



**UNDERGRADUATE  
CATALOG**

**2022–2024**

The University of Texas at San Antonio™

June 2022

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# UNDERGRADUATE CATALOG

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## 2022–2024

### The University of Texas at San Antonio

Published June 1, 2022

The online version of The University of Texas at San Antonio Undergraduate Catalog is the official version. This catalog was last updated on November 14, 2023 (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 *UTSA Student Policies* for additional policies, procedures, and information directly related to their enrollment at UTSA.

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November 14, 2023: Added priority deadline for applying for graduation (p. 14).

November 10, 2023: Added TCCNs to the Core Curriculum (p. 7) pages.

August 24, 2023: Added the Certificate in Computer Programming for Engineers (p. 132) in the Klesse College of Engineering and Integrated Design

August 16, 2023: Added the B.S. in Nutrition and Health degree (p. 153) in the College for Health, Community, and Policy.

July 27, 2023: Added the Bachelor of Social Work degree (p. 188) in the College for Health, Community, and Policy.

July 21, 2023: Updated Courses from an Institution Undergoing Accreditation or a Nonaccredited Institution (p. 11).

June 28, 2023: Added the B.B.A. in Human Resources Management (<http://catalog.utsa.edu/undergraduate/htt/undergraduate/business/management/#degreestext>) in the Alvarez College of Business.

June 15, 2023: Admission to the Multicultural Early Childhood Development program (p. 86) ended June 1, 2023.

Dec. 1, 2022: Added the Digital Communication Concentration (p. 216) to the B.A. degree in Communication Online in the Department of Communication.

Oct. 31, 2022: Added the Nutrition for Health Professionals Certificate (p. 158) in the College for Health, Community, and Policy.

# 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](http://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.

## Institutional Accreditation

The University of Texas at San Antonio is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award baccalaureate, master's, and doctoral degrees. Questions about the accreditation of The University of Texas at San Antonio may be directed in writing to the Southern Association of Colleges and Schools Commission on Colleges at 1866 Southern Lane, Decatur, GA 30033-4097, by calling (404) 679-4500, or by using information available on SACSCOC's website ([www.sacscoc.org](http://www.sacscoc.org) (<https://www.sacscoc.org/>)).

## 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* 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

The University of Texas at San Antonio recognizes that academic advising is an essential and critical component of our students' educational experience and success. Academic Advising is a partnership between students and academic advisors. Every student is assigned a professional academic advisor to guide them through their journey at UTSA. Advisors engage students in their educational planning, teach them how to navigate the University system, and encourage them to take responsibility for their decisions.

It is Academic Advising's mission to support the holistic development of students by cultivating trusting and collaborative relationships. It is an interactive and student-focused process. As a partnership, it is important for students to understand the responsibilities for themselves and their academic advisor.

### Student Responsibilities

- Read your e-mail communications from your academic advisor.
- Learn and know where to find information about curriculum requirements, academic policies, and university procedures.
- Schedule and prepare for your academic advising appointment.
- Accept responsibility for decisions and actions that affect your educational progress and goals.
- Understand the importance of registering early.

### Academic Advisor Responsibilities

- Communicate curriculum requirements, academic and state policies, and university procedures.
- Refer students to applicable support resources.
- Encourage and guide students as they define and cultivate goals.
- Teach decision-making skills and how to take responsibility for education progress.
- Engage in training facilitated by the department to stay current and knowledgeable of department, college and university-wide programs and requirements.

Students are encouraged to meet with their assigned academic advisor at least once a semester to ensure they remain on track with their intended degree plan. To schedule an appointment, students may call or visit.

Website: <https://www.utsa.edu/advising/>

Phone: 210-458-4900

E-mail: [advising@utsa.edu](mailto:advising@utsa.edu)

# 1. 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 has the opportunity to develop transferrable skills 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 UTSA Core Curriculum provides learning inside and outside of the classroom that builds upon students' previous experience. This program is designed to help students of all backgrounds develop the knowledge, skills, and attitudes to be responsible community members who are successful in their educations, lives, and careers.

Students will have the opportunity to develop marketable and transferrable skills through the Core Curriculum learning objectives. These components include:

- Oral, written, and visual communication,
- Ethical judgement,
- Teamwork,
- Critical and analytical skills, and
- Personal and social responsibility.

The Core Curriculum helps develop broad skills that can be applied to any specific major or program and allows students to see connections

between various disciplines, develop respect for other cultures and points of view, and value other fields of study.

## 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 one of the following courses, for a total of 3 semester credit hours:

AIS 1203	Academic Inquiry and Scholarship (core component area 090)	3
AIS 1213	AIS: Architecture, Construction, and Planning (core component area 090)	3
AIS 1223	AIS: Arts and Humanities (core component area 090)	3
AIS 1233	AIS: Business (core component area 090)	3
AIS 1243	AIS: Engineering, Mathematics, and Sciences (core component area 090)	3
AIS 1253	AIS: Interdisciplinary Education (core component area 090)	3
AIS 1263	AIS: Life and Health Sciences (core component area 090)	3
AIS 1273	AIS: Social Sciences and Public Policy (core component area 090)	3

### 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 (TCCN: ENGL 1301)	3
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WRC 1023	Freshman Composition II (TCCN: ENGL 1302)	3
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## 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:

CS 1173	Data Analysis and Visualization	3
MAT 1023	College Algebra with Applications (TCCN: MATH 1314)	3
MAT 1043	Introduction to Mathematics (TCCN: MATH 1332)	3
MAT 1053	Mathematics for Business (TCCN: MATH 1324)	3
MAT 1073	Algebra for Scientists and Engineers (TCCN: MATH 1314)	3
MAT 1093	Precalculus (TCCN: MATH 2312)	3
MAT 1133	Calculus for Business (TCCN: MATH 1325)	3
MAT 1193	Calculus for the Biosciences (TCCN: MATH 2313)	3
MAT 1214	Calculus I (TCCN: MATH 2413)	4
STA 1053	Basic Statistics (TCCN: MATH 1342)	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 (TCCN: ANT 2301)	3
AST 1013	Introduction to Astronomy (TCCN: ASTR 1303)	3
AST 1033	Exploration of the Solar System (TCCN: ASTR 1304)	3
BIO 1203	Biosciences I for Science Majors (TCCN: BIOL 1306)	3
BIO 1223	Biosciences II for Science Majors (TCCN: BIOL 1307)	3
BIO 1233	Contemporary Biology I (TCCN: BIOL 1308)	3
BIO 1243	Contemporary Biology II (TCCN: BIOL 1309)	3
CHE 1083	Introduction to the Molecular Structure of Matter	3
CHE 1093	Introduction to Molecular Transformations	3
ES 1113	Environmental Botany (TCCN: BIOL 1311)	3
ES 1123	Environmental Zoology (TCCN: BIOL 1313)	3

ES 1213	Environmental Geology (TCCN: GEOL 1305)	3
ES 2013	Introduction to Environmental Science I (TCCN: ENVR 1301)	3
ES 2023	Introduction to Environmental Science II (TCCN: ENVR 1302)	3
GEO 1013	The Third Planet (TCCN: GEOL 1301)	3
GEO 1033	Geology of North American National Parks (TCCN: GEOL 1302)	3
GEO 1123	Life Through Time (TCCN: GEOL 1304)	3
GES 2613	Intro to Physical Geography (TCCN: GEOG 1301)	3
PHY 1943	Physics for Scientists and Engineers I (TCCN: PHYS 2325)	3
PHY 1963	Physics for Scientists and Engineers II (TCCN: PHYS 2326)	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
ARC 1113	Introduction to the Built Environment (TCCN: ARCH 1311)	3
ARC 2423	Global History of Architecture and Urbanism: Renaissance to 19th Century (TCCN: ARCH 1302)	3
CHN 1014	Elementary Chinese I (TCCN: CHIN 1411)	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 (TCCN: ENGL 2332)	3
CSH 1113	Literary Masterpieces of Western Culture II (TCCN: ENGL 2333)	3
CSH 1213	Topics in World Cultures (TCCN: HUMA 2323)	3
CSH 2113	The Foreign Film	3
ENG 2013	Introduction to Literature (TCCN: ENGL 2341)	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
ENG 2443	Persuasion and Rhetoric	3
FRN 1014	Elementary French I (TCCN: FREN 1411)	4
FRN 2333	French Literature in English Translation	3

GER 1014	Elementary German I (TCCN: GERM 1411)	4
GER 2333	German Literature in English Translation	3
GES 1023	World Regions & Global Change (TCCN: GEOG 1303)	3
GLA 1013	US in Global Context	3
GRK 1114	Introductory Classical Greek I	4
HIS 2123	Introduction to World Civilization to the Fifteenth Century (TCCN: HIST 2321)	3
HIS 2133	Introduction to World Civilization since the Fifteenth Century (TCCN: HIST 2322)	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 (TCCN: PHIL 1304)	3
ITL 1014	Elementary Italian I (TCCN: ITAL 1411)	4
ITL 2333	Italian Literature in English Translation	3
JPN 1014	Elementary Japanese I (TCCN: JAPN 1411)	4
LAT 1114	Introductory Latin I (TCCN: LATI 1411)	4
MAS 2013	Introduction to Chicano(a) Studies (TCCN: HUMA 1305)	3
PHI 1043	Critical Thinking (TCCN: PHIL 2303)	3
PHI 2013	Basic Philosophical Problems (TCCN: PHIL 1301)	3
PHI 2023	Introduction to Ancient Philosophy (TCCN: PHIL 2316)	3
PHI 2033	Introduction to Early Modern Philosophy	3
PHI 2123	Contemporary Moral Issues	3
RUS 1014	Elementary Russian I (TCCN: RUSS 1411)	4
RUS 2333	Russian Literature in English Translation	3
SPN 1014	Elementary Spanish I (TCCN: SPAN 1411)	4
SPN 2333	Hispanic Literature in English Translation	3
WGSS 2013	Introduction to Women's Studies	3
WGSS 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	Art History I (TCCN: ARTS 1303)	3
AHC 1123	Art History II (TCCN: ARTS 1304)	3
ARC 1513	Great Buildings and Cities of the World	3
ARC 2413	Global History of Architecture and Urbanism: Prehistory to Medieval (TCCN: ARCH 1301)	3
ART 1103	Introduction to Visual Arts (TCCN: ARTS 1301)	3

BBL 2023	Latino Cultural Expressions (TCCN: HUMA 1311)	3
CLA 2033	Introduction to Classical Literature	3
DAN 2003	Introduction to Dance (TCCN: DANC 2303)	3
HUM 2023	Introduction to the Humanities I (TCCN: HUMA 1301)	3
HUM 2033	Introduction to the Humanities II (TCCN: HUMA 1302)	3
HUM 2053	History of Film (TCCN: HUMA 1315)	3
MAS 2023	Latino Cultural Expressions (TCCN: HUMA 1311)	3
MUS 2243	World Music in Society	3
MUS 2633	American Roots Music (TCCN: MUSI 1310)	3
MUS 2653	Music in Culture	3
MUS 2663	History and Styles of Jazz (TCCN: MUSI 1310)	3
MUS 2673	History and Styles of Rock (TCCN: MUSI 1310)	3
MUS 2683	History and Styles of Western Art Music (TCCN: MUSI 1306)	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 (TCCN: HIST 1301)	3
HIS 1053	United States History: Civil War Era to Present (TCCN: HIST 1302)	3
HIS 2053	Texas History (TCCN: HIST 2301)	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 (TCCN: GOVT 2305)	3
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and one of the following two courses:

POL 1133	Texas Politics and Society (TCCN: GOVT 2306)	3
POL 1213	Civil Rights in Texas and America (TCCN: GOVT 2306)	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 (TCCN: ANTH 2346)	3
ANT 2043	Introduction to Archaeology (TCCN: ANTH 2302)	3
ANT 2053	Introduction to Cultural Anthropology (TCCN: ANTH 2351)	3
BBL 2003	Language, Culture, and Society (TCCN: ANTH 2351)	3
BBL 2243	Bilingual Families, Communities, and Schools: National and Transnational Experiences (TCCN: ANTH 2351)	3
BIO 1033	Drugs and Society (TCCN: PHED 1346)	3
CRJ 1113	The American Criminal Justice System (TCCN: CRIJ 1301)	3
ECO 2003	Economic Principles and Issues (TCCN: ECON 1301)	3
ECO 2023	Introductory Microeconomics (TCCN: ECON 2302)	3
EGR 1343	The Impact of Modern Technologies on Society	3
ES 1003	Survey Topics in Environmental Studies	3
GES 1013	Fundamentals of Geography	3
GES 2623	Human Geography: People, Place, Culture (TCCN: GEOG 1302)	3
HTH 2413	Introduction to Community and Public Health	3
HTH 2513	Personal Health (TCCN: PHED 1304)	3
IDS 2113	Society and Social Issues (TCCN: SOCI 1301)	3
PSY 1013	Introduction to Psychology (TCCN: PSYC 2301)	3
SOC 1013	Introduction to Sociology (TCCN: SOCI 1301)	3
SOC 2013	Social Problems (TCCN: SOCI 1306)	3
SOC 2023	Social Context of Drug Use (TCCN: SOCI 2340)	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, TCCN: SPCH 1315)	3
EGR 1403	Technical Communication (core component area 091)	3
ENG 2413	Technical Writing (core component area 091, TCCN: ENGL 2311)	3
PAD 1113	Public Administration and Policy in American Society (core component area 097)	3
PHI 2043	Introductory Logic (core component area 092, TCCN: PHIL 2303)	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.

A student may petition to attempt a gateway course a third time because of circumstances beyond the student's control that prevented the student from successfully completing the course on prior attempts. The circumstances must have been severe, ongoing, and must have directly affected the student, such as but not limited to hospitalization of the student. In addition to a letter describing the circumstances, the student must also submit a DegreeWorks Degree Audit, an unofficial transcript from ASAP showing all grades of courses attempted and documentation of the circumstances, such as a physician's statement on letterhead or stationery, with the petition form (<https://www.utsa.edu/advising/documents/forms/Gateway%20Form.pdf>).

Students should consult their academic advisor for information on gateway appeals. 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, and
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).

The Texas Higher Education Coordinating Board has approved Field of Study (FOS) curricula that are guaranteed by state law to transfer and apply to another Texas public institution of higher education. If a student takes all of the courses in an FOS and then transfers to UTSA, the FOS is guaranteed to transfer as a block and be applied to the appropriate major. The Texas Higher Education Coordinating Board has approved FOS in the following areas: architecture, biology, business



administration & management, communication, computer science, criminal justice, economics, engineering (chemical, civil, electrical, and mechanical), engineering technology, English language & literature, history, mathematics, Mexican American studies, music, nursing, political science, psychology, radio & television, social work, and sociology. Although the courses in these FOS at various institutions may not be precisely equivalent to courses in the UTSA Undergraduate Catalog, students who have successfully completed the FOS 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 Resources (<http://www.thecb.state.tx.us/institutional-resources-programs/public-universities-health-related-institutions/transfer-resources/>)" 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 approval by the College is needed, the course need not be repeated if the 39-hour upper-division requirement is met. If not met, the student's advisor will recommend another upper-division course to meet the 39-hour requirement.

