Fall, Spring.

PSY 2543. Theories of Learning. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

PSY 2563. Cognitive Psychology. (3-0) 3 Credit Hours.

Prerequisite: PSY 1013. A survey of scientific theories and research in cognitive psychology. Topics include attention, memory, and problem-solving. (Credit cannot be earned for both PSY 2563 and PSY 3103).

PSY 2573. Psychology of Thought. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

PSY 3023. Social Psychology of Small Groups. (3-0) 3 Credit Hours.

Prerequisites: PSY 2533 and PSY 3413; 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.

PSY 3053. Cross-Cultural Psychology. (3-0) 3 Credit Hours.

Prerequisites: ANT 1013, ANT 2053, or PSY 1013; and PSY 3413 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.

PSY 3103. Cognition. (3-0) 3 Credit Hours.

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. (Credit cannot be earned for both PSY 3103 and PSY 2563.) Generally offered: Fall, Spring, Summer.

PSY 3113. Motivation and Emotion. (3-0) 3 Credit Hours.

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. Generally offered: Fall.

PSY 3123. Attitudes. (3-0) 3 Credit Hours.

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.

PSY 3153. Sensation and Perception. (3-0) 3 Credit Hours.

Prerequisite: 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.) Generally offered: Fall, Spring.

PSY 3203. Industrial and Organizational Psychology. (3-0) 3 Credit Hours.

Prerequisite: PSY 3413 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.

PSY 3303. Psychological Perspectives on Gender. (3-0) 3 Credit Hours.

Prerequisite: PSY 2533 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. Generally offered: Fall, Spring.

PSY 3403. Experimental Psychology. (3-0) 3 Credit Hours.

Prerequisites: Two courses from PSY 2503, PSY 2513, PSY 2533, or PSY 2563; a minimum grade of "C-" in PSY 2073 or consent of instructor. 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. Generally offered: Fall, Spring, Summer.

PSY 3413. Experimental Projects and Laboratory. (2-2) 3 Credit Hours.

Prerequisite: Completion of or 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. (Formerly titled "Experimental Psychology Laboratory.") Generally offered: Fall, Spring, Summer.

PSY 3513. Developmental Psychopathology. (3-0) 3 Credit Hours.

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.") Generally offered: Fall.

PSY 3523. Psychology of Adulthood and Aging. (3-0) 3 Credit Hours.

Prerequisite: PSY 2503 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. Generally offered: Fall.

PSY 3543. Introduction to Clinical Psychology. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer.

PSY 3553. Behavior Analysis and Learning. (3-0) 3 Credit Hours.

Prerequisites: PSY 1013 or equivalent; and PSY 3403 or equivalent. An introduction to and survey of the principles, methods, theories and applications of the experimental analysis of behavior. Emphasis on the implications of behavior theory and the experimental analysis of behavior in contemporary society.

PSY 3563. Couple and Family Psychology. (3-0) 3 Credit Hours.

Prerequisites: PSY 1013 and PSY 3403. This course will focus on psychological research on relationships, processes and factors within couples and families. Demographic status and changes in American couples and families and how these changes relate to changes in racial/ethnic changes and diversity are considered. Psychological models of couples and families will be discussed. Understanding family structure, relationship processes and factors that are related to health and well-being of individual couple and family members that are related to successful and healthy couples and family relationships are discussed.

PSY 4003. History of Psychology. (3-0) 3 Credit Hours.

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.

PSY 4013. Social Psychology of the Self. (3-0) 3 Credit Hours.

Prerequisites: PSY 2533 and PSY 3403; and completion of or concurrent enrollment in PSY 3413; 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.

PSY 4103. Social Psychology of Prejudice. (3-0) 3 Credit Hours.

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.

PSY 4133. Social and Personality Development. (3-0) 3 Credit Hours.

Prerequisites: PSY 2503 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.

PSY 4143. Memory. (3-0) 3 Credit Hours.

Prerequisites: PSY 2543 or PSY 2563 or PSY 2573; PSY 3403 and PSY 3413 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. Generally offered: Fall, Spring.

PSY 4183. Physiological Psychology. (3-0) 3 Credit Hours.

Prerequisite: Enrollment restricted to Psychology majors until the first week of class. 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. Generally offered: Fall, Spring, Summer.

PSY 4193. Relationships. (3-0) 3 Credit Hours.

Prerequisites: PSY 2533 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.

PSY 4213. Social Cognition. (3-0) 3 Credit Hours.

Prerequisites: PSY 2533, PSY 2563, 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.

PSY 4253. Psychology of Health. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer.

PSY 4343. Cognitive Neuroscience. (3-0) 3 Credit Hours.

Prerequisite: PSY 2563 or PSY 3103. Examines issues in cognitive psychology, neuroscience, and the relations between cognitive psychology and neuroscience. Topics include the neural basis of perception, attention, memory, language, and executive function skills. Students will also study how these processes change during normal development and in various neurological disorders. Critical thinking, problem solving skills, and use of the scientific method will be emphasized.

PSY 4911. Independent Study. (0-0) 1 Credit Hour.

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. Does not count toward upper-division course requirements for the major but may be taken as an elective. Recommended for students planning to pursue a research focused graduate degree.

PSY 4913. Independent Study. (0-0) 3 Credit Hours.

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. Does not count toward upper-division course requirements for the major but may be taken as an elective. Recommended for students planning to pursue a research focused graduate degree.

PSY 4933. Internship in Psychology. (0-0) 3 Credit Hours.

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. Does not count toward course requirements for the major but may be taken as an elective. Recommended for students who wish to gain experience in applied settings. Must be taken on a credit/no-credit basis. Generally offered: Fall, Spring.

PSY 4936. Internship in Psychology. (0-0) 6 Credit Hours.

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. Does not count toward course requirements for the major but may be taken as an elective. Recommended for students who wish to gain experience in applied settings. Must be taken on a credit/no-credit basis.

PSY 4953. Special Studies in Psychology. (3-0) 3 Credit Hours.

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.

PSY 4993. Honors Thesis. (0-0) 3 Credit Hours.

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. Does not count toward upper-division course requirements for the major but may be taken as an elective. Recommended for students planning to pursue a research focused graduate degree. Generally offered: Fall, Spring.

Public Administration (PAD)

Public Administration (PAD) Courses

PAD 1113. Public Administration in American Society. (3-0) 3 Credit Hours.

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. May be applied toward the Core Curriculum requirement in the Component Area Option. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; STSP \$9.

PAD 2013. Introduction to Public Policy. (3-0) 3 Credit Hours.

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. (Formerly PAD 3013. Credit cannot be earned for both PAD 3013 and PAD 2013.) Generally offered: Fall, Spring. Course Fee: STSP \$9.

PAD 2073. Foundations of Civic Engagement. (3-0) 3 Credit Hours.

This foundational course provides students with an understanding of civic participation, civic literacy and the necessary skill set for completion of the minor. It is designed to guide students in making links between their major area of study and the communities in which they work and live in order to help prepare students for a lifetime of responsible citizenship and civic engagement. Course Fee: STSP \$9.

PAD 3003. Fundraising in Nonprofit Agencies. (3-0) 3 Credit Hours.

Examines methods, techniques, and directed experience in fundraising for nonprofit agencies. Explores relationships with umbrella organizations, government funding, grantsmanship, budget control, and accountability. (Formerly NPO 3003. Credit cannot be earned for both PAD 3003 and NPO 3003.) Course Fee: STSP \$9.

PAD 3023. Introduction to Urban Management and Policy. (3-0) 3 Credit Hours.

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; and policy issues in urban settings. Generally offered: Fall, Spring. Course Fee: STSP \$9.

PAD 3033. Introduction to Nonprofit Agencies. (3-0) 3 Credit Hours.

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 different 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.) Generally offered: Fall, Spring. Course Fee: STSP \$9.

PAD 3043. Public and Nonprofit Financial Management. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fee: STSP \$9.

PAD 3053. Urban Economic Development. (3-0) 3 Credit Hours.

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. Course Fee: STSP \$9.

PAD 3073. Civic Leadership Integrative Seminar. (3-0) 3 Credit Hours.

Prerequisite: PAD 2073. This course is the capstone course for the Minor in Civic Engagement. It will engage students, actively in the San Antonio community through a service-learning experience. Course Fee: STSP \$9.

PAD 3113. Managing Nonprofit Organizations. (3-0) 3 Credit Hours.

This course focuses on understanding the nature and role of nonprofit organizations. The course explores strategies for preserving and maximizing the public value of 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 nonprofit sector, and how to maximize organizational performance, are emphasized. Course Fee: STSP \$9.

PAD 3123. Strategic Planning in the Public and Nonprofit Sectors. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fee: STSP \$9.

PAD 3133. Politics and Policies of San Antonio and South Texas. (3-0) 3 Credit Hours.

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. Course Fee: STSP \$9.

PAD 3143. Urban and Regional Planning. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fee: STSP \$9.

PAD 3153. Administrative Law and Policy. (3-0) 3 Credit Hours.

This course covers the legal framework for creating and implementing public policy, at all governmental levels. It includes an overview of the authority of legislative bodies to formulate laws and policies, as well as the rules that govern the implementation of these laws and policies by administrative bodies. The course will also cover the authority of courts to review and/or overturn laws and policies. (Formerly titled Introduction to Public Law.) Course Fee: STSP \$9.

PAD 3163. Analysis and Assessment for Public Administration. (3-0) 3 Credit Hours.

Prerequisite: Any 3-semester-credit-hour Mathematics core course. This course will introduce students to the nature and practice of evaluation in the public and nonprofit sectors, and to the basic skills necessary to understand and conduct such evaluations. This course covers collecting, organizing, analyzing, and presenting information. (Formerly PAD 2153. Credit cannot be earned for both PAD 3163 and PAD 2153.) Generally offered: Spring. Course Fee: STSP \$9.

PAD 4843. Study Abroad: International Public Administration. (3-0) 3 Credit Hours.

Prerequisite: Permission of instructor. A lecture/seminar course associated with a study abroad program related to the study and practice of comparative governance. Involves international travel and field trips. May be repeated for credit when the destination country varies. Course Fee: STSP \$9.

PAD 4853. Contemporary Issues in Public Administration. (3-0) 3 Credit Hours.

Prerequisite: Should be taken in the semester of graduation or with consent of instructor. 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. Generally offered: Fall, Spring. Course Fee: STSP \$9.

PAD 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisite: Prior approval required. 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. Course Fee: STSP \$3.

PAD 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisite: Prior approval required. 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. Course Fee: STSP \$9.

PAD 4933. Internship in Public Administration. (0-0) 3 Credit Hours.

Prerequisites: PAD 1113, PAD 3163, and either PAD 3023 or PAD 3033; Prior approval of Public Administration Internship Coordinator is 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. Generally offered: Fall, Spring, Summer. Course Fee: STSP \$9.

PAD 4936. Internship in Public Administration. (0-0) 6 Credit Hours.

Prerequisites: PAD 1113, PAD 3163, and either PAD 3023 or PAD 3033; Prior approval of Public Administration Internship Coordinator is 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. Course Fee: STSP \$18.

PAD 4963. Special Topics in Public Administration. (3-0) 3 Credit Hours.

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. (Formerly titled "Special Topics in Urban Management Policy.") Course Fee: STSP \$9.

PAD 4993. Honors Thesis. (0-0) 3 Credit Hours.

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. Course Fee: STSP \$9.

Public Health (PUB)

Public Health (PUB) Courses

PUB 1113. Introduction to Public Health. (3-0) 3 Credit Hours.

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).

PUB 2113. Data Management in Public Health. (3-0) 3 Credit Hours.

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).

PUB 3413. Behavioral Epidemiology. (3-0) 3 Credit Hours.

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).

PUB 3613. Etiology 1: Epidemiologic Methods to Investigate Outbreaks and New Epidemics. (3-0) 3 Credit Hours.

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.

PUB 4613. Etiology 2: Epidemiologic Methods to Investigate Chronic Disease, Exposure, and Risk. (3-0) 3 Credit Hours.

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.

PUB 4913. Independent Study. (0-0) 3 Credit Hours.

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.

PUB 4933. Public Health Internship. (0-0) 3 Credit Hours.

Prerequisites: Senior standing and completion of SOC 1043, SOC 4073, and SOC 3543. 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.

PUB 4936. Public Health Internship. (0-0) 6 Credit Hours.

Prerequisites: Senior standing and completion of SOC 1043, SOC 3543, and SOC 4073. 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 300 hours of work experience is required. Individual conferences and written reports required. Not more than 6 hours of internship will apply to a bachelor's degree.

PUB 4953. Special Studies in Public Health. (3-0) 3 Credit Hours.

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.

Real Estate (RFD)

Note: Beginning Fall 2019, course fees will be replaced with differential tuition at a rate of \$42 per semester credit hour for upper-division College of Business courses.