### 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/>) 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/forms/registrar/>) 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 nonaccredited may be appealed for transfer to UTSA on an individual basis at the discretion of the major academic department.

### Not Accepted<sup>1</sup>

#### 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<sup>®</sup>) test.

- <sup>1</sup> 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 and within 30 credit hours of graduation 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, the chair of the department offering the course, and the undergraduate associate dean of the college offering the course. Approval forms are available on the One Stop Enrollment website (<https://onestop.utsa.edu/forms/registrar/>). All approvals must be obtained and the form filed by the time of registration. Students are encouraged to begin collecting the appropriate authorizations before the start of the registration period.

### For Graduate Credit

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

1. All hours required for the student's undergraduate degree must be completed in the term in which the graduate course is being taken.
2. 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 and become a part of the student's permanent graduate academic record.
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, and the graduate associate dean of the college offering the course. Approval forms are available on the One Stop Enrollment website (<https://onestop.utsa.edu/forms/registrar/>). The form must be filed by the time of registration. Students are encouraged to begin seeking appropriate authorizations before the registration period.

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

1. The student is in good academic standing in an accelerated bachelor's/master's degree program or is in good academic standing in the Honors College.
2. If graduate credit is earned, the semester credit hours are not considered part of the baccalaureate degree program and become a part of the student's permanent graduate academic record.
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, and the graduate associate dean of the college offering the course. Approval forms are available on the One Stop Enrollment website (<https://onestop.utsa.edu/forms/registrar/>).

The form must be filed by the time of registration. Students are encouraged to begin seeking appropriate authorizations before the registration period.

## Graduation

### Graduation Dates

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

Information regarding Graduation and Commencement is available 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](mailto: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.

#### Fall Semester Graduation

- Priority deadline: July 15
- Final deadline: September 15

#### Spring Semester Graduation

- Priority deadline: November 15
- Final deadline: February 15

#### Summer Semester Graduation

- June 15
- 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 complete the application from the One Stop Enrollment website (<https://onestop.utsa.edu/forms/registrar/>), then submit the completed application via email to [graduationcoordination@utsa.edu](mailto:graduationcoordination@utsa.edu) or by uploading through the Document Uploader (<https://uploader.it.utsa.edu/>).

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 60 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 the certificate by submitting a completed **Application for Undergraduate Certificate** via email to [graduationcoordination@utsa.edu](mailto:graduationcoordination@utsa.edu) or by uploading through the Document Uploader (<https://uploader.it.utsa.edu/>) no later than September 15 for the Fall Semester, February 15 for the Spring Semester, or June 15 for the Summer Semester. The application form is located on the One Stop Enrollment website (<https://onestop.utsa.edu/forms/registrar/>). Students with questions about the application should contact Graduation Coordination at [graduationcoordination@utsa.edu](mailto: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 or law school should consult an advisor at the UTSA University Pre-Professional 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 logic, critical reading, 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 (<https://www.utsa.edu/ilpa/>). The Institute offers an intensive Summer Law School Preparation Academy the Certificate in Legal Studies 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 (<https://business.utsa.edu/programs/mba/>).

## 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, Student Union SU 2.02.04. For more information about the UHPO, including appointment and on-call options, call 210-458-5185, or visit the website at <https://www.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 Texas Christian University School of Medicine and the University of the Incarnate Word School of Osteopathic Medicine, are processed by the Texas Medical and Dental Schools Application Service (TMDAS), 702 Colorado Street, Suite 6.400, Austin, Texas 78701 ([www.utsystem.edu/tmdsas/](http://www.utsystem.edu/tmdsas/)) (<https://www.tmdsas.com/>). 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), which includes the University of the Incarnate Word School of Osteopathic Medicine; 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 Texas Christian University School 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

### Joint BSN-MDST Pathway to Nursing Program (FANS)

UTSA provides a pathway for students who are interested in a Nursing degree through a 2+2 program with UT Health San Antonio. UTSA students who qualify and get accepted into the BSN Nursing program at UTHSA, pending grade point average and test scores, will receive a B.A. degree in Multidisciplinary Studies (MDST) from UTSA and a B.S. degree in Nursing from UT Health San Antonio upon successful completion of the program. Students are eligible to take the Registered Nurse licensing examination after they earn their BSN from UTHSA. 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)

The Dental Early Admission Program 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 October 1st 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 (<https://www.texasjamp.org/>) for additional details.

### Respiratory Care Early Acceptance Program (RCEAP)

The Respiratory Care Early Acceptance Program offers academically outstanding undergraduate students from The University of Texas at San Antonio (UTSA) with an interest in respiratory care an opportunity to be granted conditional acceptance to the School of Health Professions at UT Health San Antonio (<https://www.uthscsa.edu/academics/health-professions/programs/3plus2/>). Upon completion of the program, students will receive a Bachelor of Science in Biology or a Bachelor of Science in Kinesiology (Kinesiology and Health Science Concentration) at UTSA and a Master of Science in Respiratory Care at UT Health San Antonio within five years.

Eligible applicants must be full-time UTSA students majoring in a Bachelor of Science Degree in Biology or Kinesiology (Kinesiology and Health Science Concentration) who have completed at least 12 semester credit hours of coursework at UTSA in their program of study. Applications can be submitted by students who have earned between 12 to 60 semester credit hours in their program of study for Biology or Kinesiology. Applications must be submitted by students on or before the completion of 60 semester credit hours at UTSA. Information about program requirements for acceptance into the program and for its completion are available at the Health Professions Office.

### Medical Laboratory Science Early Acceptance Program (MLSEAP)

The Medical Laboratory Sciences Early Acceptance Program offers academically outstanding undergraduate students from The University of Texas at San Antonio (UTSA) with an interest in medical lab sciences an opportunity to be granted conditional acceptance to the School of Health Professions at UT Health San Antonio (<https://www.uthscsa.edu/academics/health-professions/programs/medical-laboratory-sciences-early-acceptance-program-mlseap/admissions/>). Upon completion of the program, students will receive a Bachelor of Science in Biology or Microbiology and Immunology, or a Bachelor of Arts in Chemistry at UTSA and a Master of Science in Medical Laboratory Science at UT Health San Antonio within five years.

Eligible applicants must be full-time UTSA students majoring in Biology, Microbiology and Immunology, or in Chemistry who have completed at least 12 semester credit hours of coursework at UTSA in their program of study. Applications can be submitted by students who have earned between 12 to 60 semester credit hours in their program of study for Biology, Microbiology and Immunology, or Chemistry. Applications must be submitted by students on or before the completion of 60 semester credit hours at UTSA. Information about program requirements for acceptance into the program and for its completion are available at the Health Professions Office (<https://www.utsa.edu/healthprofessions/>).

### Physical Therapy Early Acceptance Program (PTEAP)

The Physical Therapy Early Acceptance Program offers academically outstanding undergraduate students from The University of Texas at San Antonio (UTSA) with an interest in physical therapy an opportunity to be granted conditional acceptance to the School of Health Professions at UT Health San Antonio (<https://stage.uthscsa.edu/academics/health-professions/programs/dpt-early-acceptance-program/>). Upon completion of the program, students will receive a Bachelor of Science in Biology or Kinesiology (Kinesiology and Health Science Concentration) at UTSA and a Doctor of Physical Therapy (DPT) at UT Health San Antonio within six

years. The PTEAP reduces the time of completion for the DPT degree by one year.

Eligible applicants must be full-time UTSA students majoring in Bachelor of Science Degree in Biology or Kinesiology (Kinesiology and Health Science Concentration). Have completed at least 30 semester credit hours (SCH) of coursework at UTSA but not more than a total of 75 semester credit hours in one of the approved programs of study. Applications must be submitted by students on or before the completion of 75 semester credit hours at UTSA. Information about program requirements for acceptance into the program and for its completion are available at the Health Professions Office (<https://www.utsa.edu/healthprofessions/>).

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

## 2. UNDERGRADUATE CERTIFICATE PROGRAMS

Undergraduate certificate programs provide training opportunities for those students enrolled at UTSA as undergraduates. Certificate programs are narrower in scope and shorter in duration than baccalaureate degrees. Undergraduate certificate programs are neither “degree” programs nor teacher certification programs. Students wishing to be certified to teach at the elementary, middle school, or high school level should refer to the “Teacher Certification Programs for Undergraduate Students (p. 109)” page.

Currently, the following undergraduate certificate programs are offered:

- Certificate in Aerospace Engineering (p. 136) offered by the Department of Mechanical Engineering, College of Engineering and Integrated Design.
- Certificate in Artificial Intelligence (p. 132) offered by the Department of Electrical and Computer Engineering, College of Engineering and Integrated Design.
- Certificate in Athletic Coaching (p. 175) offered by the Department of Kinesiology, College for Health, Community and Policy.
- Certificate in Business Analytics (p. 68) offered by the Department of Management Science and Statistics, Carlos Alvarez College of Business.
- Certificate in Community Engaged Leadership (p. 345) offered by University College.
- Certificate in Computer Programming for Engineers (p. 132) offered by the Department of Electrical and Computer Engineering, College of Engineering and Integrated Design.
- Certificate in Data Center Design (p. 116) offered by the College of Engineering and Integrated Design.
- Certificate in Data Science (p. 345) offered by University College.
- Certificate in Design Communication and Fabrication (p. 144) offered by the School of Architecture and Planning, College of Engineering and Integrated Design.
- Certificate in Engineering Projects in Community Service (EPICS) (p. 116) offered by the College of Engineering and Integrated Design.
- Certificate in Geographic Information System (p. 304) offered by the Department of Earth and Planetary Sciences, College of Sciences.
- Certificate in Healthcare Interpreting (p. 239) offered by the Department of Modern Languages and Literatures, College of Liberal and Fine Arts.
- Certificate in Heating, Ventilation and Air-Conditioning (p. 136) offered by the Department of Mechanical Engineering, College of Engineering and Integrated Design.
- Certificate in Industrial and Manufacturing Engineering (p. 136) offered by the Department of Mechanical Engineering, College of Engineering and Integrated Design.
- Certificate in Legal Studies (p. 345) offered by University College.
- Certificate in Nutrition for Health Professionals (p. 158) offered by the College for Health, Community and Policy.
- Certificate in Oil/Gas (p. 136) offered by the Department of Mechanical Engineering, College of Engineering and Integrated Design.

- Certificate in Operations and Supply Chain Management (p. 68) offered by the Department of Management Science and Statistics, Carlos Alvarez College of Business.
- Certificate in Professional Writing and Rhetoric (p. 228) offered by the Department of English, College of Liberal and Fine Arts.
- Certificate in Public Policy and Data Analysis (p. 183) offered by the Department of Public Administration.
- Community Health Worker Certificate (p. 158) offered by the College for Health, Community and Policy.

### 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 (pdf) ([https://onestop.utsa.edu/wp-content/uploads/FORM\\_2021-2022-Application\\_for\\_Certificate.pdf](https://onestop.utsa.edu/wp-content/uploads/FORM_2021-2022-Application_for_Certificate.pdf)) to the One Stop Enrollment Center by the deadline: fall deadline is September 15, spring deadline is February 15, summer deadline is June 15. All late petitions for an undergraduate certificate are due no later than the last day of the semester of graduation. Students with questions about the application should contact Graduation Coordination at [graduationcoordination@utsa.edu](mailto:graduationcoordination@utsa.edu).



## 3. UTSA ONLINE

UTSA is proud to offer fully online degree programs that provide a way for students to reach their educational goals without ever having to step foot on campus. UTSA Online (<https://online.utsa.edu/>) (formerly Online Programs) remains on a mission to serve our local and national community by offering the same quality degree programs as our residential campus.

*Same degree. Same faculty. Same rigor.*

Our 100% online (a.k.a. Option III, Online Programs) include:

- undergraduate degrees
- undergraduate certificates
- graduate degrees
- graduate certificates

These programs should not be confused with other internet-based courses provided by the residential campus, which are traditional classes offered remotely but not through UTSA Online. These programs are funded, priced, and supported differently than our 100% online programs.

### Tuition, Fees, and Financial Aid Options

Whether our students are in-state or out-of-state, our 100% online students enjoy the same price per unit (<https://online.utsa.edu/cost-aid/tuition-and-fees/>), and students have numerous financial aid and payment options (<https://online.utsa.edu/cost-aid/payment-options/>) available.

*Note: Students who are enrolled **only** in a certificate program are not eligible to use financial aid or Veteran's benefits.*

### Degree Requirements

Students enrolled in an online degree program will follow the same institutional requirements to complete a bachelor's degree as defined in this catalog, which include:

- Completing the Core Curriculum requirements (p. 7)
- Successfully completing any applicable Gateway Courses required by the program (p. 10)
- Completing a minimum of 120 semester credit hours and achieving an overall 2.0 grade point average in all work attempted at UTSA (p. 6)
- Meeting the minimum UTSA Residence Requirements (p. 6)

### Term Options

UTSA Online classes are offered in a mix of term lengths:

- **Fall/Spring Terms:** 8-week and 16-week
- **Summer Terms:** 5-week, 8-week, and 10-week

Students may be able to choose any combination of class lengths based on availability and the number of credits being taken at any given time but must still adhere to the semester credit hour limits in the UTSA Student Policies (<http://catalog.utsa.edu/policies/generalacademicregulations/registration/>).

## Available Online Programs

### College of Business

- Bachelor of Business Administration degree in Cyber Security (p. 41)
- Minor in Digital Forensics (p. 48)

### College of Liberal and Fine Arts

- Bachelor of Arts degree in Communication (p. 216)

Available concentration in Communication:

- Digital Communication

### University College

- Bachelor of Arts degree in Multidisciplinary Studies (p. 342)

Available focus areas in Multidisciplinary Studies:

- Business
- Communication
- Data Science
- Geography
- Health
- Humanities
- Sociology

- Undergraduate Certificate in Data Science (p. 345)

## Contact UTSA Online

For any questions regarding UTSA Online's degree programs or admissions requirements, please contact:

### UTSA Online

[onlineenrollment@utsa.edu](mailto:onlineenrollment@utsa.edu)

210-458-4000

## 4. CARLOS ALVAREZ COLLEGE OF BUSINESS

### Mission Statement

The Carlos Alvarez 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 Carlos Alvarez College of Business welcomes all students dedicated to academic success in the study of business. The College is accredited by AACSB (Association to Advance Collegiate Schools of Business) International and is one of a select group of programs internationally with separate accreditation at the undergraduate, master's and doctoral levels in accounting.

Students who graduate from the Carlos Alvarez 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 offers 14 undergraduate majors. Additionally, students can select from 14 different minors to augment the knowledge and skills acquired in their major. The College also offers seven supporting business competencies that 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 classrooms. We are also greatly expanding student access to online courses, especially for the Common Body of Knowledge (CBK) courses, as well as the online B.B.A. in Cyber Security.

UTSA business students receive a high-quality education that not only provides them with the knowledge to succeed in their careers, but also with the leadership training, professional development, technical and soft skills necessary to advance and become dynamic business leaders.

The Four Pillars of Engagement provide an intentional framework for the Carlos Alvarez College of Business to conduct transformative events and programs to enable our students to become viable and impactful global citizens. The four pillars include

- Global and Intercultural Fluency
- Professional Development and Leadership
- Research and Innovation
- Service and Community Learning

In addition to their academic coursework, students will have opportunities to engage in programming related to these pillars throughout their academic career.

### Carlos Alvarez College of Business Undergraduate Admission Policy

The Carlos Alvarez College of Business at UTSA seeks to enable qualified students to acquire business and technical skills to meet the evolving demands of employers and stakeholders in Texas and beyond. All degree-seeking students who meet UTSA regular undergraduate admission requirements and are able to enroll in MAT 1053 (TCCN: MATH 1324) or a higher-level mathematics course in their first semester at UTSA have direct admission to the B.B.A. (all majors), the B.A. in Economics, the B.S. in Statistics and Data Science, or the B.S. in Applied Cyber Analytics. Students pursuing specific business majors may have to satisfy additional academic requirements to complete their degree programs.

Students who do not qualify for enrollment in course MAT 1053 Mathematics for Business, or a higher-level mathematics course, will be classified as business studies in University College. Business studies students will be evaluated for admission to the Carlos Alvarez College of Business to declare a business major at the end of each term.

Students applying to an undergraduate business self-supporting online degree program will satisfy the same requirements for admission required of regular on-campus students. (Chapter 4, Subchapter Q, section 4.275 (6), THECB).

#### Internal Transfers

Current UTSA students seeking to change their major to a B.B.A. (all majors), a B.A. in Economics, a B.S. in Statistics and Data Science, or a B.S. in Applied Cyber Analytics degree must have a 2.0 UTSA GPA to declare the major. Prospective business majors may submit the declaration of major forms to their primary academic advisor.

#### Business Math Gateway Course

Students pursuing a Bachelor of Business Administration (B.B.A.) degree (all majors except Actuarial Science) or a Bachelor of Arts in Economics, whether they are a declared major or a business studies pathway student, must successfully complete the business math gateway course MAT 1053 (TCCN MATH 1324) or equivalent 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 by taking an equivalent course at another institution, will be required to change his, her or their major outside of business. Upon the second failed attempt students will be changed from Business Studies to undeclared (UND) and will not be eligible for a Bachelor of Business Administration (B.B.A.) or a Bachelor of Arts in Economics degree.

Business students must register for a required mathematics course every semester beginning with their first semester of enrollment until the math requirements (MAT 1053 and MAT 1133) are fulfilled.

### Academic Standing for Declared Business Majors

Carlos Alvarez College of Business majors (B.B.A. degrees, B.A. degree in Economics, B.S. degree in Statistics and Data Science, and B.S. degree in Cyber Analytics) 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 Carlos Alvarez College of Business.



In order to graduate, all majors must maintain a UTSA 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). The Business Honors Program provides outstanding students with opportunities to benefit from an enriched first-class education. The program is designed to give our students a competitive edge in the job market.

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

### Program Admission

Students pursuing majors in the Carlos Alvarez College of Business are eligible to apply and participate. Students interested in admission to the Business Honors Program must complete an application. Every Honors applicant is evaluated on an individual basis. Admission to the Business Honors Program is competitive.

### New Transfer Students

Applicants who have attended college after high school and have earned a minimum of 12 transferable college credit hours will be admitted to the Business Honors program if they:

- Meet all UTSA undergraduate admissions requirements.
- Have a transfer grade point average (GPA) of 3.5 or higher (minimum of 12 transferable college credit hours).
- Have completed MAT 1053 Mathematics for Business (TCCN MATH 1324 or equivalent) or equivalent with a grade of "C-" or better.
- Have successfully completed evaluation under the Texas Success Initiative (TSI) for unencumbered registration for courses.

### Current UTSA Business Students

Applicants who are current UTSA students will be evaluated using the following criteria:

- Students must be pursuing a business degree.
- Students must have at least 12 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 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.

### Program Requirements

The Business Honors Program requires its members 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 grade point average of 3.25.
2. Complete a minimum of 9 semester credit hours of designated Business Honors sections. Business Honors classes emphasize enhanced experiential and applied learning activities, class discussion, presentations, and business research. Contingent upon available space, students with outstanding academic records may

apply for admission into these classes subject to approval by the Business Honors Program office.

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 Honors program handbook. Other program requirements may apply.

## Scholarships

The Carlos Alvarez 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 Office of the Dean. Students should visit the 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 <https://business.utsa.edu/scholarships/>. 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 Carlos Alvarez College of Business

**The following minors are open to any UTSA major:**

Actuarial Science; Adaptive Decision Models for Business; Cyber Security; Digital Forensics; Economics; Information Systems; Management Science; Marketing; Network and Data Center Management; Sports Management, and Statistics.

**The following minor is open to B.B.A. majors only:**

Finance.

**The following 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.

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

## Supporting Business Competencies in the Carlos Alvarez College of Business

Students admitted to the Carlos Alvarez College of Business will have the opportunity to complete 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 currently offers the following seven supporting business competencies.

Students interested in pursuing a business competency should consider and integrate any prerequisite courses into their degree plan.

**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:

ACC 3163	Quantitative Analysis for Accountants	3
ECO 3123	Introduction to Econometrics	3
FIN 3063	Computer Modeling of Financial Applications	3
MKT 4953	Special Studies in Marketing	3
MS 3003	Visualization in Business Analytics	3
MS 3073	Business Intelligence and Analytics	3
MS 3083	Data Management for Business Analytics	3
MS 4323	Analytics with Spreadsheet and Simulation in Business	3

**Business Research** (9 semester credit hours) – The Business Research competency is designed for students who would like to explore a future career in academe, research or consulting. It provides students an outstanding opportunity to develop their research acumen. Students who complete the Business Research competency will enhance their understanding of the nature of research, and the process to prepare for subsequent study in a doctoral program.

Select three courses from the following:

GBA 3013	Introduction to Academic Research	3
And either:		
GBA 4023	Conducting Cutting Edge and Innovative Research and Discovery	3
GBA 4033	Communication and Visualization of Impactful Research	3
Or:		
GBA 4993	Honors Thesis (repeated)	6

**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.

Select three courses from the following:

ENT 3123	Innovation and Entrepreneurship	3
And two of the following:		
BLW 3013	Business Law for Small Business Owners	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
MOT 4023	Essentials of Technology Management	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.

Select three courses from the following:

MGT 4923	Leading Organizations and Making Decisions	3
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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	3
FIN 3063	Computer Modeling of Financial Applications	3
MS 3063	Decision Support Systems	3
MS 4383	Predictive Operational Analytics	3
MS 4323	Analytics with Spreadsheet and Simulation 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.

Select three courses from the following:

FIN 4523	Introduction to Risk Management	3
FIN 4813	Property-Liability Insurance Finance	3
FIN 4823	Life and Health Insurance Finance	3
FIN 3453	Derivative Markets	3

## Enrollment in Business Courses

In response to legislative and employer demands for graduates with marketable skills, students in any UTSA major may register for the following upper division courses:

ENT 3123	Innovation and Entrepreneurship	3
FIN 3053	Introduction to Personal Finance	3
MGT 3023	Understanding People and Organizations	3
MGT 4103	Introduction to Healthcare Management	3

#### 4. Carlos Alvarez College of Business

MKT 4253	Digital Marketing	3
MKT 3063	Personal Selling	3
MKT 4033	Social Media Marketing	3
MOT 4023	Essentials of Technology Management	3
MOT 4143	Introduction to Project Management	3
MS 3003	Visualization in Business Analytics	3
MS 3083	Data Management for Business Analytics	3
MS 4313	Six Sigma and Lean Operations	3
MS 4323	Analytics with Spreadsheet and Simulation in Business	3
RFD 3523	Real Estate Law	3

Additionally, students pursuing any minor or certificate in the Carlos Alvarez College of Business for which they qualify may enroll in any of the upper division business courses required by the minor or certificate.

Finally, students in any UTSA major may enroll in FIN 3003, MGT 3013, MKT 3013 and any Statistics (prefix: STA) course and Economics (prefix: ECO) course (**except** ECO 3313 Money and Banking) as long as they satisfy the course prerequisites. Otherwise, all courses at the 3000- and 4000-level are restricted to Carlos Alvarez College of Business majors or to students who require the courses for their particular degree. Students outside the College may petition to enroll in other 3000- and 4000-level courses. Evaluation of all petitions to enroll in major restricted courses will consider whether (a) the course applies to their degree plan, (b) the student meets all prerequisites and (c) the availability of seats. All petitions must be approved by the appropriate Department Chair and College Dean.

**Enrollment in ACC 2033 Principles of Accounting II, ECO 3313 Money and Banking and MGT 3003 Business Communication and Professional Development are restricted to students in business studies and declared business majors only .**

Students majoring in fields outside the College may not take more than 27 semester credit hours in the College without approval of the Associate Dean of Undergraduate Studies of the Carlos Alvarez College of Business. The College reserves the right to restrict business courses (excluding core curriculum courses) to declared business majors in order to meet student demand and so that students can register for courses to ensure timely graduation.

ACC 2003, FIN 3003 and ECO 2003 are courses that may not be applied toward a B.B.A. degree and grades earned in these courses will not be included in the major GPA.

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

## Carlos Alvarez College of Business Academic Credit Internship Policy

An academic credit internship requires a student to perform scholarly work in conjunction with a paid internship. The academic internship must be supervised by a faculty member, and the scope and nature of the scholarly work must be defined and approved by the faculty member before the student can register for an academic credit internship.

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

- The student must be a declared major and in good academic standing at UTSA and in the Carlos Alvarez College of Business.
- 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.
- 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.
- 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.
- Each student must meet the requirements of his, her or their catalog of graduation regarding the total number of semester credit hours that may be earned through internships for academic credit, and meet the following provisions:
  - Each 3-credit-hour academic internship must be completed with a different company/organization.
  - An academic credit internship with a firm at which a student is currently employed may be considered, but only if clear evidence shows that the internship is substantially and programmatically different from such employment.
- The internship must last at least 200 work hours within the term of enrollment in which the student is seeking academic credit.
- Internships must be professional in nature and certain types of work experiences are not eligible for credit.
  - Self-employment.
  - Work performed by a student's family-owned or managed business.
  - Training activities. Examples include preparing for insurance/ securities license exams.
- A virtual internship may be authorized. A review will be required if the work is performed at an employer's registered private residential address.

## Independent Study

In order to qualify for an independent study, students must have a UTSA GPA of 3.0 and permission in writing from the instructor, Department Chair, and the Associate Dean of Undergraduate Studies in addition to any departmental prerequisites. See the Office of the Registrar for the required forms.

## Laptop Policy

Students enrolled in the Carlos Alvarez College of Business are required to own a laptop that meets minimum program specifications. Minimum specifications for each program are available on the College website.

## Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the Carlos Alvarez 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

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 or IS 1413	Business Information Systems Fluency Excel for Business Information Systems	3
IS 3003	Principles of Information Systems for Management	3
MAT 1053	Mathematics for Business (satisfies Mathematics Core Curriculum requirement. This course is not required for Actuarial Science majors) <sup>1</sup>	3
MAT 1133	Calculus for Business (satisfies Mathematics or Component Area Option 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 Actuarial Science, Economics, Finance, Operations and Supply Chain Management and Business Analytics are strongly encouraged to select IS 1413 Excel for Business Information Systems. IS 1413 is required for Accounting majors.**

<sup>1</sup> Students may elect to substitute MAT 1093 Precalculus for MAT 1053 Mathematics for Business. Students electing to take MAT 1093 will need to meet prerequisites or achieve satisfactory performance on a placement examination. Visit UTSA Testing Services for more information regarding math placement exams.

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

## 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 Carlos Alvarez College of Business:

Code	Title	Credit Hours
<b>A. Required Courses</b>		
ACC 2003 or ACC 2013	Foundations of Accounting Principles of Accounting I	3
ECO 2023 or ECO 2013	Introductory Microeconomics Introductory Macroeconomics	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
<b>Total Credit Hours</b>		<b>18</b>

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.

The Department of Accounting offers both a Bachelor of Business Administration degree in Accounting, and a five-year (150-hour) Professional Accounting Program.

## Additional Gateway Course for Accounting Majors

Students pursuing the B.B.A. degree in Accounting must successfully complete **ACC 3023 Intermediate Accounting** 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 by taking an equivalent course at another institution, will be required to change his or her major outside of accounting.

## “C-” Grade Rule

A grade of “C-” or better in any accounting course required for a B.B.A in Accounting or any other course that is a prerequisite to an accounting (ACC) course indicates satisfactory preparation for further accounting education. A student receiving a grade below “C-” in any course to which this standard applies must repeat the course 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.

## Grade Standard Requirement for the Department of Accounting

A student must not receive more than two grades of “D+” or lower in upper-level accounting courses. Upon receiving a third grade of “D+” or lower, the student is permanently dismissed from the accounting program and may not be readmitted. In circumstances where a grade of “D+” or lower is replaced with a higher grade as a result of repeating the course, the original course grade and not the higher grade will be considered in applying this standard. For purposes of this policy, a “W” is not considered a grade lower than “D+” and will not count towards this policy.

## Principles of Accounting Competency Exam (PACE)

All students must take and pass the Principles of Accounting Competency Exam (PACE) prior to registering for ACC 3023 Intermediate Accounting I. For more information, visit the Testing Services website (<https://testing.utsa.edu/principles-of-accounting-competency-exam-pace/>). Registration dates are posted on ASAP every semester. You may take the exams twice in a single semester and you must pass the PACE in four attempts. A student who is unable to successfully pass the PACE in four attempts will be required to change to a major outside of accounting.

- B.B.A. Degree in Accounting (p. 26)
- Five-Year (150-Hour) Professional Accounting Program (p. 29)

## 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 1053, 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 Carlos Alvarez College of Business require 120 hours. If students elect to take a course that satisfies both a Core and Carlos Alvarez 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
<b>Total Credit Hours</b>	<b>42</b>

### Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the Carlos Alvarez 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
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 or IS 1413	Business Information Systems Fluency Excel for Business Information Systems	3
IS 3003	Principles of Information Systems for Management	3
MAT 1053	Mathematics for Business (satisfies Mathematics Core Curriculum requirement. This course is not required for Actuarial Science majors) <sup>1</sup>	3
MAT 1133	Calculus for Business (satisfies Mathematics or Component Area Option 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 Actuarial Science, Economics, Finance, Operations and Supply Chain Management and Business Analytics are strongly encouraged to select IS 1413 Excel for Business Information Systems. IS 1413 is required for Accounting majors.**

<sup>1</sup> Students may elect to substitute MAT 1093 Precalculus for MAT 1053 Mathematics for Business. Students electing to take MAT 1093 will need to meet prerequisites or achieve satisfactory performance on a placement examination. Visit UTSA Testing Services for more information regarding math placement exams.

In addition to the Core Curriculum requirements and requirements from the Carlos Alvarez 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, whether they are a declared major or a business studies pathway student, must successfully complete the business math gateway course MAT 1053 (TCCN MATH 1324) or equivalent 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 by taking an equivalent course at another institution, will be required to change his, her or their major outside of business. **Upon the second failed attempt students will be changed to undeclared (UND) and will not be eligible for a Bachelor of Business Administration (B.B.A) or a Bachelor of Arts in Economics degree.**

Code	Title	Credit Hours
MAT 1053	Mathematics for Business	3

Students pursuing the B.B.A. degree in Accounting must successfully complete ACC 3023 Intermediate Accounting I 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 by taking an equivalent course at another institution, will be required to change his, her or their major outside of accounting.