Real Estate (RFD) Courses

RFD 3523. Real Estate Law. (3-0) 3 Credit Hours.

Topics may include the 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; and negotiations. (Same as BLW 3523. Credit cannot be earned for both RFD 3523 and BLW 3523.) Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

RFD 3533. Principles of Construction for Real Estate Professionals. (3-0) 3 Credit Hours.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

RFD 3571. Real Estate Seminar. (1-0) 1 Credit Hour.

Prerequisites: Enrollment as real estate major or minor and consent of instructor, and approval of the Department Chair and the Dean of the College. Weekly presentations of current topics in real estate. This seminar may be repeated one time for a total of two semester credit hours. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

RFD 4303. Facility and Property Management Policies and Procedures. (3-0) 3 Credit Hours.

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 FM 4303 and MGT 4303. Credit cannot be earned for more than one of the following: FM 4303, MGT 4303, or RFD 4303.) Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

RFD 4313. Facility and Property Management Practices. (3-0) 3 Credit Hours.

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 FM 4313 and MGT 4313. Credit cannot be earned for more than one of the following: FM 4313, MGT 4313, or RFD 4313.) Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

RFD 4733. Principles of Sustainable Real Estate Development. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, FIN 3013, FIN 3433, and FIN 4713 or FIN 4723, or consent of instructor, and approval of the Department chair and the Dean of the College. 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.) Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

RFD 4743. Real Estate Decision Making. (3-0) 3 Credit Hours.

Prerequisite: FIN 3433. This course introduces students to real estate market and investments analysis. Topics may include real estate market analysis, commercial research resources and processes, Excel modeling, and Argus Enterprise. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

RFD 4753. Real Estate Contracts. (3-0) 3 Credit Hours.

Prerequisite: FIN 3433. This course introduces students to real estate contracts. Topics may include common law contract and statutory contract law elements, types and forms of common law contracts and leases, residential and commercial contract/lease review, understanding contract terms and clauses, negotiation, and any other legal or regulatory issues related to contracts or leases. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

RFD 4763. Real Estate Marketing. (3-0) 3 Credit Hours.

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.) Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

RFD 4853. Real Estate Appraisal. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003, FIN 3013, and FIN 3433, their equivalents, or consent of instructor, and approval of the Department Chair and the Dean of the College. 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.) Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

RFD 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: A 3.0 College of Business grade point average, MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the College. See academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

RFD 4912. Independent Study. (0-0) 2 Credit Hours.

Prerequisites: A 3.0 College of Business grade point average, MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the College. See academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

RFD 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: A 3.0 College of Business grade point average, MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the College. See academic advisor 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. Course Fees: BISP \$20; BTSI \$15.

RFD 4923. Internship in Real Estate. (0-0) 3 Credit Hours.

Prerequisites: MGT 3003, declared major in Real Estate Finance and Development and 6 semester credit hours of upper-division real estate or finance courses, a 2.5 UTSA grade point average, and approval in writing from the instructor, the Department Chair, and the Associate/Assistant Dean of Undergraduate Studies in the College of Business. Directed internship of at least 200 hours of work under the supervision of a real estate professional providing students with opportunities to apply concepts, principles, and techniques learned in the classroom. Written report required. A proposal form must be completed and approved prior to registration. Internship may be repeated once for a total of 6 semester credit hours. (Formerly FIN 4923.) Generally offered Fall, spring, and summer. Course Fees: BISP \$20; BTSI \$15.

RFD 4951. Special Studies in Real Estate. (1-0) 1 Credit Hour.

Prerequisites: MGT 3003 and consent of instructor, approval of the Department Chair and the Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

RFD 4952. Special Studies in Real Estate. (2-0) 2 Credit Hours.

Prerequisites: MGT 3003 and consent of instructor, approval of the Department Chair and the Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

RFD 4953. Special Studies in Real Estate. (3-0) 3 Credit Hours.

Prerequisites: MGT 3003 and consent of instructor, approval of the Department Chair and the Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

Russian (RUS)

Russian (RUS) Courses

RUS 1014. Elementary Russian I. (3-2) 4 Credit Hours. (TCCN = RUSS 1411)

Fundamentals of Russian offering the opportunity to develop speaking, listening, reading, and writing skills. Introduction to Russian culture. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall. Course Fees: LRC1 \$16; LRLF \$10; MM01 \$7.

RUS 1024. Elementary Russian II. (3-2) 4 Credit Hours. (TCCN = RUSS 1412)

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. Generally offered: Spring. Course Fee: MM01 \$7.

RUS 2013. Intermediate Russian I. (3-1) 3 Credit Hours. (TCCN = RUSS 2311)

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. Generally offered: Fall. Course Fee: MM01 \$7.

RUS 2023. Intermediate Russian II. (3-1) 3 Credit Hours. (TCCN = RUSS 2312)

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. Generally offered: Spring. Course Fee: MM01 \$7.

RUS 2333. Russian Literature in English Translation. (3-0) 3 Credit Hours.

Major works of Russian literature across time, genres, and movements. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly RUS 3333. Credit cannot be earned for both RUS 2333 and RUS 3333.) Course Fees: LRC1 \$12; LRLF \$10; MM01 \$7.

RUS 3033. Oral Communication Skills. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

RUS 3143. Structure of Russian Language. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

RUS 3213. Advanced Russian. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

RUS 3633. Topics in Russian Culture. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fee: MM01 \$7.

Sociology (SOC)

Sociology (SOC) Courses

SOC 1013. Introduction to Sociology. (3-0) 3 Credit Hours. (TCCN = SOCI 1301)

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. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences. (Formerly titled "Introduction to the Study of Society.") Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

SOC 1043. Introduction to Public Health. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring. Course Fees: LRLF \$10.

SOC 2013. Social Problems. (3-0) 3 Credit Hours. (TCCN = SOCI 1306)

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. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.

SOC 2023. Social Context of Drug Use. (3-0) 3 Credit Hours. (TCCN = SOCI 2340)

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. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences. (Formerly titled "Drugs in Society.") Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRLF \$10.

SOC 2043. Psychological, Social, and Biological Foundations of Behavior. (3-0) 3 Credit Hours.

In 2015, the Association of American Medical Colleges (AAMC) added a new section to the Medical College Admission Test (MCAT) that focuses on "Psychological, Social, and Biological Foundations of Behavior." According to the AAMC, this new section "tests your understanding of the ways psychological, social, and biological factors influence perceptions and reactions to the world; behavior and behavior change; what people think about themselves and others; the cultural and social differences that influence well-being; and the relationships between social stratification, access to resources, and well-being." This course will examine sociological perspectives and concepts to health outcomes like genetics, mental health, physical health, life style, health care and mortality risk.

SOC 2063. Special Topics in Sociology. (3-0) 3 Credit Hours.

An organized course offering the opportunity for a specialized topic at the lower division level that is available through 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.

SOC 3013. Social Stratification. (3-0) 3 Credit Hours.

Examines theory and research pertaining to inequalities of power, prestige, and economic privilege. Major emphasis upon inequality and social mobility in the United States. Generally offered: Summer.

SOC 3043. Race and Ethnic Relations. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

SOC 3053. Deviance and Difference. (3-0) 3 Credit Hours.

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.

SOC 3063. Collective Behavior. (3-0) 3 Credit Hours.

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.

SOC 3083. Social Change and Development. (3-0) 3 Credit Hours.

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.

SOC 3093. Religion and Society. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

SOC 3113. Criminology. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer.

SOC 3163. Families in Society. (3-0) 3 Credit Hours.

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.") Generally offered: Fall.

SOC 3193. The Sociology of Work and Occupations. (3-0) 3 Credit Hours.

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. Generally offered: Summer.

SOC 3203. Gerontology. (3-0) 3 Credit Hours.

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.

SOC 3213. Medical Sociology. (3-0) 3 Credit Hours.

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. Generally offered: Spring.

SOC 3223. Population Dynamics and Demographic Techniques. (3-0) 3 Credit Hours.

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.") Generally offered: Spring.

SOC 3253. The Individual and Society. (3-0) 3 Credit Hours.

Examines the major theories dealing with the effects of culture and social structure on the development and functioning of the personality and the self.

SOC 3263. Latinas in U.S. Society. (3-0) 3 Credit Hours.

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 familialism; 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.) Generally offered: Spring.

SOC 3283. Poverty. (3-0) 3 Credit Hours.

Examines the causes and consequences of poverty in the United States and selected other societies. An examination of social programs designed to combat poverty. Generally offered: Fall, Spring, Summer.

SOC 3293. Sociology of Gender. (3-0) 3 Credit Hours.

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.")

SOC 3323. Introduction to Social Research. (3-0) 3 Credit Hours.

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.") Generally offered: Fall, Spring.

SOC 3353. Sociological Theory. (3-0) 3 Credit Hours.

Prerequisite: SOC 1013. Begins with an examination of the foundational writings in classical sociological theory with special emphasis on the work of Karl Marx, Emile Durkheim and Max Weber. Contemporary paradigms in sociological theory (e.g., functionalism, neo-Marxism, phenomenology, and feminism), and current debates over the state of theory are then addressed. 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.) Generally offered: Fall, Spring, Summer.

SOC 3373. Qualitative Research Methods. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

SOC 3393. Quantitative Research Methods. (3-0) 3 Credit Hours.

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, cross tabulations, 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.) Generally offered: Fall, Spring.

SOC 3413. Sociology of the Mexican American Community. (3-0) 3 Credit Hours.

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. (Same as MAS 3413. Credit cannot be earned for both MAS 3413 and SOC 3413.) (Formerly titled "Mexican American Family.") Generally offered: Summer.

SOC 3423. Mass Media in Society. (3-0) 3 Credit Hours.

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.

SOC 3433. Mexican Immigration and U.S. Society. (3-0) 3 Credit Hours.

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.

SOC 3463. Sociology of Sport and Leisure. (3-0) 3 Credit Hours.

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.

SOC 3503. Sociology of Education. (3-0) 3 Credit Hours.

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. Generally offered: Summer.

SOC 3543. Data Management in Public Health. (3-0) 3 Credit Hours.

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).

SOC 4023. Violence and Society. (3-0) 3 Credit Hours.

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.) Generally offered: Spring.

SOC 4043. Global Health. (3-0) 3 Credit Hours.

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. Generally offered: Fall.

SOC 4053. Health Care System. (3-0) 3 Credit Hours.

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. Generally offered: Fall.

SOC 4073. Social and Behavioral Theories in Public Health. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

SOC 4083. Behavioral Epidemiology. (3-0) 3 Credit Hours.

Prerequisite: Restricted to upper-division Sociology and Public Health majors. 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.).

SOC 4213. Behavioral Profiling. (3-0) 3 Credit Hours.

Prerequisite: SOC 1013 or PSY 1013. This course is designed to expose students to the process of criminal behavioral profiling, an investigative tool used by law enforcement, criminologists, and forensic scientists to predict the characteristics of unknown subjects through crime scene analysis. This is a unique course and is arranged around the deductive profiling method developed by a few of the more published criminal profilers in the United States. Topics include case assessment, crime scene reconstruction methods, evidence dynamics, victimology, criminal motivation, and ethics.

SOC 4433. Culture and Society. (3-0) 3 Credit Hours.

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.

SOC 4683. Health Disparities. (3-0) 3 Credit Hours.

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. Generally offered: Spring.

SOC 4853. Topics in Sociology. (3-0) 3 Credit Hours.

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).

SOC 4863. Topics in Sociology. (3-0) 3 Credit Hours.

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.

SOC 4911. Independent Study. (0-0) 1 Credit Hour.

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.

SOC 4913. Independent Study. (0-0) 3 Credit Hours.

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.

SOC 4923. Public Health Study Abroad. (0-0) 3 Credit Hours.

The purpose of this course is to provide students greater understanding of global health issues. The study abroad program focuses on health care and public health in different international settings and provides students with a unique opportunity to integrate direct academic learning and field experience in public health. The program involves attending class room lectures in public health and interacting with local public health officials in understanding how health care system is responding to the health needs of its population. This course will satisfy 3 hours of the Public Health Internship requirement under the Sociology degree.

SOC 4926. Public Health Study Abroad. (0-0) 6 Credit Hours.

The purpose of this course is to provide students greater understanding of global health issues. The study abroad program focuses on health care and public health in different international settings and provides students with a unique opportunity to integrate direct academic learning and field experience in public health. The program involves attending class room lectures in public health and interacting with local public health officials in understanding how health care system is responding to the health needs of its population. This course will satisfy 6 hours of the Public Health Internship requirement under the Sociology degree.

SOC 4933. Internship in Sociology. (0-0) 3 Credit Hours.

Prerequisites: Completion of SOC 3353 and either 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. Generally offered: Fall, Spring, Summer.

SOC 4936. Internship in Sociology. (0-0) 6 Credit Hours.

Prerequisites: Completion of SOC 3353 and either 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. Generally offered: Fall, Spring, Summer.

SOC 4993. Honors Thesis. (0-0) 3 Credit Hours.

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. Generally offered: Fall, Spring.

Spanish (SPN)

Spanish (SPN) Courses

SPN 1014. Elementary Spanish I. (3-2) 4 Credit Hours. (TCCN = SPAN 1411)

Fundamentals of Spanish, offering the opportunity to develop listening, speaking, reading, and writing skills. Emphasis on listening and speaking. Introduction to Hispanic culture. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$16; LRLF \$10; MM01 \$7.

SPN 1024. Elementary Spanish II. (3-2) 4 Credit Hours. (TCCN = SPAN 1412)

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. Generally offered: Fall, Spring, Summer. Course Fee: MM01 \$7.

SPN 1034. Spanish for Heritage Learners I. (3-2) 4 Credit Hours.

This course is designed for students who grew up with exposure to Spanish in the home or community. The course builds on the students' existing verbal abilities, knowledge, and experiences, and introduces them to reading texts rich in cultural information as well as meaningful writing tasks. Course Fee: MM01 \$7.

SPN 1013. Intermediate Spanish I. (3-1) 3 Credit Hours. (TCCN = SPAN 2311)

Prerequisite: 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. Generally offered: Fall, Spring, Summer. Course Fees: LRLF \$10; MM01 \$7.

SPN 2023. Intermediate Spanish II. (3-1) 3 Credit Hours. (TCCN = SPAN 2312)

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. Generally offered: Fall, Spring, Summer. Course Fees: LRLF \$10; MM01 \$7.

SPN 2033. Spanish for Heritage Learners II. (3-1) 3 Credit Hours.

This course is a continuation of Spanish for Heritage Learners I. It expands on the students' verbal (aural and oral) skills, with additional opportunities for reading texts rich in formal and informal culture, and writing compositions on related topics. Course Fee: MM01 \$7.

SPN 2333. Hispanic Literature in English Translation. (3-0) 3 Credit Hours.

Prerequisite: WRC 1013 or the equivalent. Major works in Hispanic literatures: themes, genres, and movements. May not be applied to a major in Spanish. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly SPN 3333. Credit cannot be earned for both SPN 2333 and SPN 3333.) Generally offered: Fall. Course Fees: LRC1 \$12; LRLF \$10; MM01 \$7.

SPN 3003. Oral and Written Expression. (3-1) 3 Credit Hours.

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.) Generally offered: Fall, Spring. Course Fee: MM01 \$7.

SPN 3013. Spanish Phonetics and Phonology. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fee: MM01 \$7.

SPN 3033. Oral Communication Skills. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fee: MM01 \$7.

SPN 3043. Introduction to Literature. (3-0) 3 Credit Hours.

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. (Formerly titled "Advanced Reading.") Generally offered: Fall, Spring, Summer. Course Fee: MM01 \$7.

SPN 3063. Grammar and Composition. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fee: MM01 \$7.

SPN 3113. Linguistic Structures of Spanish. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fee: MM01 \$7.

SPN 3413. The Literature of Spain from the Middle Ages to 1700. (3-0) 3 Credit Hours.

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. Generally offered: Spring. Course Fee: MM01 \$7.

SPN 3423. The Literature of Spain from 1700 to the Present. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

SPN 3463. Latin American Literature to Modernism. (3-0) 3 Credit Hours.

Prerequisite: SPN 3043 or consent of instructor. Latin American literature from pre-Columbian times to Modernism. Practice in critical analysis through papers and examinations. Course Fee: MM01 \$7.

SPN 3473. Latin American Literature since Modernism. (3-0) 3 Credit Hours.

Prerequisite: SPN 3043 or consent of instructor. Latin American literature from Modernism to the present. Practice in critical analysis through papers and examinations. Course Fee: MM01 \$7.

SPN 3493. Mexican American Literature. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

SPN 3613. Spanish Culture and Civilization. (3-0) 3 Credit Hours.

Prerequisite: SPN 3043. Emergence of the Spanish peoples from pre-Roman times to the present: history, cultural expression, myths, values, and worldview. Course Fee: MM01 \$7.

SPN 3623. Latin American Culture and Civilization. (3-0) 3 Credit Hours.

Prerequisite: SPN 3043. A study of social, political, and cultural history of the Latin American countries from pre-Columbian civilizations through the Conquest, Colonial period, and Independence to the present, as reflected in its literature and arts. Course Fee: MM01 \$7.

SPN 4003. Advanced Language Skills. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring, Summer. Course Fee: MM01 \$7.

SPN 4113. Topics in Spanish Linguistics. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fee: MM01 \$7.

SPN 4123. The Spanish of the United States. (3-0) 3 Credit Hours.

Prerequisite: SPN 3013, SPN 3113, or consent of instructor. The analysis of the Spanish language as used by native or heritage speakers in the United States, from a linguistic, pragmatic and sociolinguistic perspective. Particular attention given to the Spanish spoken in Texas. Course Fee: MM01 \$7.

SPN 4203. Topics in Hispanic Literatures. (3-0) 3 Credit Hours.

Prerequisite: SPN 3043, 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. Generally offered: Fall, Spring. Course Fee: MM01 \$7.

SPN 4303. Topics in Hispanic Cultures. (3-0) 3 Credit Hours.

Prerequisite: SPN 3043, an upper-division course in literature or culture taught in Spanish, 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. Generally offered: Fall, Spring, Summer. Course Fee: MM01 \$7.

SPN 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

SPN 4933. Internship in Spanish. (0-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

SPN 4953. Special Studies in Spanish. (3-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

SPN 4993. Honors Research. (0-0) 3 Credit Hours.

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. Course Fee: MM01 \$7.

Special Education (SPE)

New Course for Fall 2019

SPE 4681. Ethics in Applied Behavior Analysis Research and Practice. (1-0) 1 Credit hour.

This course provides students with 15 hours of instruction addressing the Behavior Analyst Certification Board's Professional and Ethical Compliance Code (The CODE). Students will learn how to engage in ethical applied behavior analysis (ABA) research and practice through advanced coverage of The CODE. The objective of this course is to demonstrate sound ethical decision making in response to examples of scenarios commonly encountered in ABA research and practice in clinical and educational settings. Prerequisites for this course are SPE 3303 and SPE 3633. Concurrent enrollment or prior completion of SPE 3673 or SPE 4673, and SPE 4683 is required. Prior completion of SPE 4683 is recommended because the current course will provide coverage of content from SPE 4683. May be repeated once for credit. Possible Course Fees: LRH1 \$10; STSH \$5.

Special Education (SPE) Courses

SPE 3303. Applied Behavior Analysis in Early Childhood. (3-0) 3 Credit Hours.

This course provides a basic introduction to applied behavior analysis and the highly beneficial role that it can play in Early Childhood Education for both typically developing children and those with special needs.

The objective of this course is to master the fundamental principles of behavior in preparation for learning to apply these principles in school- and community-based settings that focus on early childhood education and intervention. This course is a prerequisite for SPE 3633, SPE 3673, SPE 4673, and SPE 4683. Course content consists of 45 hours aligned with the BCaBA task list of the Behavior Analyst Certification Board. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

SPE 3603. Introduction to Special Education. (3-0) 3 Credit Hours.

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 titled "Introduction to Exceptionality.") Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$10; STSH \$15.

SPE 3623. Assessment of Students with Mild/Moderate Disabilities. (3-0) 3 Credit Hours.

Prerequisites: SPE 3603, SPE 3633, SPE 3683, SPE 3693, and SPE 4623. Concurrent enrollment in SPE 3653, SPE 4643, and SPE 4683 is required. Restricted course; advisor code required for registration. 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 Clinical Teaching: All level EC-12. Generally offered: Spring. Course Fees: LEA1 \$15; LRH1 \$10; STSH \$15.

SPE 3633. Classroom and Behavior Management for Students with Disabilities. (3-0) 3 Credit Hours.

Prerequisite: SPE 3603. 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. Course content consists of 45 hours aligned with the BCaBA task list of the Behavior Analyst Certification Board. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

SPE 3653. Practicum in Special Education (Mild/Moderate Disabilities). (3-0) 3 Credit Hours.

Prerequisites: SPE 3603, SPE 3633, SPE 3683, SPE 3693, and SPE 4623. Concurrent enrollment in SPE 3623, SPE 4643 and SPE 4683 is required. Restricted course; advisor code required for registration. 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 Clinical Teaching: All Level EC-12. Restricted course; advisor code required for registration. May be repeated for credit. (Same as SPE 5893.) Generally offered: Spring. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

SPE 3673. Assessment: Students with ASD and Developmental Disabilities. (3-0) 3 Credit Hours.

Prerequisites: SPE 3603, SPE 3633, SPE 3683, SPE 3693, and SPE 4623. Concurrent enrollment in SPE 4653, SPE 4673 and SPE 4693 is required. Restricted course; advisor code required for registration. 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. Course content consists of 45 hours aligned with the BCaBA task list of the Behavior Analyst Certification Board. This course must be completed with a grade of "B" or better for it to serve as a prerequisite for C&I 4716 Clinical Teaching: All Level EC-12. Generally offered: Fall. Course Fees: LEA1 \$15; LRH1 \$10; STSH \$15.

SPE 3683. Special Education Across the Lifespan. (3-0) 3 Credit Hours.

Prerequisite: SPE 3603. 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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

SPE 3693. Special Education Law. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

SPE 4623. Mathematics Instruction for Students with Disabilities. (3-0) 3 Credit Hours.

Prerequisite: SPE 3603. 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 Clinical Teaching: All Level EC-12. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

SPE 4643. Instruction for Students with Mild/Moderate Disabilities. (3-0) 3 Credit Hours.

Prerequisites: SPE 3603, SPE 3633, SPE 3683, SPE 3693, and SPE 4623. Concurrent enrollment in SPE 3623, SPE 3653, and SPE 4683 is required. Restricted course; advisor code required for registration. 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 Clinical Teaching: All Level EC-12. Generally offered: Spring. Course Fees: LRH1 \$10; STSH \$15.

SPE 4653. Practicum in Special Education (Moderate/Severe Disabilities). (3-0) 3 Credit Hours.

Prerequisites: SPE 3603, SPE 3633, SPE 3683, SPE 3693, and SPE 4623. Concurrent enrollment in SPE 3673, SPE 4673 and SPE 4693 is required. Restricted course; advisor code required for registration. 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 Clinical Teaching: All Level EC-12. Restricted course; advisor code required for registration. May be repeated for credit. (Same as SPE 5793.) Generally offered: Fall. Course Fees: LRH1 \$10; STF1 \$57; STSH \$15.

SPE 4673. Instruction for Students with Autism Spectrum Disorders and Developmental Disabilities. (3-0) 3 Credit Hours.

Prerequisites: SPE 3603, SPE 3633, SPE 3683, SPE 3693, and SPE 4623. Concurrent enrollment in SPE 3673, SPE 4653 and SPE 4693 is required. Restricted course; advisor code required for registration. 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. Course content consists of 45 hours aligned with the BCaBA task list of the Behavior Analyst Certification Board. This course must be completed with a grade of "B" or better for it to serve as a prerequisite for C&I 4716 Clinical Teaching: All Level EC-12. Generally offered: Fall. Course Fees: LRH1 \$10; STSH \$15.

SPE 4683. Communication and Collaboration in Special Education. (3-0) 3 Credit Hours.

Prerequisites: SPE 3603, SPE 3633, SPE 3683, SPE 3693, and SPE 4623. Concurrent enrollment in SPE 3623, SPE 3653 and SPE 4643 is required. Restricted course; advisor code required for registration. 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. Course content consists of 45 hours aligned with the BCaBA task list of the Behavior Analyst Certification Board. Generally offered: Spring. Course Fees: LRH1 \$10; STSH \$15.

SPE 4693. Assistive Technology. (3-0) 3 Credit Hours.

Prerequisites: SPE 3603, SPE 3633, SPE 3683, SPE 3693, and SPE 4623. Concurrent enrollment in SPE 3673, SPE 4653, and SPE 4673 is required. Restricted course; advisor code required for registration. 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. Generally offered: Fall. Course Fees: LRH1 \$10; STSH \$15.

SPE 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fee: STSH \$15.

Sport, Event, and Tourism Management (SET)

Sport, Event, and Tourism Management (SET) Courses

SET 2123. Survey of Tourism. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring. Course Fees: BISP \$10; BTSI \$15; LRB1 \$15.

SET 3043. Attractions Management. (3-0) 3 Credit Hours.

Prerequisite: SET 2123 or SET 4543. Explores all aspects of managing visitor attractions such as amusement parks, theme parks, museums, national parks, and heritage sites. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

SET 3233. Sport Management. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

SET 3283. Sport and Event Media Relations. (3-0) 3 Credit Hours.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

SET 3313. Sport Tourism and Events. (3-0) 3 Credit Hours.