Code	Title	Credit Hours
ACC 3023	Intermediate Accounting I	3

## Degree Requirements

Code	Title	Credit Hours
<b>A. Major Requirements</b>		<b>30</b>

ACC 3023	Intermediate Accounting I	
ACC 3033	Intermediate Accounting II	
ACC 3043	Federal Income Taxation	
ACC 3071	Professional Issues and Topics in Accounting I	
ACC 3081	Professional Issues and Topics in Accounting II	
ACC 3113	Accounting Information Systems	
ACC 3123	Cost Analysis	
ACC 3163	Quantitative Analysis for Accountants	
ACC 4013	Principles of Auditing	
ACC 4091	Professional Issues and Topics in Accounting III	
ACC 4163	Contemporary Issues in Accounting Practice	
BLW 3033	Business Law for Accountants	

## B. Support Work<sup>1</sup>

<b>B. Support Work<sup>1</sup></b>		<b>57</b>
Business Common Body of Knowledge (51 SCH) (9 SCH Satisfy Core Curriculum Requirements)		
Option 1: Complete a Business Competency (6 semester credit hours in a competency)		
Option 2: Complete 6 semester credit hours of upper-division business electives		

**Total Credit Hours** **87**

<sup>1</sup> Transfer students who complete IS 1403 (TCCN BCIS 1305) outside of UTSA may use this lower division course as support work.

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, 505 East Huntland Drive, Suite 380, Austin, Texas or 512-305-7851 or visit their website at <https://www.tsbpa.texas.gov/>.

- 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 1233	AIS: Business (core)	3
MAT 1053	Mathematics for Business (core and CBK) <sup>1</sup>	3
WRC 1013	Freshman Composition I (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

Spring		Credit Hours
ECO 2023	Introductory Microeconomics (core and CBK) <sup>1</sup>	3
IS 1413	Excel for Business Information Systems (CBK)	3
MAT 1133	Calculus for Business (core and CBK) <sup>1</sup>	3
WRC 1023	Freshman Composition II (core)	3
American History (core)		3
<b>Credit Hours</b>		<b>15</b>

##### Second Year

Fall		Credit Hours
MS 1023	Business Statistics with Computer Applications I (CBK)	3
ECO 2013	Introductory Macroeconomics (CBK)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
ACC 2013	Principles of Accounting I (CBK)	3

Language, Philosophy & Culture (core)	3
<b>Credit Hours</b>	<b>15</b>

##### 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 (core)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
MGT 3003	Business Communication and Professional Development (CBK)	3

<b>Credit Hours</b>	<b>15</b>
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##### Third Year

Fall		Credit Hours
ACC 3023	Intermediate Accounting I (major)	3
ACC 3071	Professional Issues and Topics in Accounting I (major) <sup>2</sup>	1
ACC 3113	Accounting Information Systems (major)	3
MKT 3013	Principles of Marketing (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
Creative Arts (core)		3

<b>Credit Hours</b>	<b>16</b>
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##### Spring

ACC 3033	Intermediate Accounting II (major)	3
ACC 3081	Professional Issues and Topics in Accounting II (major)	1
ACC 3123	Cost Analysis (major)	3
ACC 3163	Quantitative Analysis for Accountants (major)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
Government-Political Science (core)		3

<b>Credit Hours</b>	<b>16</b>
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##### Fourth Year

Fall		Credit Hours
ACC 3043	Federal Income Taxation (major)	3
ACC 4013	Principles of Auditing (major)	3
ACC 4091	Professional Issues and Topics in Accounting III (major)	1
BLW 3033	Business Law for Accountants (major)	3
Life & Physical Sciences (core)		3
Business upper-division elective or competency course (support work in major)		3

<b>Credit Hours</b>	<b>16</b>
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##### Spring

ACC 4163	Contemporary Issues in Accounting Practice (major)	3
MGT 4893	Management Strategy (CBK)	3
Business upper-division elective or competency course (support work in major)		3



Government-Political Science (core)	3
<b>Credit Hours</b>	<b>12</b>
<b>Total Credit Hours</b>	<b>120</b>

- 1 Carlos Alvarez College of Business students should take MAT 1053, MAT 1133 and ECO 2023 to satisfy both Core Curriculum and CBK requirements.
- 2 Concurrent enrollment with ACC 3023 Intermediate Accounting I is required to take this course.

## 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 Carlos Alvarez 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. 29)
- B.A. degree in Economics (p. 32)

## 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 1053, 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 Carlos Alvarez College of Business require 120 hours. If students elect to take a course that satisfies both a Core and CACOB 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
<b>Total Credit Hours</b>	<b>42</b>

### Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the Carlos Alvarez 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
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 or IS 1413	Business Information Systems Fluency Excel for Business Information Systems	3
IS 3003	Principles of Information Systems for Management	3
MAT 1053	Mathematics for Business (satisfies Mathematics Core Curriculum requirement. This course is not required for Actuarial Science majors) <sup>1</sup>	3
MAT 1133	Calculus for Business (satisfies Mathematics or Component Area Option 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 Actuarial Science, Economics, Finance, Operations and Supply Chain Management and Business Analytics are strongly encouraged to select IS 1413 Excel for Business Information Systems. IS 1413 is required for Accounting majors.**

<sup>1</sup> Students may elect to substitute MAT 1093 Precalculus for MAT 1053 Mathematics for Business. Students electing to take MAT 1093 will need to meet prerequisites or achieve satisfactory

performance on a placement examination. Visit UTSA Testing Services for more information regarding math placement exams.

In addition to the Core Curriculum requirements and requirements from the Carlos Alvarez 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, whether they are a declared major or a business studies pathway student, must successfully complete the business math gateway course MAT 1053 (TCN MATH 1324) or equivalent 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 by taking an equivalent course at another institution, will be required to change his, her or their major outside of business. **Upon the second failed attempt students will be changed to undeclared (UND) and will not be eligible for a Bachelor of Business Administration (B.B.A) or a Bachelor of Arts in Economics degree.**

Code	Title	Credit Hours
MAT 1053	Mathematics for Business	3

### Degree Requirements

Code	Title	Credit Hours
<b>A. Major Requirements</b>		<b>33</b>
ECO 2013	Introductory Macroeconomics	
ECO 2023	Introductory Microeconomics <sup>1</sup>	
ECO 3013	Intermediate Microeconomics	
ECO 3053	Intermediate Macroeconomics	
ECO 3113	Introduction to Mathematical Economics	
ECO 3123	Introduction to Econometrics	
15 semester credit hours of upper-division Economics electives		
<b>B. Support Work</b>		<b>45</b>
Business Common Body of Knowledge (51 SCH) (9 SCH satisfy core curriculum requirements and additional 3 SCH satisfy the major requirement) <sup>2</sup>		
<b>C. Free Electives</b>		<b>9</b>
9 semester credit hours of free electives		
<b>Recommendations:</b>		
To help satisfy the Free Electives requirement, students are recommended to complete one of the Focus Options listed in the tables below. <sup>3</sup>		
Students interested in pursuing a Ph.D. in Economics or Finance should inform the chair of the Economics department.		
<b>Total Credit Hours</b>		<b>87</b>

<sup>1</sup> ECO 2023 is also used to satisfy Core requirement in Social and Behavioral Sciences.

<sup>2</sup> Semester credit hours for ECO 2013 and ECO 2023 count towards the Major requirement.

<sup>3</sup> If applicable, a course appearing under a focus option may be counted toward Major or Support Work requirements and not as a free elective. Note that an individual focus option may not exhaust the semester credit hours available for free electives. Semester

credit hours required to achieve the total of 120 semester credit hours for the degree can be completed by way of one or more focus options, or by using any other combination of free electives.

### Focus Options

A Focus Option is a pathway of courses connected by a theme, to support the degree planning of a student. One or more Focus Options may be pursued to help satisfy the Free Electives requirement.

If applicable, a course appearing under a focus option may be counted towards the Major or Support Work requirements instead of the Free Elective requirement. Completion of a Focus Option may not exhaust the semester credit hours available for free electives. Focus Options will not appear on the transcript or diploma.

Code	Title	Credit Hours
<b>Focus Option 1, Quantitative Economics and Analytics</b>		<b>21</b>
ACC 2013	Principles of Accounting I <sup>1</sup>	
MS 3043	Business Statistics with Computer Applications II <sup>1</sup>	
or STA 3003	Applied Statistics	
Two of the following: <sup>2</sup>		
ECO 4413	Game Theory	
ECO 4513	Industrial Organization	
ECO 4553	Public Economics	
ECO 4583	Labor Economics	
ECO 4813	Seminar on Research in Economics	
One of the following:		
STA 4133	Introduction to Programming and Data Management in SAS	
STA 4233	Introduction to Programming and Data Management in R	
MS 3083	Data Management for Business Analytics	
Two of the following:		
MS 3073	Business Intelligence and Analytics	
MS 3313	Multivariate Statistics for Business Analytics	
MS 4373	Data Mining for Business Analytics	
STA 3313	Experiments and Sampling	
STA 3333	Introduction to Data Science and Analytics	
STA 4143	Data Mining	

Code	Title	Credit Hours
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<b>Focus Option 2, Business Competency</b>		<b>9</b>
Complete a Business Competency. Students are recommended to select Analytics or Modeling. <sup>3</sup>		

<sup>1</sup> Semester credit hours for ACC 2013 and MS 3043 may be counted towards the Support Work requirement, as part of the Common Body of Knowledge.

<sup>2</sup> Semester credit hours of ECO courses may be counted towards the Major requirement.

<sup>3</sup> Semester credit hours for ECO 3123 are counted towards the Major requirement.

### 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 1233	AIS: Business (core)	3
ECO 2023	Introductory Microeconomics (core, CBK, and major) <sup>1</sup>	3
MAT 1053 or MAT 1093	Mathematics for Business (core and CBK) <sup>1</sup> or Precalculus	3
WRC 1013	Freshman Composition I (core)	3
American History (core)		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

WRC 1023	Freshman Composition II (core)	3
MAT 1133 or MAT 1214	Calculus for Business (core and CBK) <sup>1</sup> or Calculus I	3
ECO 2013	Introductory Macroeconomics (CBK and major)	3
IS 1413	Excel for Business Information Systems (CBK)	3
Language, Philosophy & Culture (core)		3
<b>Credit Hours</b>		<b>15</b>

##### Second Year

###### Fall

ECO 3113	Introduction to Mathematical Economics (major)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
ACC 2013	Principles of Accounting I (CBK)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
American History (core)		3
<b>Credit Hours</b>		<b>15</b>

###### Spring

ECO 3013	Intermediate Microeconomics (major)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
ACC 2033	Principles of Accounting II (CBK)	3
FIN 3013	Principles of Business Finance (CBK)	3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>

**Third Year**

**Fall**

ECO 3053	Intermediate Macroeconomics (major)	3
ECO 3123	Introduction to Econometrics (major)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
Creative Arts (core)		3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

MS 3053	Management Science and Operations Technology (CBK)	3
GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
Upper-division economics elective (3XXX or 4XXX level) (major)		3
Focus option or elective (free elective)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

**Fourth Year**

**Fall**

MKT 3013	Principles of Marketing (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
Upper-division economics elective (3XXX or 4XXX level) (major)		3
Upper-division economics elective (3XXX or 4XXX level) (major)		3
Focus option or elective (free elective)		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

MGT 4893	Management Strategy (CBK)	3
Upper-division economics elective (3XXX or 4XXX level) (major)		3
Upper-division economics elective (3XXX or 4XXX level) (major)		3
Focus option or elective (free elective)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120</b>

<sup>1</sup> Carlos Alvarez College of Business students should take MAT 1053 (or MAT 1093), MAT 1133 (or MAT 1214), 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 (or MAT 1093) and MAT 1133 (or MAT 1214) 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 Carlos Alvarez College of Business require 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
<b>Total Credit Hours</b>	<b>42</b>

## Gateway Course

Students pursuing the B.A. degree in Economics must successfully complete the business math gateway course MAT 1053 (TCCN MATH 1324) or equivalent 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 by taking an equivalent course at another institution, will be required to change his, her or their major outside of business. **Upon the second failed attempt students will be changed to undeclared (UND) and will not be eligible for a Bachelor of Business Administration (B.B.A) or a Bachelor of Arts in Economics degree.**

Code	Title	Credit Hours
MAT 1053	Mathematics for Business	3

## Degree Requirements

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

Code	Title	Credit Hours
<b>A. Major Requirements</b>		<b>33</b>
ECO 2013	Introductory Macroeconomics	
ECO 2023	Introductory Microeconomics <sup>1</sup>	
ECO 3013	Intermediate Microeconomics	
ECO 3053	Intermediate Macroeconomics	
ECO 3113	Introduction to Mathematical Economics	
ECO 3123	Introduction to Econometrics	
15 semester credit hours in upper-division Economics electives		
<b>B. Support Work</b>		<b>9-10</b>
Option 1.		

MAT 1053	Mathematics for Business
MAT 1133	Calculus for Business
Option 2. Quantitative pathway <sup>2</sup>	
MAT 1093	Precalculus
MAT 1214	Calculus I
and	
STA 3003	Applied Statistics
or MS 3043	Business Statistics with Computer Applications II

**C. Free Electives 45-44**

45 semester credit hours of free electives (or 44 semester credit hours if MAT 1214 is completed instead of MAT 1133), of which 12 semester credit hours must be at the upper-division level

**Recommendations:**

To help satisfy the Free Electives requirement, students are recommended to complete one or more of the Focus Options listed in the tables below. <sup>3</sup>

Students may consider completing a minor in a quantitative discipline such as Statistics, Mathematics, or Computer Science, or a minor in a related social science such as Political Science, Sociology, or Psychology.

Students interested in pursuing a Ph.D. in Economics or Finance should inform the chair of the Economics department. To be a competitive candidate for admission to a Ph.D. program, students are strongly recommended to complete the Economics Pre-Ph.D. option. A minor in Mathematics is also advisable.

**Total Credit Hours 87**

- <sup>1</sup> ECO 2023 is also used to satisfy Core requirement in Social and Behavioral Sciences.
- <sup>2</sup> Students considering a quantitative pathway through the degree should consider choosing MAT 1093 and MAT 1214.
- <sup>3</sup> If applicable, a course appearing under a focus option may be counted toward Major or Support Work requirements and not as a free elective. Note that an individual focus option may not exhaust the semester credit hours available for free electives. Semester credit hours required to achieve the total of 120 semester credit hours for the degree can be completed by way of one or more focus options, or by using any other combination of free electives.

**Focus Options**

A Focus Option is a pathway of courses connected by a theme, to support the degree planning of a student. One or more Focus Options may be pursued to help satisfy the Free Electives requirement.

If applicable, a course appearing under a focus option may be counted towards the Major or Support Work requirements instead of the Free Elective requirement. Completion of a Focus Option may not exhaust the semester credit hours available for free electives. Focus Options will not appear on the transcript or diploma.