Prerequisite: SET 2123 or SET 4543. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

SET 3333. Event Management. (3-0) 3 Credit Hours.

Prerequisite: SET 2123 or SET 4543. 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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

SET 3413. Resort and Club Management. (3-0) 3 Credit Hours.

Prerequisite: SET 2123 or SET 4543. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

SET 3433. Meetings and Conventions. (3-0) 3 Credit Hours.

Prerequisite: SET 2123 or SET 4543. An overview of the meetings and conventions industry. The course introduces students to the basics of association and corporate meetings, including program planning, budgeting, marketing, public relations, food and beverage and hospitality planning, audio visual and transportation coordination, exhibit sales and management, contract and lease negotiations, and human resources. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

SET 3543. Sports Economics. (3-0) 3 Credit Hours.

Prerequisite: ECO 2023. This course provides an application of economic theories and principles to the area of sport management. The focus of the course is on the business of professional sports, including competitive balance, player salaries, and the financing of sport facilities. In addition, the course will cover economic issues related to collegiate athletics. (Formerly titled "Economics of Tourism and Leisure.") Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

SET 4233. Sport Facility and Event Management. (3-0) 3 Credit Hours.

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. (Credit cannot be earned for both SET 4233 and FM 4233.) Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

SET 4543. Destination Marketing. (3-0) 3 Credit Hours.

Prerequisites: MKT 3013. 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.) Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

SET 4811. Special Topics in Sport, Event and Tourism Management. (1-0) 1 Credit Hour.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

SET 4812. Special Topics in Sport, Event and Tourism Management. (2-0) 2 Credit Hours.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

SET 4813. Special Topics in Sport, Event and Tourism Management. (3-0) 3 Credit Hours.

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. Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

SET 4921. Independent Study in Sport, Event and Tourism Management. (0-0) 1 Credit Hour.

Prerequisites: Student must have a 3.0 College of Business 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. Course Fees: BISP \$20; BTSI \$15.

SET 4922. Independent Study in Sport, Event and Tourism Management. (0-0) 2 Credit Hours.

Prerequisites: Student must have a 3.0 College of Business 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. Course Fees: BISP \$20; BTSI \$15.

SET 4923. Independent Study in Sport, Event and Tourism Management. (0-0) 3 Credit Hours.

Prerequisites: Student must have a 3.0 College of Business 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. Course Fees: BISP \$20; BTSI \$15.

SET 4941. Internship in Sport, Event and Tourism Management. (0-0) 1 Credit Hour.

Prerequisites: MGT 3003, student must currently have a 2.5 UTSA grade point average, and permission in writing from the sponsoring Tourism instructor, the Department Chair, and the Dean of the College of Business. The course is designed for students seeking supervised full- or part-time work experience in the sport, event or tourism industries. A written report is required. Opportunities and output requirements are developed in consultation with a faculty advisor and the Department Chair, and require the approval of both. 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. Course Fees: BISP \$20; BTSI \$15.

SET 4942. Internship in Sport, Event and Tourism Management. (0-0) 2 Credit Hours.

Prerequisites: MGT 3003, student must currently have a 2.5 UTSA grade point average, and permission in writing from the sponsoring Tourism instructor, the Department Chair, and the Dean of the College of Business. The course is designed for students seeking supervised full- or part-time work experience in the sport, event or tourism industries. A written report is required. Opportunities and output requirements are developed in consultation with a faculty advisor and the Department Chair, and require the approval of both. 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. Course Fees: BISP \$20; BTSI \$15.

SET 4943. Internship in Sport, Event and Tourism Management. (0-0) 3 Credit Hours.

Prerequisites: MGT 3003, student must currently have a 2.5 UTSA grade point average, and permission in writing from the sponsoring Tourism instructor, the Department Chair, and the Dean of the College of Business. The course is designed for students seeking supervised full- or part-time work experience in the sport, event or tourism industries. A written report is required. Opportunities and output requirements are developed in consultation with a faculty advisor and the Department Chair, and require the approval of both. 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. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15.

Statistics (STA)

Statistics (STA) Courses

STA 1053. Basic Statistics. (3-0) 3 Credit Hours. (TCCN = MATH 1342)

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; one-way analysis of variance, and applications of the chi-square distribution. May be applied toward the core curriculum requirement in Mathematics. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$10; BTSI \$15; LRB1 \$15; LRC1 \$12.

STA 1403. Probability and Statistics for the Biosciences. (3-0) 3 Credit Hours.

Prerequisite: A grade of "C-" or better in 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.) Generally offered: Fall, Spring, Summer. Course Fees: BISP \$10; BTSI \$15; LRB1 \$15.

STA 2303. Applied Probability and Statistics for Engineers. (3-0) 3 Credit Hours.

Prerequisite: MAT 1224. Fundamental concepts of probability and statistics with practical applications to engineering problems. Emphasis on statistical distribution models used in reliability and risk analysis of engineering design; probabilistic reasoning; Bayes' theorem; bivariate and multivariate distributions and their applications. Generally offered: Fall, Spring. Course Fees: BISP \$10; BTSI \$15; LRB1 \$15.

STA 3003. Applied Statistics. (3-0) 3 Credit Hours.

Prerequisite: Completion of or concurrent enrollment in MAT 1093, MAT 1133, 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; introduction to analysis of variance and linear regression model. The course will emphasize data analysis and interpretation and effective communication of results through reports or presentations. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 3013. Multivariate Analysis for the Life and Social Sciences. (3-0) 3 Credit Hours.

Prerequisite: STA 3003, STA 3513, or an equivalent. This course emphasizes application of statistics in organizations. Topics include, but are not limited to 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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 3023. Mathematics for Statistics. (3-0) 3 Credit Hours.

Prerequisite: MAT 1224 or an equivalent. This course discusses and reviews the classic mathematical methods and techniques to comprehend the advanced statistical concepts. Concepts include sequences, series, convergence, limit, continuity, derivative, optimization, the fundamental theorem of calculus, methods of integration, Taylor expansions, function of several variables, partial derivatives, and multivariate transformations. Other topics include vector and matrix algebra, determinants, inverse matrix, solving linear equations, orthogonality (projections, least-squares, Gram-Schmidt), eigenvalues and eigenvectors (diagonalization, symmetric/positive definite matrices), and singular value decomposition. (Formerly titled Statistical Mathematics.) Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 3313. Experiments and Sampling. (3-0) 3 Credit Hours.

Prerequisite: One of the following: MS 1023, 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. Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 3333. Introduction to Data Science and Analytics. (3-0) 3 Credit Hours.

Prerequisite: One of the following: MS 1023, STA 1053, STA 1403, STA 2303, or an equivalent. Data science and analytics aim to harness the power of data and statistics for new insights. This course introduces the concepts and principles of data science and analytics through software-aided applications of common statistics-based methods, tools and techniques in various practical case studies. This course also provides students an opportunity to understand the data-driven decision making process, an overview of the data science lifecycle, and the Big Data ecosystem. Topics include popular statistical techniques and algorithms under the current paradigm of analytics (descriptive/diagnostic, predictive/prognostic, and prescriptive/optimization) and machine learning (supervised and unsupervised), applied in a wide variety of fields as demonstrated through case studies. With the application-oriented focus, students will gain hands-on experiences and develop essential skills in discovering, analyzing, visualizing, interpreting data, presenting and communicating results. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 3513. Probability and Statistics. (3-0) 3 Credit Hours.

Prerequisites: STA 3003, and either MAT 1224 or STA 3023. Axiomatic probability; random variables; discrete and continuous distributions; bivariate and multivariate distributions and their applications; mixture distributions; moments and generating functions, bivariate transformations. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 3523. Mathematical Statistics. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 4133. Introduction to Programming and Data Management in SAS. (3-0) 3 Credit Hours.

This course introduces essential programming concepts using the statistical software package SAS (Enterprise Guide and Base SAS) with a focus on data management and the preparation of data for statistical analyses. Topics include reading raw data, creating temporary and permanent datasets, manipulating datasets, data prompts, summarizing data, displaying data using tables, charts, and plots. Conducting basic statistical analyses using the SAS Enterprise Guide and the Base SAS procedures are also discussed with the examples selected from regression analysis, analysis of variance, and categorical analysis. This course also demonstrates how to write, generate, and modify SAS code and procedures within the SAS Enterprise Guide and the Base SAS environments. Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 4143. Data Mining. (3-0) 3 Credit Hours.

Prerequisite: STA 4133 or equivalent. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 4233. Introduction to Programming and Data Management in R. (3-0) 3 Credit Hours.

This course introduces statistical computing and programming using the R language. Topics include preprocessing/manipulating datasets, summarizing/visualizing data, and conducting basic statistical analyses using R. Other topics include writing R functions, object oriented programming, statistical simulation and resampling, interfacing R with other programming language environments such as SQL, Python, C++, and Hadoop. Techniques for efficient programming will be stressed. The concept of high-performance computing (multi-core/parallel-processing) is also demonstrated. (Formerly titled Statistical Applications Using SAS Software.) Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 4643. Introduction to Stochastic Processes. (3-0) 3 Credit Hours.

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. Generally offered: Summer. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 4713. Applied Regression Analysis. (3-0) 3 Credit Hours.

Prerequisite: MS 3313 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. Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 4723. Introduction to the Design of Experiments. (3-0) 3 Credit Hours.

Prerequisite: MS 3313 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 4753. Time-Series Analysis. (3-0) 3 Credit Hours.

Prerequisite: STA 3513 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. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 4803. Statistical Quality Control. (3-0) 3 Credit Hours.

Prerequisite: 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 MS 4363 and MAT 4803. Credit cannot be earned for more than one of the following: STA 4803, MS 4363, or MAT 4803.) Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 4903. Applied Survival Analysis. (3-0) 3 Credit Hours.

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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 4911. Independent Study. (0-0) 1 Credit Hour.

Prerequisites: A 3.0 College of Business grade point average, 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. Course Fees: BISP \$20; BTSI \$15.

STA 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisites: A 3.0 College of Business grade point average, 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. Course Fees: BISP \$20; BTSI \$15.

STA 4933. Internship in Statistics. (0-0) 3 Credit Hours.

Prerequisites: A 2.5 grade UTSA point average, and approval in writing from the instructor, the Department Chair, and the Associate/Assistant Dean of Undergraduate Studies in the College of Business. See academic advisor 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. A written report is required. May be repeated for credit, but not more than 6 semester credit hours will apply to a bachelor's degree. Course Fees: BISP \$20; BTSI \$15.

STA 4953. Special Studies in Statistics. (3-0) 3 Credit Hours.

Prerequisites: Consent of instructor, Department Chair and Dean of the College. 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. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 4961. Actuarial Science Examination Preparation. (1-0) 1 Credit Hour.

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 twice for credit. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 4962. Actuarial Science Examination Preparation. (2-0) 2 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 4963. Actuarial Science Examination Preparation. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: BISP \$20; BTSI \$15; LRB1 \$21.

STA 4993. Honors Thesis. (0-0) 3 Credit Hours.

Prerequisites: STA 3523 and consent of instructor, Department Chair and Dean of the College. Enrollment limited to students applying for Honors in Management Science and Statistics. Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval. Generally offered: Spring. Course Fees: BISP \$20; BTSI \$15.

Theater (THR)

Theater (THR) Courses

THR 1013. Acting I. (3-0) 3 Credit Hours. (TCCN = DRAM 1351)

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Fundamental techniques of acting, emphasizing the actor's approach to characterization and relationship to all parts of the play's production. Generally offered: Fall.

THR 1023. Acting II. (3-0) 3 Credit Hours. (TCCN = DRAM 1352)

Prerequisite: Completion of the Core Curriculum requirement in Language, Philosophy and Culture. Sustained character portrayal. Intensive work in stage movement and vocal techniques, including dialects. Generally offered: Spring.

THR 2113. Intermediate Acting I. (3-0) 3 Credit Hours.

Prerequisites: Completion of THR 1013 and THR 1023, or placement by audition with instructor consent. Concepts, skills, and techniques of acting styles, collaborative work in all aspects of play production, and development of understanding of the actor's role through performance.

THR 2123. Intermediate Acting II. (3-0) 3 Credit Hours.

Prerequisite: Completion of THR 2113, or placement by audition with instructor consent. Continued development of concepts, skills, and techniques of acting styles required to understand the role of the performer in play production.

Translation and Interpreting Studies (TIS)

Translation and Interpreting Studies (TIS) Courses

TIS 3003. Introduction to Translation and Interpreting. (3-0) 3 Credit Hours.

Prerequisite: At least four courses of any single foreign language. Principles of translation or interpreting including practice with a variety of discourse types. Students will be introduced to realities of language mediation professions as well as main concepts in translation and interpreting studies theory. May be repeated for credit when language or focus varies. (Formerly FL 3003.) Course Fee: MM01 \$7.