Code	Title	Credit Hours
<b>Focus Option 1, Quantitative Economics and Analytics 27</b>		
ACC 2013	Principles of Accounting I	
STA 3003	Applied Statistics <sup>1</sup>	
or MS 3043	Business Statistics with Computer Applications II	

IS 2053	Programming Languages I with Scripting
Two of the following: <sup>2</sup>	
ECO 4413	Game Theory
ECO 4513	Industrial Organization
ECO 4553	Public Economics
ECO 4583	Labor Economics
ECO 4813	Seminar on Research in Economics
One of the following:	
STA 4133	Introduction to Programming and Data Management in SAS
STA 4233	Introduction to Programming and Data Management in R
MS 3083	Data Management for Business Analytics
Three of the following:	
MS 3073	Business Intelligence and Analytics
MS 3313	Multivariate Statistics for Business Analytics
MS 4373	Data Mining for Business Analytics
STA 3313	Experiments and Sampling
STA 3333	Introduction to Data Science and Analytics
STA 4143	Data Mining

Code	Title	Credit Hours
<b>Focus Option 2, Human and Social Well-being 24</b>		
Two of the following:		
SOC 1013	Introduction to Sociology	
GES 2623	Human Geography: People, Place, Culture	
PSY 1013	Introduction to Psychology	
Four of the following: <sup>2</sup>		
ECO 3233	Health Economics and Policy	
ECO 3253	Economics of Public and Social Issues	
ECO 3413	Environmental Economics	
ECO 3513	Economics of Migration	
ECO 4233	Behavioral Economics and Finance	
ECO 4303	Development Economics	
ECO 4553	Public Economics	
ECO 4583	Labor Economics	
Four of the following, with no more than two from the same department:		
GES 3533	Geography of Local Economic Activity	
GES 3573	Urban Planning and Development	
GES 3613	Conservation of Resources	
GES 3633	Geography of Globalization and Development	
GES 3733	Urban and Regional Analysis	
POL 3483	International Political Economy	
POL 3553	The Welfare State in Comparative Perspective	
POL 3633	Political Economy	
POL 3763	Globalization	
PSY 2533	Social Psychology	
PSY 2563	Cognitive Psychology	
PSY 3203	Industrial and Organizational Psychology	



SOC 3193	The Sociology of Work and Occupations
SOC 3283	Poverty

Code	Title	Credit Hours
<b>Focus Option 3, Economics Pre-Ph.D.</b>		<b>30</b>
MAT 1214	Calculus I <sup>1</sup>	
MAT 1224	Calculus II	
MAT 2214	Calculus III	
MAT 2233	Linear Algebra	
STA 3003	Applied Statistics <sup>1</sup>	
STA 3513	Probability and Statistics	
STA 3523	Mathematical Statistics	
IS 2053	Programming Languages I with Scripting	
ECO 4813	Seminar on Research in Economics <sup>2</sup>	

Code	Title	Credit Hours
<b>Focus Option 4, Economics and Machine Learning/Artificial Intelligence</b>		<b>21-20</b>
MAT 1214	Calculus I <sup>1</sup>	
MAT 1224	Calculus II	
ECO 4413	Game Theory <sup>2</sup>	
One of the following:		
CS 1083	Programming I for Computer Scientists	
IS 2053	Programming Languages I with Scripting	
One of the following:		
CS 1714	Computer Programming II	
IS 2063	Programming Languages II with Java	
One of the following:		
CS 3793	Artificial Intelligence	
CS 4253	Machine Learning	
CS 4263	Deep Learning	
IS 4043	Natural Language Processing	

Code	Title	Credit Hours
<b>Focus Option 5, Business Competency</b>		<b>9</b>
Complete a Business Competency. Students are recommended to select Analytics or Modeling. <sup>3</sup>		

- <sup>1</sup> Semester credit hours for STA 3003 and MAT 1214 may be counted towards the Support Work requirement.
- <sup>2</sup> Semester credit hours for ECO courses may be counted towards the Major requirement.
- <sup>3</sup> Semester credit hours for ECO 3123 are counted towards the Major requirement.

### 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		Credit Hours
<b>Fall</b>		
AIS 1233	AIS: Business	3
WRC 1013	Freshman Composition I (core)	3
MAT 1053 or MAT 1093	Mathematics for Business (core and support work) <sup>1</sup> or Precalculus	3
ECO 2023	Introductory Microeconomics (core and major) <sup>1</sup>	3
American History (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
ECO 2013	Introductory Macroeconomics (major)	3
WRC 1023	Freshman Composition II (core)	3
MAT 1133 or MAT 1214	Calculus for Business (core and support work) <sup>1</sup> or Calculus I	3
Language, Philosophy & Culture (core)		3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Second Year</b>		
<b>Fall</b>		
ECO 3113	Introduction to Mathematical Economics (major)	3
STA 3003	Applied Statistics (support work)	3
Focus option or elective (free elective)		3
American History (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
ECO 3013	Intermediate Microeconomics (major)	3
Life & Physical Sciences (core)		3
Focus option or elective (free elective)		3
Focus option or elective (free elective)		3
Focus option or elective (free elective)		3
<b>Credit Hours</b>		<b>15</b>
<b>Third Year</b>		
<b>Fall</b>		
ECO 3053	Intermediate Macroeconomics (major)	3
ECO 3123	Introduction to Econometrics (major)	3
Focus option or elective (free elective)		3
Creative Arts (core)		3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
Upper-division ECO elective (3XXX or 4XXX level) (major)		3

Upper-division ECO elective (3XXX or 4XXX level) (major)	3
Upper-division focus option or elective (free elective)	3
Focus option or elective (free elective)	3
Focus option or elective (free elective)	3

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<b>Credit Hours</b>	<b>15</b>
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**Fourth Year****Fall**

Upper-division ECO elective (3XXX or 4XXX level) (major)	3
Upper-division ECO elective (3XXX or 4XXX level) (major)	3
Upper-division focus option or elective (free elective)	3
Focus option or elective (free elective)	3
Focus option or elective (free elective)	3

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<b>Credit Hours</b>	<b>15</b>
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**Spring**

Upper-division ECO elective (3XXX or 4XXX level) (major)	3
Upper-division focus option or elective (free elective)	3
Upper-division focus option or elective (free elective)	3
Focus option or elective (free elective)	3
Focus option or elective (free elective)	3

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<b>Credit Hours</b>	<b>15</b>
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<b>Total Credit Hours</b>	<b>120</b>
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<sup>1</sup> Carlos Alvarez College of Business students should take MAT 1053 (or MAT 1093), MAT 1133 (or MAT 1214), 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.

Code	Title	Credit Hours
<b>A. Required courses</b>		<b>6</b>
ECO 2013	Introductory Macroeconomics	
ECO 2023	Introductory Microeconomics	
<b>B. Upper-division economics courses</b>		<b>12</b>
Select 12 additional semester credit hours of upper-division economics courses		
<b>Total Credit Hours</b>		<b>18</b>

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 Carlos Alvarez 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. 35)
- B.B.A. degree in Real Estate Finance and Development (p. 38)

## 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 1053, 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 Carlos Alvarez College of Business require 120 hours. If students elect to take a course that satisfies both a Core and CACOB 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
<b>Total Credit Hours</b>	<b>42</b>

**Common Body of Knowledge (CBK)**

All students seeking a B.B.A. degree in the Carlos Alvarez 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
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 or IS 1413	Business Information Systems Fluency Excel for Business Information Systems	3
IS 3003	Principles of Information Systems for Management	3
MAT 1053	Mathematics for Business (satisfies Mathematics Core Curriculum requirement. This course is not required for Actuarial Science majors) <sup>1</sup>	3
MAT 1133	Calculus for Business (satisfies Mathematics or Component Area Option 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
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**Note: Students majoring in Actuarial Science, Economics, Finance, Operations and Supply Chain Management and Business Analytics are strongly encouraged to select IS 1413 Excel for Business Information Systems. IS 1413 is required for Accounting majors.**

<sup>1</sup> Students may elect to substitute MAT 1093 Precalculus for MAT 1053 Mathematics for Business. Students electing to take MAT 1093 will need to meet prerequisites or achieve satisfactory performance on a placement examination. Visit UTSA Testing Services for more information regarding math placement exams.

In addition to the Core Curriculum requirements and requirements from the Carlos Alvarez 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, whether they are a declared major or a business studies pathway student, must successfully complete the business math gateway course MAT 1053 (TCCN MATH 1324) or equivalent 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 by taking an equivalent course at another institution, will be required to change his, her or their major outside of business. **Upon the second failed attempt students will be changed to undeclared (UND) and will not be eligible for a Bachelor of Business Administration (B.B.A) or a Bachelor of Arts in Economics degree.**

Code	Title	Credit Hours
MAT 1053	Mathematics for Business	3

**Degree Requirements**

Code	Title	Credit Hours
<b>A. Major Requirements</b>		<b>33</b>

21 credit hours in upper-division Finance required courses		
FIN 3013	Principles of Business Finance (CBK and Major)	
ACC 3053	Intermediate Accounting for Finance Majors <sup>1</sup>	
FIN 3023	Intermediate Corporate Finance <sup>2</sup>	
FIN 3033	Principles of Investment	
FIN 3313	Money and Banking	
FIN 3063	Computer Modeling of Financial Applications (Computer Modeling of Financial Applications)	
FIN 4893	Cases and Problems in Finance	

12 credit hours in upper-division Finance electives (Neither FIN 3003 Survey of Finance nor FIN 3053 Principles of Personal Finance, may be applied to meeting this requirement). Students may take any finance elective course to satisfy this requirement. If the student chooses to take at least four courses from one track, they may have the track designation indicated in their transcripts.<sup>3, 4, 5</sup>

Option 1 - Corporate Finance/Investment Banking Track: Choose four courses from among the courses indicated below:

FIN 3463	Debt Markets
FIN 3453	Derivative Markets
FIN 3423	Security Analysis and Corporate Valuation (and Corporate Valuation)
FIN 4333	Business Finance for Entrepreneurs
FIN 4523	Introduction to Risk Management
FIN 4613	Introduction to International Finance
FIN 4913	Independent Study
FIN 4933	Internship in Finance <sup>7</sup>

Option 2 - Investment Management Track: Choose four courses from among the courses indicated below:

FIN 3463	Debt Markets
FIN 3423	Security Analysis and Corporate Valuation (and Corporate Valuation)
FIN 3453	Derivative Markets
FIN 4423	Investment Portfolio Management
FIN 4523	Introduction to Risk Management
FIN 4913	Independent Study
FIN 4933	Internship in Finance <sup>7</sup>
FIN 4613	Introduction to International Finance
FIN 4543	Credit Analysis

Option 3 - Financial Institutions Track: Choose four courses from among the courses indicated below:

FIN 4323	Financial Institutions Management
FIN 3423	Security Analysis and Corporate Valuation (and Corporate Valuation)
FIN 3463	Debt Markets
FIN 3453	Derivative Markets
FIN 4523	Introduction to Risk Management
FIN 4813	Property-Liability Insurance Finance
FIN 4823	Life and Health Insurance Finance
FIN 4913	Independent Study
FIN 4933	Internship in Finance <sup>7</sup>
FIN 4543	Credit Analysis

## B. Support Work 54

Business Common Body of Knowledge (51 SCH) (9 SCH satisfy core curriculum requirements and 3 SCH satisfy Major Requirement)

Students may select 6 semester credit hours of lower-division or upper-division business electives. Students can take any business electives to satisfy this requirement (Neither FIN 3003 Survey of Finance nor FIN 3053 Principles of Personal Finance may be applied to meeting this requirement). The finance department recommends that students use these hours to take courses in one particular Competency. While students can take courses in any competency, the finance department recommends international business, entrepreneurship, risk management, modeling, and data analytics. If a student does not wish to take courses for a particular competency, the department recommends that students take additional electives in their chosen track, including an internship course (FIN 4933). <sup>3,6,7</sup>

**Total Credit Hours** **87**

- <sup>1</sup> Finance majors may take ACC 3023 and ACC 3033 in lieu of ACC 3053. Students choosing to take ACC 3023 and ACC 3033 can apply the extra 3 hours towards the free electives in part C.
- <sup>2</sup> Clearing the FACT exam is a prerequisite to enrollment in FIN 3023.

- <sup>3</sup> FIN 3003 Survey of Finance and FIN 3053 Introduction to Personal Finance may not be applied to meeting this requirement.
- <sup>4</sup> If a student chooses to take at least four courses from one track they may have the track designation indicated on their transcript. The track designation will not appear on the diploma.
- <sup>5</sup> All Finance Majors are encouraged to take Security Analysis and Corporate Valuation (FIN 3423) as one of the Upper-division FIN elective courses regardless of whether they pursue a track or not.
- <sup>6</sup> 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 international business, entrepreneurship, risk management, modeling, and analytics are recommended.
- <sup>7</sup> If a student does not wish to take courses in a particular competency, the Finance department recommends they take an internship course (FIN 4933) 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 <sup>1</sup>

#### First Year

Fall		Credit Hours
AIS 1233	AIS: Business	3
MAT 1053	Mathematics for Business (core and CBK) <sup>2</sup>	3
WRC 1013	Freshman Composition I (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

#### Spring

MAT 1133	Calculus for Business (core and CBK) <sup>2</sup>	3
WRC 1023	Freshman Composition II (core)	3
IS 1403	Business Information Systems	3
or IS 1413	Fluency (CBK) or Excel for Business Information Systems	
ECO 2023	Introductory Microeconomics (core and CBK) <sup>2</sup>	3
ACC 2013	Principles of Accounting I (CBK)	3
<b>Credit Hours</b>		<b>15</b>

#### Second Year

##### Fall

MS 1023	Business Statistics with Computer Applications I (CBK)	3
ECO 2013	Introductory Macroeconomics (CBK)	3

ACC 2033	Principles of Accounting II (CBK)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3

**Credit Hours 15**

**Spring**

MKT 3013	Principles of Marketing (CBK)	3
MS 3053	Management Science and Operations Technology	3
FIN 3013	Principles of Business Finance (CBK and Major) <sup>3</sup>	3
GBA 2013	Legal, Social and Ethical Issues in Business	3
MGT 3003	Business Communication and Professional Development (CBK)	3

**Credit Hours 15**

**Third Year**

**Fall**

ACC 3053	Intermediate Accounting for Finance Majors (major) <sup>4</sup>	3
FIN 3063	Computer Modeling of Financial Applications (Computer Modeling of Financial Applications - (Major))	3
FIN 3313	Money and Banking (major)	3
FIN 3033	Principles of Investment (major)	3
Life & Physical Science (core)		3

**Credit Hours 15**

**Spring**

FIN 3023	Intermediate Corporate Finance (major; students are required to clear the FACT exam before enrolling FIN3023)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
Upper-division FIN elective (3xxx or 4xxx level) or course in a finance track (major) <sup>5</sup>		3
Creative Arts (core)		3
American History (core)		3

**Credit Hours 15**

**Fourth Year**

**Fall**

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
Free Elective in Part C (lower or upper-division business electives)		3
Government-Political Science (core)		3
Language, Philosophy & Culture (core)		3

**Credit Hours 15**

**Spring**

FIN 4893	Cases and Problems in Finance (major)	3
MGT 4893	Management Strategy (CBK)	3

Upper-division FIN elective (3XXX or 4XXX level) or course in a finance track (major)	3
Free Elective in Part C (lower or upper-division business electives)	3
Government-Political Science (core)	3

**Credit Hours 15**

**Total Credit Hours 120**

- <sup>1</sup> All CBK courses are part of support work in Part B of the Degree Requirements.
- <sup>2</sup> Carlos Alvarez College of Business students should take MAT 1053, MAT 1133, and ECO 2023 to satisfy both Core Curriculum and CBK requirements.
- <sup>3</sup> FIN 3013 satisfies both CBK (Part B) and Major Requirements (Part A) for BBA-Finance majors.
- <sup>4</sup> Finance majors may take ACC 3023 and ACC 3033 in lieu of ACC 3053. Students choosing to take ACC 3023 and ACC 3033 can apply the extra 3 hours towards the free electives in part C.
- <sup>5</sup> All Finance Majors are encouraged to take Security Analysis and Corporate Valuation (FIN 3423) as the Upper-division FIN elective course here.

## 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 1053, 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 Carlos Alvarez College of Business require 120 hours. If students elect to take a course that satisfies both a Core and CACOB 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
<b>Total Credit Hours</b>	<b>42</b>

## Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the Carlos Alvarez 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
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 or IS 1413	Business Information Systems Fluency Excel for Business Information Systems	3
IS 3003	Principles of Information Systems for Management	3
MAT 1053	Mathematics for Business (satisfies Mathematics Core Curriculum requirement. This course is not required for Actuarial Science majors) <sup>1</sup>	3
MAT 1133	Calculus for Business (satisfies Mathematics or Component Area Option 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 Actuarial Science, Economics, Finance, Operations and Supply Chain Management and Business Analytics are strongly encouraged to select IS 1413 Excel for Business Information Systems. IS 1413 is required for Accounting majors.**

<sup>1</sup> Students may elect to substitute MAT 1093 Precalculus for MAT 1053 Mathematics for Business. Students electing to take MAT 1093 will need to meet prerequisites or achieve satisfactory performance on a placement examination. Visit UTSA Testing Services for more information regarding math placement exams.

In addition to the Core Curriculum requirements and requirements from the Carlos Alvarez 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, whether they are a declared major or a business studies pathway student, must successfully complete the business math gateway course MAT 1053 (TCCN MATH 1324) or equivalent 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 by taking an equivalent course at another institution, will be required to change his, her or their major outside of business. **Upon the second failed attempt students will be changed to undeclared (UND) and will not be eligible for a Bachelor of Business Administration (B.B.A) or a Bachelor of Arts in Economics degree.**

Code	Title	Credit Hours
MAT 1053	Mathematics for Business	3

## Degree Requirements

Code	Title	Credit Hours
<b>A. Major Requirements</b>		<b>24</b>

18 credit hours in upper-division Finance require courses

FIN 3433	Principles of Real Estate
FIN 4713	Mortgage Banking and Real Estate Finance
FIN 4723	Principles of Real Estate Investment
RFD 3523	Real Estate Law
RFD 3533	Principles of Construction for Real Estate Professionals
RFD 4733	Principles of Sustainable Real Estate Development

6 semester credit hours of additional real estate (RFD) courses

**B. Support Work** **51**

Business Common Body of Knowledge (51 SCH) (9 SCH satisfy core curriculum requirements)

**C. Free Electives**<sup>1</sup> **12**

Option 1: Complete a Finance Track (9 semester credit hours of track courses) and 3 hours of free electives

Option 2: Complete a Business Competency (9 semester credit hours in a competency) and 3 hours of free electives

Option 3: Complete 12 semester credit hours of free electives

**Total Credit Hours** **87**

<sup>1</sup> 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 1233	AIS: Business	3
MAT 1053	Mathematics for Business (core and CBK)	3
WRC 1013	Freshman Composition I (core)	3
American History (core)		3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

MAT 1133	Calculus for Business (core and CBK) <sup>1</sup>	3
WRC 1023	Freshman Composition II (core)	3
ECO 2023	Introductory Microeconomics (core and CBK) <sup>1</sup>	3
IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3
ACC 2013	Principles of Accounting I (CBK)	3
<b>Credit Hours</b>		<b>15</b>

##### Second Year

Fall		Credit Hours
ACC 2033	Principles of Accounting II (CBK)	3
ECO 2013	Introductory Macroeconomics (CBK)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
MGT 3003	Business Communication and Professional Development	3
<b>Credit Hours</b>		<b>15</b>

##### Spring

FIN 3013	Principles of Business Finance (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
MKT 3013	Principles of Marketing (CBK)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>

##### Third Year

###### Fall

FIN 3433	Principles of Real Estate (major)	3
RFD 3523	Real Estate Law (major)	3
GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
MS 3053	Management Science and Operations Technology (CBK)	3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>

###### Spring

FIN 4713	Mortgage Banking and Real Estate Finance <sup>2</sup>	3
RFD 3533	Principles of Construction for Real Estate Professionals (major)	3
Upper-division RFD (3XXX or 4XXX level) (support work in major)		3
Language, Philosophy & Culture (core)		3
Finance track course, business competency course, or free elective (additional support work)		3
<b>Credit Hours</b>		<b>15</b>

##### Fourth Year

###### Fall

FIN 4723	Principles of Real Estate Investment <sup>3</sup>	3
Upper-division RFD (3XXX or 4XXX level) elective (support work in major)		3
Finance track course, business competency course, or free elective (additional support work)		3
Finance track course, business competency course, or free elective (additional support work)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

###### 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 (additional support work)		3
American History (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120</b>



- <sup>1</sup> Carlos Alvarez College of Business students should take MAT 1053, MAT 1133 and ECO 2023 to satisfy both Core Curriculum and CBK requirements.
- <sup>2</sup> Clearing the FACT exam is a prerequisite to enrollment in FIN 4713.
- <sup>3</sup> Clearing the FACT exam is a prerequisite to enrollment in FIN 4723.

## 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.

Code	Title	Credit Hours
<b>A. Required courses</b>		<b>9</b>
FIN 3013	Principles of Business Finance	
FIN 3033	Principles of Investment	
FIN 3313	Money and Banking	
<b>B. Upper-division finance electives</b>		<b>9</b>
Select 9 additional semester credit hours of upper-division finance electives. Neither FIN 3003 Survey of Finance nor FIN 3053 Principles of Personal Finance, may be applied to meeting this requirement.		
<b>Total Credit Hours</b>		<b>18</b>

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

## Department of Information Systems and Cyber Security

### Mission Statement

The mission of the Department of Information Systems and Cyber Security is to offer graduate and undergraduate programs of high quality. The programs meet the needs of students preparing for professional careers in the fields of information systems or cyber security. This mission includes providing a broad-based education through the university's core curriculum as well as education in current business and information systems or cyber security topics.

The department is responsive to the needs of employers and other constituents of its programs. The department is aware of rapid changes to the technology. We incorporate these changes into the curriculum as is practical. The faculty assist in accomplishing the departmental mission through a planned integration of contributions in teaching, intellectual contributions and service.

The Department of Information Systems and Cyber Security offers three undergraduate degree programs: one with a major in Information Systems, one with a major in Cyber Security (which is also offered 100 percent online), and a third major in Applied Cyber Analytics. For admission requirements for the online B.B.A. degree in Cyber Security, please visit <https://online.utsa.edu/program/cyber-security/>. 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.

- B.B.A. degree in Information Systems (p. 41)
- B.B.A. degree in Cyber Security (p. 44)
- B.B.A. degree in Cyber Security Online (p. 44)
- B.S. degree in Applied Cyber Analytics (p. 47)

## 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 1053, 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 Carlos Alvarez College of Business require 120 hours. If students elect to take a course that satisfies both a Core and CACOB 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
<b>Total Credit Hours</b>	<b>42</b>

**Common Body of Knowledge (CBK)**

All students seeking a B.B.A. degree in the Carlos Alvarez 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
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 or IS 1413	Business Information Systems Fluency Excel for Business Information Systems	3
IS 3003	Principles of Information Systems for Management	3
MAT 1053	Mathematics for Business (satisfies Mathematics Core Curriculum requirement. This course is not required for Actuarial Science majors) <sup>1</sup>	3
MAT 1133	Calculus for Business (satisfies Mathematics or Component Area Option 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 Actuarial Science, Economics, Finance, Operations and Supply Chain Management and Business Analytics are strongly encouraged to select IS 1413 Excel for Business Information Systems. IS 1413 is required for Accounting majors.**

<sup>1</sup> Students may elect to substitute MAT 1093 Precalculus for MAT 1053 Mathematics for Business. Students electing to take MAT 1093 will need to meet prerequisites or achieve satisfactory performance on a placement examination. Visit UTSA Testing Services for more information regarding math placement exams.

In addition to the Core Curriculum requirements and the Carlos Alvarez 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, whether they are a declared major or a business studies pathway student, must successfully complete the business math gateway course MAT 1053 (TCN MATH 1324) or equivalent 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 by taking an equivalent course at another institution, will be required to change his, her or their major outside of business. **Upon the second failed attempt students will be changed to undeclared (UND) and will not be eligible for a Bachelor of Business Administration (B.B.A) or a Bachelor of Arts in Economics degree.**

Code	Title	Credit Hours
MAT 1053	Mathematics for Business	3

**Degree Requirements**

Code	Title	Credit Hours
<b>A. Major Requirements</b>		<b>27</b>
IS 1003	Unlocking Cyber	
IS 2053	Programming Languages I with Scripting	
IS 2063	Programming Languages II with Java	
IS 3063	Database Management for Information Systems	
IS 3073	Application Development	
IS 3413	Telecommunications and Networking	
IS 4053	Systems Analysis and Design	
IS 4063	Advanced Topics in Information Systems	
IS 4233	Cloud Computing	
<b>B. Support Work</b>		<b>60</b>
Business Common Body of Knowledge (51 SCH) (9 SCH Satisfy Core Curriculum Requirements)		
<b>Option 1. Non-Track</b>		

Students not selecting a track must complete 9 semester credit hours of upper-division IS courses which may include only ONE of the following two course choices:

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

**Option 2. Track****IT Project Management Track**

Choose three courses from the list below:

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

**Analytics Track**

Choose three courses from the list below:

IS 4023 Applied Big Data with Machine Learning  
IS 4043 Natural Language Processing  
IS 4183 Advanced Database Concepts and Applications  
MS 3003 Visualization in Business Analytics  
MS 3073 Business Intelligence and Analytics

**Pre-Ph.D. Track**

GBA 3013 Introduction to Academic Research  
GBA 4993 Honors Thesis (6 hours)

**Total Credit Hours** **87**

## 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**

		Credit Hours
<b>Fall</b>		
AIS 1233	AIS: Business	3
MAT 1053	Mathematics for Business (core and CBK)	3
WRC 1013	Freshman Composition I (core)	3
IS 1003	Unlocking Cyber (major)	3
American History (core)		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

MAT 1133	Calculus for Business (core and CBK) <sup>1</sup>	3
WRC 1023	Freshman Composition II (core)	3

IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3
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IS 2053	Programming Languages I with Scripting (major)	3
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American History (core)		3
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**Credit Hours** **15**

**Second Year****Fall**

ACC 2013	Principles of Accounting I (CBK)	3
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ECO 2013	Introductory Macroeconomics	3
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IS 2063	Programming Languages II with Java (major)	3
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MS 1023	Business Statistics with Computer Applications I (CBK)	3
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Creative Arts (core)		3
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**Credit Hours** **15**

**Spring**

ACC 2033	Principles of Accounting II (CBK)	3
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ECO 2023	Introductory Microeconomics	3
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IS 3003	Principles of Information Systems for Management (CBK)	3
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MS 3043	Business Statistics with Computer Applications II (CBK)	3
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MGT 3003	Business Communication and Professional Development (CBK)	3
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**Credit Hours** **15**

**Third Year****Fall**

IS 3063	Database Management for Information Systems (major)	3
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IS 3413	Telecommunications and Networking (major)	3
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MS 3053	Management Science and Operations Technology (CBK)	3
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Language, Philosophy & Culture (core)		3
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Life & Physical Sciences (core)		3
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**Credit Hours** **15**

**Spring**

IS 3073	Application Development (major)	3
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FIN 3013	Principles of Business Finance (CBK)	3
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IS 4233	Cloud Computing	3
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MKT 3013	Principles of Marketing	3
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Life & Physical Sciences (core)		3
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**Credit Hours** **15**

**Fourth Year****Fall**

IS 4053	Systems Analysis and Design (major)	3
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GBA 2013	Legal, Social and Ethical Issues in Business	3
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MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
Upper-division IS elective (3XXX or 4XXX level) (support work in major)		3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
IS 4063	Advanced Topics in Information Systems (major)	3
MGT 4893	Management Strategy (CBK)	3
Upper-division IS elective (3XXX or 4XXX level) (support work in major)		3
Upper-division IS elective (3XXX or 4XXX level) (support work in major)		3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120</b>

<sup>1</sup> Carlos Alvarez College of Business students should take MAT 1053, 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.

The B.B.A. degree in Cyber Security is also offered in a 100 percent online format. Students pursuing the 100 percent online format must fulfill all degree requirements in the same manner as residential students, however, the tracks are not offered in the 100 percent online format. Online students must select the non-track option (Option 1).

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 1053, 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 Carlos Alvarez College of Business require 120 hours. If students elect to take a course that satisfies both a Core and CACOB requirement, students may need to take an additional course to meet the 120 hours.

<b>Core Curriculum Component Area Requirements (p. 7)</b>	
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
<b>Total Credit Hours</b>	<b>42</b>

### Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the Carlos Alvarez 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
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 1053	Mathematics for Business (satisfies Mathematics Core Curriculum requirement. This course is not required for Actuarial Science majors) <sup>1</sup>	3
MAT 1133	Calculus for Business (satisfies Mathematics or Component Area Option 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 Actuarial Science, Economics, Finance, Operations and Supply Chain Management and Business Analytics are strongly encouraged to select IS 1413 Excel for Business Information Systems. IS 1413 is required for Accounting majors.**

<sup>1</sup> Students may elect to substitute MAT 1093 Precalculus for MAT 1053 Mathematics for Business. Students electing to take MAT 1093 will need to meet prerequisites or achieve satisfactory performance on a placement examination. Visit UTSA Testing Services for more information regarding math placement exams.