TIS 3013. Translation and Interpretation for the Language Specialist. (3-0) 3 Credit Hours.

Prerequisite: At least one course at the 3000 level in the selected foreign language. This course will explore the language-related and cultural issues involved in translation and interpretation and will include practice from selected areas, such as business, health care, law, technology, or the arts. May be repeated for credit when topics, languages or foci vary. (Formerly FL 3013.) Course Fee: MM01 \$7.

TIS 4013. Topics in Translation and Interpreting Studies. (3-0) 3 Credit Hours.

Prerequisite: One course in TIS or consent of instructor. This course represents an opportunity to explore translation and interpreting-related topics in depth, including translation and interpreting in specialized domains such as medical and legal settings; translation studies through film; translators and interpreters in fiction; the sociology of translation; or research methods in translation studies. May be repeated for credit when topics vary. Course Fee: MM01 \$7.

UTeachSA (UTE)

UTeachSA (UTE) Courses

UTE 1111. Introduction to STEM Teaching Step 1. (1-0) 1 Credit Hour.

Introduces STEM teaching as a career. Discussions include standards and inquiry-based lesson design and various teaching and behavior management strategies. This course requires fieldwork that allows the student to observe and teach in an elementary classroom. (Credit cannot be earned for both UTE 1111 and GEM 1011.) Generally offered: Fall, Spring.

UTE 1122. Introduction to STEM Teaching Step 2. (2-0) 2 Credit Hours.

Prerequisite: UTE 1111 with a grade of "C-" or better. Further exploration of STEM teaching as a career while building on the knowledge and skills developed in UTE 1111. Emphasis is placed on various teaching methods that are designed to meet instructional goals and learner outcomes. This course requires fieldwork that provides experience observing and teaching in a middle school STEM classroom. Generally offered: Fall, Spring.

UTE 2113. Functions and Modeling. (3-0) 3 Credit Hours.

Prerequisites: MAT 1093 or consent of instructor, and admission to the UTeachSA teacher preparation program. In-depth study of concepts needed to teach secondary school mathematics at various levels. Emphasizes the development of the concept of function, exploring function patterns in data sets, and the connections between the main topics of mathematics associated with a secondary school curriculum. Use of appropriate technology is explored. May not be applied toward the Mathematics Concentration of the B.S. degree in Mathematics. (Same as MAT 2113. Credit cannot be earned for both UTE 2113 and MAT 2113).

UTE 3023. Perspectives on Science and Mathematics. (3-0) 3 Credit Hours.

Prerequisite: MAT 1193, MAT 1214, STA 1053, or consent of instructor. An examination of important episodes in the history of mathematics and science that illustrate the nature of scientific inquiry and convey that scientific and mathematical concepts are not static. Topics may include Galileo's conflict with the Catholic Church, Isaac Newton's formulation of the laws of motion and invention of calculus, Charles Darwin's proposal of the theory of evolution by natural selection, the development of the atomic bomb, and the discovery of the double helix structure of DNA, or others chosen by the instructor. May not be applied toward the Mathematics Concentration of the B.S. degree in Mathematics. (Same as MAT 3023. Credit cannot be earned for both MAT 3023 and UTE 3023. Credit cannot be earned for both UTE 3023 and MAT 4123).

UTE 3043. UTeachSA Research Methods. (3-0) 3 Credit Hours.

Prerequisite: This course is only open to students who are participating in the UTeachSA teacher preparation program. Students design and carry out independent inquiries, which they write up and present in the manner that is common in the scientific community. Inquiries incorporate mathematics and the various science disciplines to solve research problems. (Credit cannot be earned for more both BIO 3043 and UTE 3043).

UTE 3203. Knowing and Learning in Mathematics and Science. (3-0) 3 Credit Hours.

Prerequisite: UTE 1111 with a grade of "C-" or better. May be taken concurrently with UTE 1111 or UTE 1122. Critical examination of issues related to what it means to know and learn in STEM classrooms. Emphasis on psychological foundations of learning, problem solving in STEM utilizing technology, principles of expert and novice understandings of subject matter, implications of high-stakes testing, and foundations of formative and summative assessment.

UTE 3213. Classroom Interactions. (3-0) 3 Credit Hours.

Prerequisites: UTE 1122 and UTE 3203 with grades of "C-" or better. Application of learning theories in STEM instructional settings. Design and implementation of instructional activities informed by students' own understanding of what it means to know and learn mathematics and science, and outcome evaluation on the basis of student artifacts. Opportunities to develop awareness and understanding of equity issues affecting students by examining gender, class, race, culture and other diverse attributes of students and how they impact learning. Includes field experience in a middle or high school classroom.

UTE 4203. Project-Based Instruction. (3-0) 3 Credit Hours.

Prerequisites: UTE 3213 with a grade of "C-" or better, cumulative GPA of 2.5 or higher, and admission to the Teacher Certification Program. Exploration of project-based learning environments and instructional strategies in STEM classrooms. Discussion of the foundations for designing, managing, organizing, and evaluating project-based curricula and processes in middle and high school classrooms. Includes field experience in a middle or high school classroom.

UTE 4646. Clinical Teaching. (0-0) 6 Credit Hours.

Prerequisite: Admission to Teacher Certification Program and the clinical teaching semester, and completion of UTE 1111, UTE 1122, UTE 3203, UTE 3213, UTE 4203, LTED 3773, and ESL 3063 with a grade of "C-" or better. Can lack no more than 6 hours in content subject matter. Individuals must apply to the director of clinical teaching one semester in advance. Full semester of full-day clinical teaching in grades 7–12. 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. (Same as C&I 4646. Credit cannot be earned for both UTE 4646 and C&I 4646).

University College Studies (UCS)

University College Studies (UCS) Courses

UCS 2011. UTSA Engage: A Service-Learning Experience. (1-0) 1 Credit Hour.

Students will be engaged in a minimum of 15 hours of pre-approved, unpaid service in a non-profit or public sector organization in the San Antonio region. Coupled with their service experience will be an online learning environment that will engage students in readings on the nature of service, community engagement, social issues prevalent in the region, and other prompts to engage students in critical thinking and reflection. The service must be performed within the semester that a student is registered. A student may not use another course requirement to complete this credit, it must be an independent experience. A student may repeat the course once for additional credit with the service experience being at a different placement than their previous experience.

UCS 2023. Principles of Recovery and Relapse Prevention. (3-0) 3 Credit Hours.

This course evaluates the knowledge, skills, values, and self-awareness required for addiction recovery, and explores theories of recovery, relapse prevention principles, and general wellness concepts. Required for Center for Collegiate Recovery students; open to all students.

UCS 2033. Personal Career Planning. (3-0) 3 Credit Hours.

This course provides knowledge of career development theories and decision-making models, current national and state-specific labor market trends, and provides career and occupational resources. Course includes opportunities for self-assessment and career assessment results, including interest, personality, values clarification inventories and skills identification as they relate to occupational choices. This course equips students with skills that help them make positive career decisions throughout their education at UTSA and their career trajectory. (Formerly COU 2103. Credit cannot be earned for both UCS 2033 and COU 2103).

UCS 3201. Graduate School Workshop. (1-0) 1 Credit Hour.

This course is designed to help students prepare for admission to graduate school and, particularly, for admission to Ph.D. programs. The course addresses a variety of pertinent topics, such as how one decides whether to attend graduate school, what type of graduate program one should select, how students can improve their chances of being admitted to the programs of their choice, how to choose select specific programs to apply to, how to prepare an effective application, and how to pay for graduate study. The course also will provide students with practical advice for preparing for the GRE. This course may be repeated for credit.

University Peer Mentorship Experience (UPM)

University Peer Mentorship (UPM) Courses

UPM 1000. University Peer Mentorship Experience. (0-0) 0 Credit Hours.

The University Peer Mentorship Experience provides a peer-mentor who will help students navigate campus life at UTSA. Students will have an opportunity to develop a broader understanding of UTSA by participating in programming designed to assist in the academic and social transition from high school to college. This Experience is limited to first- and second-semester freshmen and freshmen transfer students. The Experience is completed during the semester immediately following or prior to completion of AIS 1203.

Urban and Regional Planning (URP)

Urban and Regional Planning (URP) Courses

URP 3123. Introduction to Community and Regional Planning and Urban Design. (3-0) 3 Credit Hours.

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 ARC 4123. Credit cannot be earned for both ARC 4123 and URP 3123.) Course Fees: SAP1 \$25; STSA \$15.

URP 3153. Comparative Urban and Regional Development. (3-0) 3 Credit Hours.

A survey of the origin of the contemporary city and region, current conditions, and future trends. Course Fees: SAP1 \$25; STSA \$15.

URP 3163. Visual Communications for Community and Regional Planning. (3-0) 3 Credit Hours.

Expressing planning data and geographic information in visual terms for land use planning projects. Application of related computer software including GIS. (Formerly ARC 4163. Credit cannot be earned for both ARC 4163 and URP 3163.) Course Fees: SAP1 \$25; STSA \$15.

URP 4113. Urban Project Development. (3-0) 3 Credit Hours.

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. (Formerly ARC 4113. Credit cannot be earned for both ARC 4113 and URP 4113.) Course Fees: SAP1 \$25; STSA \$15.

URP 4123. Sustainable Community Development. (3-0) 3 Credit Hours.

Introduction to land use planning topics including new urbanism, growth management, sustainable infrastructure planning, and LEED Neighborhood Development. Course Fees: SAP1 \$25; STSA \$15.

URP 4213. Urban Planning and Public Health. (3-0) 3 Credit Hours.

Survey of the interdependence of urban planning and public health to include the impact of physical environments on the health and quality of life of people in housing and neighborhoods. Course Fees: SAP1 \$25; STSA \$15.

URP 4913. Independent Study. (0-0) 3 Credit Hours.

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. Course Fees: SAP1 \$25; STSA \$15.

URP 4953. Special Studies in Urban and Regional Planning. (3-0) 3 Credit Hours.

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. Course Fees: SAP1 \$25; STSA \$15.

Women's Studies (WS)

Women's Studies (WS) Courses

WS 2013. Introduction to Women's Studies. (3-0) 3 Credit Hours.

This course introduces students to core concepts and frameworks in women's, gender, and sexuality studies, using interdisciplinary and cross-cultural approaches. Women and gender are studied as socially constructed categories created through institutions such as culture, the law, the media, and globalization. The course will provide students with the tools of critical feminist inquiry to assess how women's lived experiences are shaped by such categories as race, ethnicity, class, nationality, sexuality, and disability. Students will examine theories and analytical concepts that emerge from specific historical periods and social movements. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly WGS 2013. Credit cannot be earned for both WS 2013 and WGS 2013.) Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRH1 \$10; STSH \$15.

WS 2023. Introduction to LGBTQ Studies. (3-0) 3 Credit Hours.

This interdisciplinary course introduces concepts and theories within LGBTQ Studies. Topics include issues related to lesbian, gay, bisexual, transgender, and queer communities. The central focus is to examine, challenge, and destabilize normative conceptualizations and representations of gender and sexuality. This class emphasizes different aspects of LGBTQ studies including history, queer theory, popular culture, media, and literature. Course work centers on complicating notions of queer identity through intersections of race, class, gender, and globalization. May not be repeated for credit. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Course Fees: LRC1 \$12; LRH1 \$10; STSH \$15.

WS 3613. Feminist Research Methodologies. (3-0) 3 Credit Hours.

Rigorous examination of the theory, application, and ethical and epistemological concerns of feminist research. What does it mean to "research as a feminist"? Are there particular ways of producing knowledge as women? Investigating women's issues within and across a range of traditional disciplines—history, arts, humanities, sciences, education, health, economics, law, etc.—the course will engage issues of researcher-subject relationships, representation, and value-driven research, to respond to dominant theories of knowledge production. Generally offered: Spring. Course Fees: LRH1 \$10; STSH \$15.

WS 3953. Special Topics in Women Writers. (3-0) 3 Credit Hours.

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.) Generally offered: Spring. Course Fees: LRH1 \$10; STSH \$15.

WS 4623. Feminist Theories. (3-0) 3 Credit Hours.

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. May be repeated for credit only once when topics vary, but no more than 6 semester credit hours of WS 4623, regardless of cross-listed courses and disciplines, will apply to a bachelor's degree. (Formerly WGS 4623. Credit cannot be earned for both WS 4623 and WGS 4623.) Course Fees: LRH1 \$10; STSH \$15.

WS 4863. Feminism and Globalization. (3-0) 3 Credit Hours.

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. Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

WS 4913. Independent Study. (0-0) 3 Credit Hours.

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.) Course Fees: LRH1 \$10; STSH \$15.