In addition to the Core Curriculum requirements and the Carlos Alvarez 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, whether they are a declared major or a business studies pathway student, must successfully complete the business math gateway course MAT 1053 (TCN MATH 1324) or equivalent 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 by taking an equivalent course at another institution, will be required to change his, her or their major outside of business. **Upon the second failed attempt students will be changed to undeclared (UND) and will not be eligible for a Bachelor of Business Administration (B.B.A) or a Bachelor of Arts in Economics degree.**

Code	Title	Credit Hours
MAT 1053	Mathematics for Business	3

## Degree Requirements

Code	Title	Credit Hours
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### A. Major Requirements

Code	Title	Credit Hours
IS 1003	Unlocking Cyber	27
IS 2053	Programming Languages I with Scripting	
IS 2063	Programming Languages II with Java	
IS 3033	Operating Systems Security	
IS 3413	Telecommunications and Networking	
IS 3423	Network Security	
IS 3513	Information Assurance and Security	
IS 3523	Intrusion Detection and Incident Response	
IS 4893	Cyber Security Capstone	

### B. Support Work

Business Common Body of Knowledge (51 SCH) (9 SCH Satisfy Core Curriculum Requirements)

#### Option 1. Non-Track (students in the 100 percent online program must choose this option)

Choose 3 courses from the list below:		
IS 3043	Secure Mobile App Development	60
IS 3433	Cyber Crime Investigation Principles	
IS 3453	Networking Fundamentals	
IS 3533	Cyber Law and Legal System	
IS 3833	Cyber Operations	
IS 4043	Natural Language Processing	

IS 4143	Wide Area Networks
IS 4223	Emerging Network Technologies
IS 4233	Cloud Computing
IS 4463	Web Application Security
IS 4473	Cyber Security Policy, Compliance, and Risk Assessment
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 I
IS 4913	Independent Study
IS 4943	Internship in Cyber Security
IS 4083	Agile Project Management
or MOT 4023	Essentials of Technology Management
or MOT 4143	Introduction to Project Management
IS 4553	Cyber Attack and Defend II
IS 4563	Mobile Forensics

#### Option 2. Track

##### Cyber Operator Track (9 semester credit hours)

Choose 3 courses from the list below:

IS 3833	Cyber Operations
IS 4483	Digital Forensic Analysis I
IS 4513	Industrial Control Systems
IS 4543	Cyber Attack and Defend I
IS 4553	Cyber Attack and Defend II

##### Cyber Policy and Strategy Planner Track (9 semester credit hours)

Choose 3 courses from the list below:

IS 3533	Cyber Law and Legal System
IS 4223	Emerging Network Technologies
IS 4473	Cyber Security Policy, Compliance, and Risk Assessment
MOT 4023	Essentials of Technology Management

##### Forensics Analyst Track (9 semester credit hours)

Choose 3 courses from the list below:

IS 3433	Cyber Crime Investigation Principles
IS 4483	Digital Forensic Analysis I
IS 4523	Digital Forensic Analysis II
IS 4533	Malware Analysis

##### Network Operations Specialist Track (9 semester credit hours)

Choose 3 courses from the list below:

IS 3453	Networking Fundamentals
IS 4143	Wide Area Networks
IS 4223	Emerging Network Technologies
IS 4233	Cloud Computing
IS 4513	Industrial Control Systems

##### Secure Software Analyst Track (9 semester credit hours)

Choose 3 courses from the list below:

IS 3043	Secure Mobile App Development
IS 3073	Application Development
IS 4083	Agile Project Management
IS 4233	Cloud Computing



IS 4463	Web Application Security
IS 4533	Malware Analysis
<b>Pre-Ph.D. Track</b>	
GBA 3013	Introduction to Academic Research
GBA 4993	Honors Thesis (6 hours)
<b>Total Credit Hours</b>	<b>87</b>

## 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 1233	AIS: Business	3
MAT 1053	Mathematics for Business (core and CBK)	3
WRC 1013	Freshman Composition I (core)	3
IS 1003	Unlocking Cyber (major)	3
American History (core)		3
<b>Credit Hours</b>		<b>15</b>

#### Spring

ECO 2023	Introductory Microeconomics (core and CBK) <sup>1</sup>	3
IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3
IS 2053	Programming Languages I with Scripting (major)	3
MAT 1133	Calculus for Business (core and CBK) <sup>1</sup>	3
WRC 1023	Freshman Composition II (core)	3
<b>Credit Hours</b>		<b>15</b>

#### Second Year

Fall		Credit Hours
ACC 2013	Principles of Accounting I (CBK)	3
ECO 2013	Introductory Macroeconomics (CBK)	3
American History (core)		3
IS 2063	Programming Languages II with Java (major)	3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

#### Spring

IS 3003	Principles of Information Systems for Management (CBK)	3
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IS 3413	Telecommunications and Networking (major)	3
MGT 3003	Business Communication and Professional Development	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

#### Third Year

##### Fall

ACC 2033	Principles of Accounting II	3
IS 3033	Operating Systems Security (major)	3
IS 3513	Information Assurance and Security (major)	3
MS 3043	Business Statistics with Computer Applications II (CBK)	3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

IS 3423	Network Security (major)	3
IS 3523	Intrusion Detection and Incident Response (major)	3
FIN 3013	Principles of Business Finance (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
Language, Philosophy & Culture (core)		3
<b>Credit Hours</b>		<b>15</b>

#### Fourth Year

##### Fall

GBA 2013	Legal, Social and Ethical Issues in Business	3
MKT 3013	Principles of Marketing	3
Upper-division IS elective (support work in major) (must be approved Cyber Security content)		3
Upper-division IS elective (support work in major) (must be approved Cyber Security content)		3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

MGT 4893	Management Strategy (CBK)	3
MS 3053	Management Science and Operations Technology	3
IS 4893	Cyber Security Capstone	3
Upper-division IS elective (support work in major) (must be approved Cyber Security content)		3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120</b>

<sup>1</sup> Carlos Alvarez College of Business students should take MAT 1053, MAT 1133 and ECO 2023 to satisfy both Core Curriculum and CBK requirements.

## Bachelor of Science in Applied Cyber Analytics

The minimum number of semester credit hours for the Bachelor of Science degree in Applied Cyber Analytics 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.S. degree in Applied Cyber Analytics must fulfill University Core Curriculum requirements in the same manner as other students.

EGR 1403 should be used to satisfy the Component Area Option (090). MAT 1093 should be used to satisfy the core requirement in Mathematics (020).

All degrees in the Carlos Alvarez College of Business require 120 hours.

If students elect to take a course that satisfies both a Core and CACOB 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
<b>Total Credit Hours</b>	<b>42</b>

### Degree Requirements

Code	Title	Credit Hours
<b>A. Major Requirements</b>		<b>77</b>
<b>1. Mathematics and technical writing</b>		
EGR 1403	Technical Communication (satisfies Component Area Option Core Curriculum requirement) <sup>1</sup>	
MAT 1093	Precalculus (satisfies Mathematics Core Curriculum requirement) <sup>1</sup>	
MAT 1214	Calculus I	
MAT 1224	Calculus II	
MAT 4953	Special Studies in Mathematics (Topic: Vector Calculus)	
<b>2. Required quantitative courses</b>		
IS 3063	Database Management for Information Systems	
IS 4023	Applied Big Data with Machine Learning	
IS 4043	Natural Language Processing (Natural Language Processing)	

MS 3003	Visualization in Business Analytics
MS 3073	Business Intelligence and Analytics
MS 3313	Multivariate Statistics for Business Analytics
STA 3003	Applied Statistics
STA 4233	Introduction to Programming and Data Management in R

#### 3. Required cyber security courses

IS 1003	Unlocking Cyber
IS 2053	Programming Languages I with Scripting
IS 3033	Operating Systems Security
IS 3413	Telecommunications and Networking
IS 3423	Network Security
IS 3513	Information Assurance and Security
IS 3523	Intrusion Detection and Incident Response
IS 3833	Cyber Operations
IS 4233	Cloud Computing

#### 4. Required applied cyber analytics courses

IS 3543	Cyber Analytics Policy, Law and Ethics (Cyber analytics policy, law and ethics)
IS 4443	Cyber Analytics I (Cyber Analytics I)
IS 4503	Cyber Analytics II (Cyber Analytics II)

#### B. Support Work 6

Choose 2 courses from BBA Cyber Security Major support work list	
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**Total Credit Hours 83**

<sup>1</sup> EGR 1403 and MAT 1093 may be applied to 6 semester credit hours of the University Core Curriculum.

Students are highly encouraged to take Cyber Attack & Defend I & II (IS 4543 and IS 4553) as support work in major if they plan to pursue employment opportunities that involve proactive threat hunting, penetration testing, or intelligence analysis. Students are highly encouraged to take Application Development (IS 3073) as support work in major if they plan to pursue employment opportunities that involve programming and/or security development operations (secdevops).

### Course Sequence Guide for B.S. Degree in Applied Cyber Analytics

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
<b>Fall</b>		
AIS 1233	AIS: Business (core)	3
WRC 1013	Freshman Composition I (core)	3
MAT 1093	Precalculus (020 core) <sup>1</sup>	3

IS 1003	Unlocking Cyber	3
American History (060 core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
WRC 1023	Freshman Composition II (010 core)	3
MAT 1214	Calculus I	4
IS 2053	Programming Languages I with Scripting	3
American History (060 core)		3
Life & Physical Sciences (030 core)		3
<b>Credit Hours</b>		<b>16</b>
<b>Second Year</b>		
<b>Fall</b>		
EGR 1403	Technical Communication (CAO core) <sup>1</sup>	3
MAT 1224	Calculus II	4
IS 3413	Telecommunications and Networking	3
MS 3003	Visualization in Business Analytics	3
STA 3003	Applied Statistics	3
<b>Credit Hours</b>		<b>16</b>
<b>Spring</b>		
MAT 4953	Special Studies in Mathematics (Topic: Vector Calculus)	3
Language, Philosophy & Culture (040 core)		3
IS 3513	Information Assurance and Security	3
IS 3063	Database Management for Information Systems	3
STA 4233	Introduction to Programming and Data Management in R	3
<b>Credit Hours</b>		<b>15</b>
<b>Third Year</b>		
<b>Fall</b>		
IS 3423	Network Security	3
POL 1013	Introduction to American Politics (070 core)	3
MS 3073	Business Intelligence and Analytics	3
Life & Physical Sciences (030 core)		3
IS 4023	Applied Big Data with Machine Learning	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
IS 3523	Intrusion Detection and Incident Response	3
POL 1133	Texas Politics and Society (070 core)	3
MS 3313	Multivariate Statistics for Business Analytics	3
IS 3543	Cyber Analytics Policy, Law and Ethics	3
IS 4043	Natural Language Processing	3
<b>Credit Hours</b>		<b>15</b>

#### Fourth Year

##### Fall

IS 4233	Cloud Computing	3
IS 3033	Operating Systems Security	3
IS 4443	Cyber Analytics I	3
CYA Elective		3
Social & Behavioral Sciences (080 core)		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

IS 3833	Cyber Operations	3
IS 4503	Cyber Analytics II	3
CYA Elective		3
Creative Arts (050 core)		3
Free elective		1
<b>Credit Hours</b>		<b>13</b>

#### Total Credit Hours

**120**

- Minor in Cyber Security (p. 48)
- Minor in Digital Forensics (p. 49)
- Minor in Information Systems (p. 49)
- Minor in Network and Data Center Management (p. 49)
- Minor in Technology Management for Nonbusiness Majors (p. 49)

## 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.

Code	Title	Credit Hours
<b>A. Required courses</b>		<b>12</b>
IS 3413	Telecommunications and Networking	
IS 3423	Network Security	
IS 3513	Information Assurance and Security	
IS 3523	Intrusion Detection and Incident Response	
<b>B. Elective courses</b>		<b>6</b>
*Other majors may be required to take additional hours to meet prerequisites depending on their academic background.		
Select two of the following:		
IS 3033	Operating Systems Security	
IS 3043	Secure Mobile App Development	
IS 3073	Application Development	
IS 3433	Cyber Crime Investigation Principles	
IS 3453	Networking Fundamentals	
IS 3533	Cyber Law and Legal System	
IS 3833	Cyber Operations	
IS 4043	Natural Language Processing	
IS 4083	Agile Project Management	
IS 4143	Wide Area Networks	
IS 4223	Emerging Network Technologies	
IS 4233	Cloud Computing	
IS 4463	Web Application Security	
IS 4473	Cyber Security Policy, Compliance, and Risk Assessment	

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 I
IS 4553	Cyber Attack and Defend II
IS 4563	Mobile Forensics
<b>Total Credit Hours</b>	<b>18</b>

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 and Cyber Security will be required to take 18 semester credit hours of coursework.

Code	Title	Credit Hours
<b>Required courses</b>		<b>12</b>
IS 3433	Cyber Crime Investigation Principles	
IS 3533	Cyber Law and Legal System	
IS 4483	Digital Forensic Analysis I	
IS 4523	Digital Forensic Analysis II	
*Other majors may be required to take additional hours to meet prerequisites depending on their academic background.		
<b>Elective courses-Select two from the following courses:</b>		<b>6</b>
CRJ 3233	Introduction to Forensic Science	
IS 3523	Intrusion Detection and Incident Response	
IS 4533	Malware Analysis	
IS 4563	Mobile Forensics	
<b>Total Credit Hours</b>		<b>18</b>

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 Carlos Alvarez College of Business is 18. Other students may be required to take additional hours depending on their academic background.

Code	Title	Credit Hours
<b>Required courses</b>		<b>18</b>
IS 1003	Unlocking Cyber	
IS 2053	Programming Languages I with Scripting	
IS 3003	Principles of Information Systems for Management	
IS 3063	Database Management for Information Systems	
IS 3413	Telecommunications and Networking	

IS 4053	Systems Analysis and Design
<b>Total Credit Hours</b>	<b>18</b>

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 18 semester credit hours of coursework. Other majors may be required to take additional hours to meet prerequisites depending on their academic background.

Code	Title	Credit Hours
<b>Required courses</b>		<b>18</b>
IS 3453	Networking Fundamentals	
IS 3513	Information Assurance and Security	
IS 3523	Intrusion Detection and Incident Response	
IS 4213	Data Center Infrastructure Planning	
IS 4223	Emerging Network Technologies	
MOT 4143	Introduction to Project Management	
<b>Total Credit Hours</b>		<b>18</b>

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.

Code	Title	Credit Hours
<b>A. Required Courses</b>		<b>15</b>
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>B. Elective course</b>		<b>3</b>
Select one of the following:		
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	
<b>Total Credit Hours</b>		<b>18</b>

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.

## Department of Management

### Mission Statement

The department's mission is to be known for exceptionally strong programs built by award-winning teachers and scholars who are experts in strategic management, human resource management, organizational behavior, international management, organization theory, and ethics.

The Department of Management offers two undergraduate degree programs with a major Human Resources Management or 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.

- B.B.A Human Resources Management (p. 50)
- B.B.A. degree in Management (p. 53)
  - Human Resource Management Track (p. 54)

## Bachelor of Business Administration

### Degree in Human Resources Management

The minimum number of semester credit hours required for the Bachelor of Business Administration (B.B.A.) degree in Human Resources 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 Human Resources 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 1053, 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 Carlos Alvarez College of Business require 120 hours. If students elect to take a course that satisfies both a Core and Carlos Alvarez College of Business 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
<b>Total Credit Hours</b>	<b>42</b>

## Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the Carlos Alvarez 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
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 or IS 1413	Business Information Systems Fluency Excel for Business Information Systems	3
IS 3003	Principles of Information Systems for Management	3
MAT 1053	Mathematics for Business (satisfies Mathematics Core Curriculum requirement. This course is not required for Actuarial Science majors) <sup>1</sup>	3
MAT 1133	Calculus for Business (satisfies Mathematics or Component Area Option 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 Actuarial Science, Economics, Finance, Operations and Supply Chain Management and Business Analytics are strongly encouraged to select IS 1413 Excel for Business Information Systems. IS 1413 is required for Accounting majors.**

<sup>1</sup> Students may elect to substitute MAT 1093 Precalculus for MAT 1053 Mathematics for Business. Students electing to take MAT 1093 will need to meet prerequisites or achieve satisfactory performance on a placement examination. Visit UTSA Testing Services for more information regarding math placement exams.