WS 4933. Internship in Women's Studies. (0-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

WS 4953. Special Topics in Women's Studies. (3-0) 3 Credit Hours.

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.) Generally offered: Fall, Spring. Course Fees: LRH1 \$10; STSH \$15.

WS 4973. Seminar in Women's Studies. (3-0) 3 Credit Hours.

Prerequisite: 12 upper-division semester credit hours in Women's Studies. This undergraduate seminar, limited to junior and senior Women's Studies majors and minors, 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. Generally offered: Fall. Course Fees: LRH1 \$10; STSH \$15.

WS 4993. Honors Thesis. (0-0) 3 Credit Hours.

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. Course Fee: STSH \$15.

Writing Program (WRC)

Writing Program (WRC) Courses

WRC 0203. Integrated Reading and Writing. (3-0) 3 Credit Hours.

Integrated Reading and Writing offers students the opportunity to increase reading and writing skills before enrollment in WRC 1013 Freshman Composition I. It affords intensive practice in the writing process, including prewriting, drafting, organization, sentence structure, and use of grammar, spelling, and punctuation. The course also offers practical instruction in strategies for improving critical reading of academic writing, such as determining word meaning; 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 developing study skills. It also introduces synthesis, library research, and documentation. Offered on a credit/no-credit basis, the course does not satisfy any degree requirements. This course may be repeated. Course Fees: LRF1 \$12; STSF \$6; WRC1 \$5.

WRC 1013. Freshman Composition I (Q). (3-0) 3 Credit Hours. (TCCN = ENGL 1301)

Freshman Composition I, an informative writing course, focuses on developing and expressing ideas clearly and effectively. Students learn to communicate with professional and academic audiences through written, oral, and visual methods by means of individual and team projects. Students review principles of the writing process, including planning, organization, development, revision, and editing. They are also introduced to rhetorical techniques and quantitative literacy. Students critically read and analyze primary and secondary texts to use in developing writing skills through practice with summary and paraphrase, analysis, and synthesis of multiple sources. The course offers students opportunities to reflect on their work, engage in library research, and practice ethical decision-making through responsible selection, use, and documentation of sources. This course, or an equivalent, is required to fulfill the Core Curriculum requirement in Communication. Offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRF1 \$12; STSF \$6; WRC1 \$5.

WRC 1023. Freshman Composition II (Q). (3-0) 3 Credit Hours. (TCCN = ENGL 1302)

Prerequisite: WRC 1013. Building on the skills introduced in Freshman Composition I, Freshman Composition II focuses on persuasive communication. The course provides intensive writing practice in the use of logical organization and development to help students express ideas clearly and effectively, orally, visually, and in writing. Students also address varied audiences for different purposes and use different genres (e.g., essay, editorial, proposal). Freshman Composition II continues to develop quantitative literacy skills and to promote ethical decision-making through responsible methods of data gathering and analysis to produce valid arguments based on factual information and effective use of sources, including quantitative data, for support. It also offers students opportunities to reflect on their work. Students may enroll in a discipline-specific section of the course, such as business, communication (documentaries or internet arguments), engineering, environmental issues, quantitative literacy, science/pseudoscience, or social sciences. This course, or an equivalent, is required to fulfill the Core Curriculum requirement in Communication. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRF1 \$12; STSF \$6; WRC1 \$5.

WRC 3013. Writing Strategies for the Pre-law Student. (3-0) 3 Credit Hours.

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. Generally offered: Spring, Summer. Course Fees: LRF1 \$12; STSF \$6; WRC1 \$5.

WRC 4123. Topics in Writing. (3-0) 3 Credit Hours.

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).

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.

Credit for any single Texas Common Course Number (TCCN) can only be transferred as a single UTSA course.

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	BBL 2003
ANTH 2351 - UTSA Acceptable Substitute	BBL 2243
ARAB 1411	ARA 1014
ARAB 1412	ARA 1024
ARAB 2311	ARA 2013
ARAB 2312	ARA 2023
ARCH 1301	ARC 2413
ARCH 1302	ARC 2423
ARCH 1303	ARC 1213
ARCH 1311	ARC 1113
ARTS 1301	ART 1103
ARTS 1303	AHC 1113
ARTS 1304	AHC 1123
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 2356	ART 2313

ASTR 1103	AST 1031
ASTR 1303	AST 1013
ASTR 1304	AST 1033
BCIS 1305	IS 1403
BIOL 1111	ES 1111
BIOL 1113	ES 1121
BIOL 1308	BIO 1233
BIOL 1309	BIO 1243
BIOL 1311	ES 1113
BIOL 1313	ES 1123
BIOL 1322	BIO 2043
BIOL 1406	BIO 1404
BIOL 1407	BIO 1414
BIOL 2101	BIO 2051
BIOL 2102	BIO 2061
BIOL 2120	BIO 1061
BIOL 2301	BIO 2053
BIOL 2302	BIO 2063
BIOL 2316	BIO 2313
BIOL 2320	BIO 1053
CHEM 1111	CHE 1121
CHEM 1112	CHE 1131
CHEM 1311	CHE 1103
CHEM 1312	CHE 1113
CHEM 1405	CHE 1004
CHEM 1407	CHE 1014
CHEM 2123 - UTSA Acceptable Substitute	CHE 2612
CHEM 2323	CHE 2603
CHIN 1411	CHN 1014
CHIN 1412	CHN 1024
CHIN 2311	CHN 2013
CHIN 2312	CHN 2023
COMM 1307	COM 2343
COSC 1336	CS 1083
COSC 1437	CS 1711
COSC 1437	CS 1713
CRIJ 1301	CRJ 1113
CRIJ 1306	CRJ 2813
CRIJ 1307	CRJ 2153
CRIJ 2313	CRJ 2513
CRIJ 2328	CRJ 2213
DANC 2303	DAN 2003
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

Texas Common Course Numbering System

ENGL 2327	ENG 2263	ITAL 2312	ITL 2023
ENGL 2328	ENG 2293	JAPN 1411	JPN 1014
ENGL 2332 - UTSA Acceptable Substitute	CSH 1103	JAPN 1412	JPN 1024
ENGL 2333 - UTSA Acceptable Substitute	CSH 1113	JAPN 2311	JPN 2013
ENGL 2341	ENG 2013	JAPN 2312	JPN 2023
ENGR 1201	EE 1322	KINE 1301	KIN 2303
ENGR 1304	ME 1403	KINE 1338	KIN 2123
ENGR 2301	EGR 2103	KORE 1411	KOR 1014
ENGR 2302	EGR 2513	KORE 1412	KOR 1024
ENGR 2303	EGR 2213	LATI 1411	LAT 1114
ENGR 2304	CS 2073	LATI 1412	LAT 1124
ENGR 2305	EE 2213	LATI 2311	LAT 2113
ENVR 1301	ES 2013	LATI 2312	LAT 2123
ENVR 1302	ES 2023	MATH 1314	MAT 1073
FREN 1411	FRN 1014	MATH 1314 - UTSA Acceptable Substitute	MAT 1023
FREN 1412	FRN 1024	MATH 1324	MAT 1053
FREN 2311	FRN 2013	MATH 1325	MAT 1133
FREN 2312	FRN 2023	MATH 1332	MAT 1043
GEOG 1301	GES 2613	MATH 1342	STA 1053
GEOG 1302	GES 2623	MATH 1350	MAT 1153
GEOG 1303	GES 1023	MATH 1351	MAT 1163
GEOL 1103	GEO 1111	MATH 1442	ES 1314
GEOL 1104	GEO 1131	MATH 2305	CS 2233
GEOL 1105	ES 1211	MATH 2312	MAT 1093
GEOL 1301	GEO 1013	MATH 2313	MAT 1193
GEOL 1303	GEO 1103	MATH 2318	MAT 2233
GEOL 1304	GEO 1123	MATH 2321	EGR 2323
GEOL 1305	ES 1213	MATH 2413	MAT 1214
GERM 1411	GER 1014	MATH 2414	MAT 1224
GERM 1412	GER 1024	MATH 2414	EGR 1324
GERM 2311	GER 2013	MATH 2415	MAT 2214
GERM 2312	GER 2023	MUSI 1181	MUS 1521
GOVT 2304	POL 2533	MUSI 1183	MUS 1531
GOVT 2305	POL 1013	MUSI 1211	MUS 1112
GOVT 2306	POL 1133	MUSI 1212	MUS 1132
GOVT 2306	POL 1213	MUSI 1216	MUS 1102
HIST 1301	HIS 1043	MUSI 1217	MUS 1122
HIST 1302	HIS 1053	MUSI 1303	MUS 2623
HIST 2301	HIS 2053	MUSI 1306	MUS 2683
HIST 2321	HIS 2123	MUSI 1307	MUS 2243
HIST 2322	HIS 2133	MUSI 1310	MUS 2633
HUMA 1301	HUM 2023	MUSI 1310 - UTSA Acceptable Substitute	MUS 2663
HUMA 1302	HUM 2033	MUSI 1310 - UTSA Acceptable Substitute	MUS 2673
HUMA 1305	MAS 2013	MUSI 2211	MUS 2152
HUMA 1311	BBL 2023	MUSI 2212	MUS 2162
HUMA 1311	MAS 2023	MUSI 2216	MUS 2102
HUMA 1315	HUM 2053	MUSI 2217	MUS 2112
HUMA 2319 - UTSA Acceptable Substitute	WS 2013	PHED 1304	HTH 2513
HUMA 2323	CSH 1213	PHED 1346	BIO 1033
ITAL 1411	ITL 1014	PHIL 1301	PHI 2013
ITAL 1412	ITL 1024	PHIL 1304	HUM 2093
ITAL 2311	ITL 2013	PHIL 2303	PHI 1043

PHIL 2303	PHI 2043
PHIL 2316	PHI 2023
PHYS 1101	PHY 1611
PHYS 1102	PHY 1631
PHYS 1301	PHY 1603
PHYS 1302	PHY 1623
PHYS 1310	PHY 1013
PHYS 2325	PHY 1943
PHYS 2326	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
SOCI 1301	SOC 1013
SOCI 1301 - UTSA Acceptable Substitute	IDS 2113
SOCI 1306	SOC 2013
SOCI 2320 - UTSA Acceptable Substitute	BBL 2033
SOCI 2340	SOC 2023
SPAN 1411	SPN 1014
SPAN 1412	SPN 1024
SPAN 2311	SPN 2013
SPAN 2312	SPN 2023
HUMA 1311 SPAN 2324 - UTSA Acceptable Substitute	BBL 2023
SPCH 1311	COM 1043
SPCH 1315	COM 2113
SPCH 1321	COM 1053
SPCH 1321	COM 1063
TECA 1318	HTH 2133

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 prior learning experiences such as, the Advanced Placement (AP) program (p. 478), College Level Examination Program (CLEP) (p. 479), Competency Based Exams (CBE) (p. 480), Dantes (DSST) (p. 481), International Baccalaureate Diploma (IBD) (p. 481), International Baccalaureate Certificate (IBC) (p. 483), and SAT Subject Tests (p. 484). 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, 2018. These scores and course credits are subject to change without notice. For more information regarding credit by examination, please review the AP, CLEP, CBE, DSST, and IB information on the Testing Services website (<http://www.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 ¹
AP Capstone	AP Seminar and AP Research	3	AIS 1203 ²
	AP Seminar and AP Research	3	WRC 1013 ³
Art	Art History	3	AHC elective, 3 hours (lower division)
	Studio Art: 2D Design	3	ART 1003
	Studio Art: 3D Design	3	ART 1013
	Studio Art: Drawing	3	ART 1213
Biology	Biology	3 or 4	BIO 1233, BIO 1243
	Biology	5	BIO 1404, BIO 1414
Chemistry	Chemistry	3	CHE 1004, CHE 1073
	Chemistry	4	CHE 1103, CHE 1121 (lab), CHE 1143
	Chemistry	5	CHE 1113, CHE 1131 (lab), CHE 1153
	Chemistry	5	CHE 1113, CHE 1131 (lab), CHE 1153

Chinese	Chinese Language and Culture	2	CHN 1014, CHN 1024
		3	CHN 1014, CHN 1024, CHN 2013, CHN 2023
Computer Science	Computer Science A	3	CS 1063, CS 1083
Economics	Macroeconomics	3	ECO 2013
	Microeconomics	3	ECO 2023
English	English Language and Composition	3	WRC 1013
	English Literature & Composition	3	ENG 2013
Environmental Science	Environmental Science	3	ES 2013, ES 2023
French	French Language and Culture	2	FRN 1014, FRN 1024
		3	FRN 1014, FRN 1024, FRN 2013, FRN 2023, FRN 3023
Geography	Human Geography	3	GES elective, 3 hours (lower division)
		4	GER 1014, GER 1024, GER 2013, GER 2023
German	German Language and Culture	2	GER 1014, GER 1024
		3	GER 1014, GER 1024, GER 2013, GER 2023
		5	GER 1014, GER 1024, GER 2013, GER 2023, GER 3023, and GER electives, 6 hours (upper division)
History	United States History	3	HIS 1043, HIS 1053
	European History	3	HIS 2563
	World History	3	HIS 2123 or HIS 2133 ⁴
Italian	Italian Language and Culture	2	ITL 1014, ITL 1024

		3	ITL 1014, ITL 1024, ITL 2013, ITL 2023
Japanese	Japanese Language and Culture	2	JPN 1014, JPN 1024
		3	JPN 1014, JPN 1024, JPN 2013, JPN 2023
Latin	Latin	3	LAT 1114
Mathematics	Calculus AB	3	MAT 1214 or MAT 1193 ⁵
	Calculus BC	3	MAT 1214 or MAT 1193 ⁵
	Calculus BC	4 or 5	MAT 1224
Physics	Physics 1: Algebra Based	3	PHY 1603
	Physics 2: Algebra Based	3	PHY 1623
	Physics C		
	a. Mechanics	3	PHY 1943
	b. Electricity & Magnetism	3	PHY 1963
Political Science	Comparative Government & Politics	3	GLA 2633 or POL 2633
	Government & Politics US	3	POL 1013 ⁶
Psychology	Psychology	3	PSY 1013
Spanish	Spanish Language and Culture	2	SPN 1014, SPN 1024
		3	SPN 1014, SPN 1024, SPN 2013, SPN 2023
		4	SPN 1014, SPN 1024, SPN 2013, SPN 2023, and SPN elective, 3 hours (upper division)
	Spanish Literature and Culture	3	SPN Literature elective, 3 hours (upper division)
Statistics	Statistics	3	STA 1053

¹ All credit shown in this table as elective credit is lower division unless otherwise indicated.

² Students must earn a minimum score of "3" on both the AP Seminar and Research sections in order to receive credit for Academic Inquiry and Scholarship (AIS 1203).

³ Student must earn at least the AP Seminar and Research Certificate, submit a portfolio, with a reflective self-analysis for possible credit for WRC 1013.

⁴ Credit will be awarded for either HIS 2123 or HIS 2133, but not for both.

⁵ Credit will be awarded for either MAT 1193 or MAT 1214, but not for both.

⁶ This credit is earned after completion of POL 1133 Texas Politics and Society (available as a Competency Based Exam—see chart below for requirements). 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 ¹
Biology	Biology	65	BIO 1233, BIO 1243
	Natural Sciences	65	BIO elective, 3 hours (lower division)
Business	Financial Accounting	50	ACC 2013
	Introductory Business Law	50	BLW 3013
	Principles of Management	50	MGT 3013
	Principles of Marketing	50	MKT 3013
Chemistry	Chemistry	58	CHE 1103, CHE 1121 (lab)
		68	CHE 1103, CHE 1121 (lab), CHE 1113, CHE 1131 (lab)
Computer Science ²	Information Systems	60	CS 1033
		50	IS 3003
Economics	Principles of Macroeconomics	50	ECO 2013
	Principles of Microeconomics	50	ECO 2023
English	College Composition Modular with Essay	50 ³	WRC 1013
		63 ³	WRC 1013, WRC 1023
	American Literature	63	ENG 2263, ENG 2293
	English Literature	63	ENG 2223, ENG 2233
	Analyzing and Interpreting Literature	63	ENG 2013
	with Essay	63 ⁴	ENG 2213
French	French Language	43	FRN 1014
		50	FRN 1014, FRN 1024

		56	FRN 1014, FRN 1024, FRN 2013
		62	FRN 1014, FRN 1024, FRN 2013, FRN 2023
German	German Language	43	GER 1014
		50	GER 1014, GER 1024
		56	GER 1014, GER 1024, GER 2013
		63	GER 1014, GER 1024, GER 2013, GER 2023
History	History of the United States I	50	HIS 1043
	History of the United States II	50	HIS 1053
	Western Civilization I: Ancient Near East to 1648	50	HIS 2563 ⁵
	Western Civilization II: 1648 to the Present	50	HIS 2563 ⁵
Kinesiology, Health and Nutrition	Human Growth and Development	50	HTH 3543
Mathematics	College Mathematics	50	MAT elective, 3 hours (lower division)
	College Algebra	50	MAT 1073
	Precalculus	50	MAT 1093
	Calculus	50	MAT 1214
Philosophy & Classics	Humanities	50	HUM 2023
Political Science	American Government	50	POL 1013 ⁶
Psychology	Introductory Psychology	50	PSY 1013
Sociology	Introductory Sociology	50	SOC 1013
Spanish	Spanish Language	43	SPN 1014
		50	SPN 1014, SPN 1024
		58	SPN 1014, SPN 1024, SPN 2013

- 66 SPN 1014,
SPN 1024,
SPN 2013,
SPN 2023
- All credit shown in this table as elective credit is lower division unless otherwise indicated.
 - This examination is the same for both credit granting areas. The score determines which credit is awarded. Credit cannot be awarded for both IS and CS. Students having earned course credit for IS 3003 cannot earn test credit for CS 1033.
 - With "pass" on essay scored by Writing Program faculty.
 - With "pass" on essay scored by English Department faculty.
 - Credit will be awarded for Western Civilization I or Western Civilization II, 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.

Competency Based Exams (CBE)

Students who take and successfully pass a departmentally created Competency Based Exam will receive credit in the course for which the exam was taken. The grade of "CR" will not be included in the UTSA grade point average, but the hours for the course will contribute to overall hours taken and count toward the minimum UTSA residence requirements.

Subject	Test Used	Minimum Score Required for UTSA Credit	UTSA Credit Awarded ¹
Computer Science	Departmental Exam	Credit/No Credit	CS 3343
		Credit/No Credit	CS 3723
		Credit/No Credit	CS 3733
		Credit/No Credit	CS 3853
English	Writing Portfolio ²	Credit/No Credit	WRC 1013
		Credit/No Credit	WRC 1023
Information Systems	IS 1403 Test Out Series	70% Cumulative over 4 Exam Modules	IS 1403
Mathematics	College Algebra with Applications	70%	MAT 1023
	College Algebra for Scientists & Engineers	70%	MAT 1073
Political Science	Texas Politics & Society ³	10 out of 20 with 5 on AP American Government or an "A" in POL 1013 or equivalent course	POL 1133

12 out of 20 with 4 on AP American Government or a "B" in POL 1013 or equivalent course

POL 1133

15 out of 20 with 3 on AP American Government or a "C" in POL 1013 or equivalent course

POL 1133

- ¹ All credit shown in this table as elective credit is lower division unless otherwise indicated.
- ² Specific requirements must be met prior to attempting the Competency Portfolio Option including: a) Student must be a Junior or Senior who has written papers for their major/degree requirements; and b) Student has not been able to register for Freshman Composition I or II. Contact the Writing Program at 210-458-5363 for further details.
- ³ Students must be eligible for credit for AP American Government or have college credit for POL 1013 Introduction to American Politics or equivalent course prior to attempting the Competency Exam. Students must meet the AP score or college course credit grade requirements. Students must have an AP score of 3-5 or college credit for POL 1013 or equivalent course with a grade of "A," "B," or "C". Students who do not meet the required AP scores or grades will not be eligible to take the Competency Exam. Passing of the exam is determined on a sliding scale in accordance with AP score and or letter grade.

Dantes Subject Standardized Test (DSST)

Subject	Test Used	Minimum Score Required for UTSA Credit	UTSA Credit Awarded ¹
Anthropology	General Anthropology	400	ANT 1013
Astronomy	Astronomy	400	AST 1013
Biology	Substance Abuse	400	BIO 1033
Business	Business Ethics & Society	425	GBA 2013
	Business Mathematics	400	MAT elective, 3 hours (lower division)
	Human Resource Management	425	MGT 3613
	Introduction to Business	425	MGT 3013
	Money and Banking	400	FIN 3313
	Organizational Behavior	425	MGT 3023
	Principles of Finance	400	FIN 3013
	Principles of Supervision	425	MGT 3023, MGT 4923

Computer Science	Computing and Information Technology	420	CS 1033
Criminal Justice	Criminal Justice	400	CRJ 1113
	Introduction to Law Enforcement	400	CRJ 2213
English	Technical Writing	400	ENG 2413
Environmental Science	Environmental Science	400	ES 2013
Geography	Human Cultural Geography	400	GES 2623
Health	Health & Human Development	400	HTH 2513
History	The Civil War & Reconstruction	400	HIS 3553
	History of the Soviet Union	400	HIS 3753
Humanities	Introduction to World Religions	410	HUM 2093
Information Systems & Cyber Security	Fundamentals of Cybersecurity	400	IS 1001
	Management Information Systems	400	IS 3003
Mathematics	Fundamentals of College Algebra	400	MAT 1023
	Math for Liberal Arts	400	MAT 1043
Philosophy	Ethics in America	434	PHI 3213
Psychology	Lifespan Developmental Psychology	400	PSY 2503

- ¹ All credit shown in this table as elective credit is lower division unless otherwise indicated.

International Baccalaureate Diploma Examination (IBD)

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 (SL) and higher level (HL) International Baccalaureate Diploma examinations is available below or on the Testing Services website at <http://testing.utsa.edu>.

Examination	UTSA Course	Minimum Score Required
College of Business		
Business/Management HL	ACC 2003	4
	MGT 3013	4
	MKT 3013	4
Economics HL	ECO 2013, ECO 2023	4

College of Education & Human Development		
Sports, Exercise & Health Science SL	KIN 2303	4
College of Liberal & Fine Arts		
Social & Cultural Anthropology HL	ANT 2053	4
Arabic Language B HL	ARA 1014, ARA 1024	4
	ARA 1014, ARA 1024, ARA 2013, ARA 2023	5
Arabic Language AB or B SL	ARA 1014, ARA 1024	4
Chinese Language B HL	CHN 1014, CHN 1024	4
	CHN 1014, CHN 1024, CHN 2013, CHN 2023	5
Classical Languages HL	GRK 1114 or LAT 1114 ¹	4
English A Literature SL/HL	ENG 2013	4
English A Language & Literature SL/HL	ENG 2013	4
French Language B HL	FRN 1014, FRN 1024	2
	FRN 1014, FRN 1024, FRN 2013	3
	FRN 1014, FRN 1024, FRN 2013, FRN 2023, & 6 hours (upper division)	4
	FRN 1014, FRN 1024, FRN 2013, FRN 2023, & 9 hours (upper division)	6
French Language B SL	FRN 1014, FRN 1024	4
Geography SL/HL	GES 1023, GES 3123, GES 3133, GES 3213, GES 3633, & POL 3463	4
Global Politics SL/HL	GLA 2603 or POL 2603 ²	4
German Language B HL	GER 1014, GER 1024	2
	GER 1014, GER 1024, GER 2013	3
	GER 1014, GER 1024, GER 2013, GER 2023, & 6 hours (upper division)	4
	GER 1014, GER 1024, GER 2013, GER 2023, & 9 hours (upper division)	6
German Language AB SL	GER 1014	4
German Language B SL	GER 1014, GER 1024	4

History HL	HIS 2133	6
Italian Language B HL	ITL 1014, ITL 1024	2
	ITL 1014, ITL 1024, ITL 2013	3
	ITL 1014, ITL 1024, ITL 2013, ITL 2023, & 6 hours (upper division)	4
Italian Language B SL	ITL 1014, ITL 1024	4
Japanese Language B HL	JPN 1014, JPN 1024	4
	JPN 1014, JPN 1024, JPN 2013, JPN 2023	5
Japanese Language AB or B SL	JPN 1014, JPN 1024	4
Music HL	MUS 2243	4
Philosophy HL	PHI 2013	4
Psychology SL/HL	PSY 1013	4
Russian Language B HL	RUS 1014, RUS 1024, RUS 2013, RUS 2023, & 6 hours (upper division)	4
Russian Language AB or B SL	RUS 1014, RUS 1024	4
Spanish Language B HL	SPN 1014, SPN 1024	2
	SPN 1014, SPN 1024, SPN 2013	3
	SPN 1014, SPN 1024, SPN 2013, SPN 2023	4
Spanish Language AB or B SL	SPN 1014, SPN 1024	4
Theater SL/HL	THR 1013	4
College of Science		
Biology SL/HL	BIO 1233, BIO 1243	4
	BIO 1404, BIO 1414	6
Chemistry HL	CHE 1103, CHE 1113	4
Chemistry SL	CHE 1103, CHE 1113	4
Computer Science SL	CS 1083	5
Computer Science HL	CS 1083, CS 1713, CS 1711	5
Environmental Systems and Societies SL	ES 2013, ES 2023, ES 2021, ES 2031	4
Mathematics HL	MAT 1093, MAT 1214 ³	4
Physics HL	PHY 1603, PHY 1623	4

¹ Credit will be awarded for either GRK 1114 or LAT 1114, but not for both.

² Credit will be awarded for either GLA 2603 or POL 2603, but not for both.

³ It is recommended for students who have met the score requirements for IB Mathematics HL, and are eligible for course credit to contact the Math Department prior to registering for MAT 1224 Calculus II.

International Baccalaureate Certificate Examination (IBC)

International Baccalaureate Certificate students can currently receive the following course credit for the higher level (HL) exams if they meet the score criteria listed on the table below, also available on the Testing Services website at <http://testing.utsa.edu>.

Examination	UTSA Course	Minimum Score Required
College of Business		
Business/Management HL	MKT 3013	4
	MGT 3013	4
Economics HL	ECO 2013, ECO 2023	4
College of Liberal & Fine Arts		
Social and Cultural Anthropology HL	ANT 2053	6
Arabic Language B HL	ARA 1014, ARA 1024, ARA 2013, ARA 2023	5
Chinese Language B HL	CHN 1014, CHN 1024	4
	CHN 1014, CHN 1024, CHN 2013, CHN 2023	5
Classical Languages HL	LAT 1114	5
English Language A - Literature HL	ENG 2013	4
English Language A - Language & Literature HL	ENG 2013	4
French Language B HL	FRN 1014, FRN 1024	2
	FRN 1014, FRN 1024, FRN 2013	3
	FRN 1014, FRN 1024, FRN 2013, FRN 2023	4
	FRN 1014, FRN 1024, FRN 2013, FRN 2023 & 6 hours upper division	5
	FRN 1014, FRN 1024, FRN 2013, FRN 2023 & 9 hours upper division	6
	FRN 1014, FRN 1024, FRN 2013, FRN 2023 & 9 hours upper division	6
Geography HL	GES 1023, GES 3213, GES 3633, POL 3463	5
German Language B HL	GER 1014, GER 1024	2
	GER 1014, GER 1024, GER 2013	3
	GER 1014, GER 1024, GER 2013, GER 2023	4
	GER 1014, GER 1024, GER 2013, GER 2023 & 6 hours upper division	5

GER 1014, GER 1024, GER 2013, GER 2023 & 9 hours upper division

History HL	HIS 2133	6
Global Politics HL	GLA 1013 or POL 2603 ¹	4
	ITL 1014, ITL 1024, ITL 2013	3
Italian Language B HL	ITL 1014, ITL 1024, ITL 2013, ITL 2023	4
	ITL 1014, ITL 1024, ITL 2013, ITL 2023 & 6 hours upper division	5
	ITL 1014, ITL 1024, ITL 2013, ITL 2023 & 9 hours upper division	6
Japanese Language B HL	JPN 1014, JPN 1024	2
	JPN 1014, JPN 1024, JPN 2013	3
	JPN 1014, JPN 1024, JPN 2013, JPN 2023	4
	JPN 1014, JPN 1024, JPN 2013, JPN 2023 & 6 hours upper division	5
Music HL	JPN 1014, JPN 1024, JPN 2013, JPN 2023 & 9 hours upper division	6
	MUS 2243	4
	PHI 2013	5
Philosophy HL	PHI 2013	5
Psychology HL	PSY 1013	5
Russian Language B HL	RUS 1014, RUS 1024	2
	RUS 1014, RUS 1024, RUS 2013	3
	RUS 1014, RUS 1024, RUS 2013, RUS 2023	4
	RUS 1014, RUS 1024, RUS 2013, RUS 2023 & 6 hours upper division	5
Spanish Language B HL	RUS 1014, RUS 1024, RUS 2013, RUS 2023 & 9 hours upper division	6
	SPN 1014, SPN 1024	2
	SPN 1014, SPN 1024, SPN 2013	3
Spanish Language B HL	SPN 1014, SPN 1024, SPN 2013, SPN 2023	4
	SPN 1014, SPN 1024, SPN 2013, SPN 2023 & 6 hours upper division	5
	SPN 1014, SPN 1024, SPN 2013, SPN 2023 & 6 hours upper division	5

	SPN 1014, SPN 1024, 6 SPN 2013, SPN 2023 & 9 hours upper division	
Theatre HL	THR 1013	4
College of Sciences		
Biology HL	BIO 1233, BIO 1243	4
	BIO 1404, BIO 1414	6
Chemistry HL	CHE 1103, CHE 1113	5
Computer Science HL	CS 1083, CS 1713, CS 1711	5
Mathematics HL	MAT 1093, MAT 1214 ²	4
Physics HL	PHY 1603, PHY 1623	4

¹ Credit will be awarded for either GLA 1013 or POL 2603, but not for both.

² It is recommended for students who have met the score requirements for IB Mathematics HL, and are eligible for course credit to contact the Math Department prior to registering for MAT 1224 Calculus II.

SAT[®] Subject Tests

Subject	Test Used	Minimum Score Required for UTSA Credit	UTSA Credit Awarded ¹
Biology	Biology - Molecular	700	BIO 1404
	Biology - Ecological	700	BIO 1414
Chemistry	Chemistry	750	CHE 1103, CHE 1113
Philosophy & Classics	Latin	700	LAT 1114

¹ All credit shown in this table as elective credit is lower division unless otherwise indicated.

Faculty

Academic Inquiry and Scholarship

Name	Title	Education
Colorado-Burt, Susan	Lecturer II	B.S., University of Wisconsin-Madison; Ed.D., The University of Texas at San Antonio
Gibbons, Robert	Lecturer III	B.A., Brigham Young University; M.D., University of Colorado School of Medicine; M.P.H., Uniformed Services University of the Health Sciences
Kainer, John	Lecturer II	B.S., Ph.D., Texas A&M University
Laborde, Kathleen	Lecturer III	B.A., Trinity University; M.B.A., Our Lady of the Lake University; Ed.D., The University of Texas at San Antonio
Leveridge, Tinney	Lecturer III	B.S., Texas State University; M.A., The University of Texas at San Antonio; Ph.D., Texas Woman's University
Rodriguez, Paul	Lecturer III	B.A., M.Ed., University of Notre Dame; Ed.D., The University of Texas at San Antonio
Sands, Yvette Newton	Lecturer II	B.B.A., University of Georgia; M.S.B.E., University of North Carolina

College of Architecture, Construction and Planning

Name	Title	Education
Architecture		
Alexander, John	Associate Professor	B.Arch., University of Detroit; M.Arch. History, Ph.D. University of Virginia
Araiza, Armando	Lecturer III	B.Arch., The University of Texas at San Antonio; M.A., Pratt Institute
Baron, Robert	Professor	B.Arch., University of Oregon, M.Arch., University of Washington; M.S.Arch., University of Pennsylvania
Blizard, Mark	Associate Professor	B.Arch., M.Arch., Virginia Polytechnic Institute and State University
Blount, Craig	Senior Lecturer	B.Arch., The University of Texas at Austin
Burian, Edward R.	Professor	B.Arch., University of Southern California, Los Angeles; M.Arch., Yale University
Caine, Ian	Associate Professor	B.A., M.Arch., Washington University; M.S., Massachusetts Institute of Technology

Canizaro, Vincent B.	Associate Professor	B.E.D., Texas A&M University; M.Arch., University of California, Berkeley; Ph.D., Texas A&M University
Dawes, James	Lecturer III	B.Arch., The University of Texas at Austin
Diego, Analy	Adjunct Assistant Professor	B.S., M.Arch., The University of Texas at San Antonio
Doganer, Sedef	Associate Professor	B.Arch., M.S., Ph.D., Istanbul Technical University
Dupont, William	Professor	San Antonio Conservation Society, Endowed Professorship; A.B., Brown University; M.Arch., University of Pennsylvania
Fish, Curtis	Lecturer III	B.A., B.S., M.Arch., The University of Texas at San Antonio
Gribou, Julius M.	Professor	B. Design, University of Florida, Gainesville; M.Arch., University of Illinois at Urbana-Champaign
Hays, Diane B.	Senior Lecturer	B.S., M.Arch., The University of Texas at Austin
Lewis, James Rick	Assistant Professor in Practice	B.Arch., Texas Tech University; M.Arch., The University of Texas at Austin
Lombardi, Angela	Associate Professor	B.A., M.Arch., Ph.D., University of Rome
Matiella, David	Lecturer I	B.S., M.Arch., The University of Texas at San Antonio
Mears, Buddy	Adjunct Assistant Professor	B.A., M. Arch., Harvard University
Murphy, Jr., John D.	Professor	B.S., M.S., Ph.D., Texas A&M University
Nishimoto, Taeg	Professor	B.Arch., Waseda University, Tokyo, Japan; M.Arch., Cornell University
Norouzi, Neda	Adjunct Assistant Professor	M.Arch., M. Urban Regional Planning, University of Colorado; Ph.D., Virginia Tech
Ohlenbusch, Darryl	Lecturer III	B.E.D., Texas A&M University; M. Arch., Columbia University
Pemberton-Haugh, Sue Ann	Assistant Professor in Practice	B.E.D., M.Arch., Texas A&M University
Petrov, Antonio	Associate Professor	M.Arch. and Urban Design, University of Applied Sciences Koblenz, Germany; M.Arch., Illinois Institute of Technology; D.Des., Harvard University Graduate School of Design
Rashed-Ali, Hazem	Associate Professor	B.S., Ain Shams University, Cairo; M.S., Oxford Brookes University School of Architecture; Ph.D., Texas A&M University
Roff, Shelley	Associate Professor	B.E.D., Texas A&M University; M.Arch., University of California, Berkeley; Ph.D., Brown University

Faculty

Rogers, Candid W.	Lecturer III	B.A., M.Arch., The University of Texas at Austin
Suk, Jae-Yong	Assistant Professor	B. Engineering, Ajou University; M. Building Science, Ph.D., University of Southern California
Tangum, Richard R.	Professor	B.Arch., Texas Tech University; M. Arch., Virginia Polytechnic Institute; D.E.D., Texas A&M University
Temple, Stephen A.	Associate Professor	B.Arch., Carnegie Mellon University; M.S.Arch. Studies, The University of Texas at Austin
Toker-Beeson, Saadet	Associate Professor	B.Arch., M.S., Ph.D., Middle East Technical University, Ankara, Turkey

Construction Science

Benjamin, David P.	Adjunct Assistant Professor	J.D., Southern Methodist University
Escobar, Arnolndo	Adjunct Assistant Professor	M.S., The University of Texas at Arlington
Freund, Matthew	Adjunct Assistant Professor	M.S., The University of Texas at Austin
Galvan Jr., Alfredo D.	Adjunct Assistant Professor	M.B.A., The University of Texas at San Antonio
Gunhan, Suat	Associate Professor	B.Arch., M.S., Dokuz Eylul University; Ph.D., Illinois Institute of Technology
Hatipkarasulu, G. Selen	Senior Lecturer	B.S., Cukurova University; M.S., Ph.D., Louisiana State University
Hatipkarasulu, Yilmaz	Associate Professor	B.S., Cukurova University; M.S., Ph.D., Louisiana State University
Langar, Sandeep	Assistant Professor	Ph.D., Virginia Polytechnic Institute and State University
Palomera-Arias, Rogelio	Assistant Professor	B.S., University of Puerto Rico; M.S., Ph.D., Massachusetts Institute of Technology
Patin, Jude W. P.	Senior Lecturer	B.S., Southern University, B.S., Louisiana State University, M.S., Arizona State University
Schmidt, Charles	Adjunct Assistant Professor	B.S., The University of Texas at Austin
Sulbaran, Tulio	Professor	Ph.d., Georgia Institute of Technology
Trahan, Gabriel	Senior Lecturer	B.A., M.B.A., University of New Orleans; Ph.D., Louisiana State University

College of Business

Name	Title	Education
Lengel, Robert H.	Associate Professor Emeritus	B.S., Pennsylvania State University; M.B.A., M.S., Rensselaer Polytechnic Institute; Ph.D., Texas A&M University

Lengnick-Hall, Cynthia	Professor Emerita	B.A., M.B.A., University of California, Los Angeles; Ph.D., The University of Texas at Austin
Lengnick-Hall, Mark	Professor Emeritus	B.B.A., M.B.A., The University of Texas at Austin; Ph.D., Purdue University
Rao, V. Srinivasan	Professor Emeritus	B.Tech., Indian Institute of Technology, Madras; M.S., Colorado School of Mines; Ph.D., The University of Texas at Austin
Saegert, Joel G.	Professor Emeritus	B.A., Ph.D., The University of Texas at Austin
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Faculty

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College of Education and Human Development

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Interdisciplinary Learning and Teaching

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Kinesiology, Health, and Nutrition

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Women's Studies Program

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College of Engineering

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Biomedical Engineering

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Mechanical Engineering

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College of Liberal and Fine Arts

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