In addition to the Core Curriculum requirements and requirements from the Carlos Alvarez 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 Human Resources Management, whether they are a declared major or a business studies pathway student, must successfully complete the business math gateway course (TCCN MATH 1324) or equivalent 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 by taking an equivalent course at another institution, will be required to change his, her, or their major outside of business. **Upon the second failed attempt students will be changed to undeclared (UND) and will not be eligible for a Bachelor of Business Administration (B.B.A) or a Bachelor of Arts in Economics degree.**

MAT 1053	Mathematics for Business	3
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## Degree Requirements

### A. Major requirements 30

MGT 3613	Managing Human Resources
MGT 4803	Managing Human Resources for Competitive Advantage
<b>Select four from the following:</b>	
MGT 4413	Performance Management
MGT 4613	Compensating Employees
MGT 4623	Staffing Organizations
MGT 4643	Human Resources Law
MGT 4663	Training and Developing Employees

### Select four from the following:

MGT 3023	Understanding People and Organizations
MGT 4213	Designing Organizations
MGT 4433	Introduction to Business Negotiations
MGT 4923	Leading Organizations and Making Decisions
MGT 4933	Internship in Management
MGT 4943	Managing Teams and Avoiding Conflict

### B. Support work 54

Business Common Body of Knowledge (51 SCH) (9 SCH satisfy core curriculum requirements)	
Complete 3 semester credit hours of upper-division business courses	

### C. Free Electives 3

3 semester credit hours of free electives

**Total Credit Hours 87**

The degree requirements listed above are academically aligned with the Society of Human Resource Management's (SHRM) core curriculum guidelines. Students who are enrolled in UTSA's HRM degree are eligible to apply for the SHRM Certified Professional (SHRM-CP) certification. In addition to the course requirements, students must meet the following requirements: (1) be in their final year of study in the HRM program; and (2) pass the SHRM-CP certification exam. Students who earn their SHRM-CP will immediately be able to display their credential. Refer to UTSA's SHRM Student Chapter for further details and additional questions.

### Course Sequence Guide for B.B.A. Degree in Human Resources 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

Fall		Credit Hours
AIS 1233	AIS: Business (core)	3
MAT 1053	Mathematics for Business (core and CBK) <sup>1</sup>	3
WRC 1013	Freshman Composition I (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
ECO 2023	Introductory Microeconomics (core and CBK) <sup>1</sup>	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) <sup>1</sup>	3
WRC 1023	Freshman Composition II (core)	3
<b>Credit Hours</b>		<b>15</b>

##### 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
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
<b>Credit Hours</b>		<b>15</b>

##### Third Year

###### Fall

IS 3003	Principles of Information Systems for Management (CBK)	3
MGT 3023	Understanding People and Organizations (support work in MGT)	3
MGT 3613	Managing Human Resources (major)	3
MS 3053	Management Science and Operations Technology (CBK)	3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>

###### Spring

FIN 3013	Principles of Business Finance (CBK)	3
MGT 4643	Human Resources Law (major)	3
MGT 4923	Leading Organizations and Making Decisions (support work in major)	3
MGT 4943	Managing Teams and Avoiding Conflict (support work in MGT)	3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>

##### Fourth Year

###### Fall

MKT 3013	Principles of Marketing (CBK)	3
MGT 4803	Managing Human Resources for Competitive Advantage (major)	3
MGT 4413	Performance Management (support work in major)	3
MGT 4613	Compensating Employees	3
American History (core)		3
<b>Credit Hours</b>		<b>15</b>

###### Spring

MGT 4213	Designing Organizations (support work in MGT)	3
MGT 4893	Management Strategy (CBK)	3
MGT 4663	Training and Developing Employees (support work in major)	3
Upper division business course (additional support work)		3

Business or non-business elective (free elective)	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

<sup>1</sup> Students may elect to substitute MAT 1093 Precalculus for MAT 1053 Mathematics for Business. Students electing to take MAT 1093 will need to meet prerequisites or achieve satisfactory performance on a placement examination. Visit UTSA Testing Services for more information regarding math placement exams.

## 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 1053, 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 Carlos Alvarez College of Business require 120 hours. If students elect to take a course that satisfies both a Core and CACOB 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
<b>Total Credit Hours</b>	<b>42</b>

### Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the Carlos Alvarez 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
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 or IS 1413	Business Information Systems Fluency Excel for Business Information Systems	3
IS 3003	Principles of Information Systems for Management	3
MAT 1053	Mathematics for Business (satisfies Mathematics Core Curriculum requirement. This course is not required for Actuarial Science majors) <sup>1</sup>	3
MAT 1133	Calculus for Business (satisfies Mathematics or Component Area Option 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 Actuarial Science, Economics, Finance, Operations and Supply Chain Management and Business Analytics are strongly encouraged to select IS 1413 Excel for Business Information Systems. IS 1413 is required for Accounting majors.**

<sup>1</sup> Students may elect to substitute MAT 1093 Precalculus for MAT 1053 Mathematics for Business. Students electing to take MAT 1093 will need to meet prerequisites or achieve satisfactory performance on a placement examination. Visit UTSA Testing Services for more information regarding math placement exams.

In addition to the Core Curriculum requirements and requirements from the Carlos Alvarez 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 or Management HRM track, whether they are a declared major or a business studies pathway student, must successfully complete the business math gateway course MAT 1053 (TCCN MATH 1324) or equivalent 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 by taking an equivalent course at another institution, will be required to change his, her or their major outside of business. **Upon the second failed attempt students will be changed to undeclared (UND) and will not be eligible for a Bachelor of Business Administration (B.B.A) or a Bachelor of Arts in Economics degree.**

Code	Title	Credit Hours
MAT 1053	Mathematics for Business	3

### Degree Requirements (without track)

Code	Title	Credit Hours
<b>A. Major Requirements</b>		<b>24</b>
ENT 3123	Innovation and Entrepreneurship	
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	
6 semester credit hours of upper-division Management electives		
<b>B. Support Work</b>		<b>60</b>
Business Common Body of Knowledge (51 SCH) (9 SCH satisfy core curriculum requirements)		
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		
<b>C. Free Electives</b>		<b>3</b>
3 semester credit hours of free electives.		
<b>Total Credit Hours</b>		<b>87</b>

### Degree Requirements for Human Resource Management (HRM) Track

Code	Title	Credit Hours
<b>A. Major requirements</b>		<b>30</b>
ENT 3123	Innovation and Entrepreneurship	
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>HRM Track -- Select four courses from the following:</b>		
MGT 4413	Performance Management	
MGT 4613	Compensating Employees	
MGT 4623	Staffing Organizations	
MGT 4643	Human Resources Law	
MGT 4663	Training and Developing Employees	
MGT 4803	Managing Human Resources for Competitive Advantage	

<b>B. Support work</b>	<b>54</b>
Business Common Body of Knowledge (51 SCH) (9 SCH satisfy core curriculum requirements)	
<b>C. Free Electives</b>	<b>3</b>
3 semester credit hours of free electives	
<b>Total Credit Hours</b>	<b>87</b>

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

The degree requirements listed above are academically aligned with the Society of Human Resources Management’s (SHRM) core curriculum guidelines. Students that are enrolled in UTSA’s HRM track are eligible to apply for the SHRM Certified Professional (SHRM-CP) certification. In addition to the course requirements, students must meet the following requirements: (1) be in their final year of study in the HRM program; (2) have a minimum of 500 hours of qualified experience; and (3) pass the SHRM-CP certification exam. Internship hours may be applied toward this experience. Students who earn their SHRM-CP will immediately be able to display their credential. Refer to UTSA’s SHRM Student Chapter with further details and additional questions.

### 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

Fall		Credit Hours
AIS 1233	AIS: Business (core)	3
MAT 1053	Mathematics for Business (core and CBK) <sup>1</sup>	3
WRC 1013	Freshman Composition I (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

MAT 1133	Calculus for Business (core and CBK) <sup>1</sup>	3
WRC 1023	Freshman Composition II (core)	3
ECO 2023	Introductory Microeconomics (core and CBK) <sup>1</sup>	3
IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3
ACC 2013	Principles of Accounting I (CBK)	3
<b>Credit Hours</b>		<b>15</b>

**Second Year****Fall**

MS 1023	Business Statistics with Computer Applications I (CBK)	3
ECO 2013	Introductory Macroeconomics (CBK)	3
GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
ACC 2033	Principles of Accounting II (CBK)	3
<b>Credit Hours</b>		<b>15</b>

**Spring**

MS 3043	Business Statistics with Computer Applications II (CBK)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
MKT 3013	Principles of Marketing (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
FIN 3013	Principles of Business Finance (CBK)	3
<b>Credit Hours</b>		<b>15</b>

**Third Year****Fall**

ENT 3123	Innovation and Entrepreneurship (major)	3
MS 3053	Management Science and Operations Technology (CBK)	3
MGT 3023	Understanding People and Organizations (major)	3
MGT 3613	Managing Human Resources (major)	3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

MGT 4943	Managing Teams and Avoiding Conflict (major)	3
MGT 4213	Designing Organizations (major)	3
Upper-division Business elective or Business Competency course (additional support work)		3
Free elective (other support work)		3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>

**Fourth Year****Fall**

MGT 4923	Leading Organizations and Making Decisions (major)	3
Upper-division Management elective (3XXX or 4XXX level) (support work in major)		3
Upper-division Business elective (3XXX or 4XXX level) or Business Competency course (additional support work)		3
Creative Arts (core)		3
American History (core)		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

MGT 4893	Management Strategy (CBK)	3
Upper-division MGT elective (3XXX or 4XXX level) (support work in major)		3
Upper-division Business elective (3XXX or 4XXX level) or Business Competency course (additional support work)		3
Life & Physical Sciences (core)		3
Language, Philosophy & Culture (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120</b>

<sup>1</sup> MAT 1053, 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 (HRM) 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**

		<b>Credit Hours</b>
<b>Fall</b>		
AIS 1233	AIS: Business (core)	3
MAT 1053	Mathematics for Business (core and CBK) <sup>1</sup>	3
WRC 1013	Freshman Composition I (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
ECO 2023	Introductory Microeconomics (core and CBK) <sup>1</sup>	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) <sup>1</sup>	3
WRC 1023	Freshman Composition II (core)	3
<b>Credit Hours</b>		<b>15</b>

**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
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
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
<b>Credit Hours</b>		<b>15</b>
<b>Third Year</b>		
<b>Fall</b>		
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
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
ENT 3123	Innovation and Entrepreneurship (major)	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
<b>Credit Hours</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Fall</b>		
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
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
MGT 4213	Designing Organizations (major)	3
MGT 4893	Management Strategy (CBK)	3
HRM Track Course (support work in major)		3
Upper division business course (additional support work)		3

Business or non-business elective (free elective)	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

<sup>1</sup> MAT 1053, 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 Actuarial Science, a B.B.A. degree in Business Analytics, a B.B.A. degree in Operations and Supply Chain Management (two tracks), 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, Management Sciences, and Statistics, 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. 57)
- B.B.A. degree in Business Analytics (p. 59)
- B.B.A. degree in Operations and Supply Chain Management (p. 61)
- B.S. degree in Statistics and Data Science (p. 64)

## Bachelor of Business Administration Degree in Actuarial Science

Actuarial Science is a discipline that uses mathematics and statistical models to assess, 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 Carlos Alvarez College of Business require 120 hours. If students elect to take a course that satisfies both a Core and CACOB 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
<b>Total Credit Hours</b>	<b>42</b>

## Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the Carlos Alvarez 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
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 or IS 1413	Business Information Systems Fluency Excel for Business Information Systems	3
IS 3003	Principles of Information Systems for Management	3
MAT 1053	Mathematics for Business (satisfies Mathematics Core Curriculum requirement. This course is not required for Actuarial Science majors) <sup>1</sup>	3

MAT 1133	Calculus for Business (satisfies Mathematics or Component Area Option 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 Actuarial Science, Economics, Finance, Operations and Supply Chain Management and Business Analytics are strongly encouraged to select IS 1413 Excel for Business Information Systems. IS 1413 is required for Accounting majors.**

<sup>1</sup> Students may elect to substitute MAT 1093 Precalculus for MAT 1053 Mathematics for Business. Students electing to take MAT 1093 will need to meet prerequisites or achieve satisfactory performance on a placement examination. Visit UTSA Testing Services for more information regarding math placement exams.

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

## Degree Requirements

Code	Title	Credit Hours
<b>A. Major Requirements</b>		<b>29</b>
MAT 1224	Calculus II	
MAT 2214	Calculus III	
MAT 2233	Linear Algebra	
STA 3003	Applied Statistics	
STA 3513	Probability and Statistics	
STA 3523	Mathematical Statistics	
STA 4133	Introduction to Programming and Data Management in SAS	
STA 4713	Applied Regression Analysis	
STA 4753	Time-Series Analysis	
STA 3003 and STA 3513 satisfy Business Common Body Knowledge requirements.		
<b>B. Support Work</b>		<b>55</b>
Business Common Body of Knowledge 49 CBK (MAT 1053 not required), (7 SCH satisfy core curriculum and 6 SCH satisfy major requirements)		
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 Intelligence and Analytics	
STA 4233	Introduction to Programming and Data Management in R	
STA 4643	Introduction to Stochastic Processes	
STA 4903	Applied Survival Analysis	
STA 4933	Internship in Statistics	
STA 4963	Actuarial Science Examination Preparation	
<b>Total Credit Hours</b>		<b>84</b>

## 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		Credit Hours
<b>Fall</b>		
AIS 1233	AIS: Business (core)	3
IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3
WRC 1013	Freshman Composition I (core)	3
MAT 1214	Calculus I (core and CBK) <sup>1</sup>	4
American History (core)		3
<b>Credit Hours</b>		<b>16</b>
<b>Spring</b>		
WRC 1023	Freshman Composition II (core)	3
MAT 1224	Calculus II (major)	4
ECO 2023	Introductory Microeconomics (core and CBK) <sup>1</sup>	3
MGT 3003	Business Communication and Professional Development (CBK)	3
STA 3003	Applied Statistics (CBK)	3
<b>Credit Hours</b>		<b>16</b>
<b>Second Year</b>		
<b>Fall</b>		
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
<b>Credit Hours</b>		<b>16</b>

<b>Spring</b>		
ACC 2033	Principles of Accounting II (CBK)	3
MAT 2233	Linear Algebra (major)	3
FIN 3013	Principles of Business Finance (CBK)	3
STA 3523	Mathematical Statistics (major)	3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

**Third Year**

<b>Fall</b>		
MS 3053	Management Science and Operations Technology (CBK)	3
STA 4133	Introduction to Programming and Data Management in SAS (major)	3
Upper-division FIN or STA Directed Elective (support work in major)		3
Component Area Option (core)		3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>

<b>Spring</b>		
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
Upper-division FIN or STA Directed Elective (support work in major)		3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>15</b>

**Fourth Year**

<b>Fall</b>		
GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
STA 4713	Applied Regression Analysis (major)	3
Upper-division FIN or STA Directed Elective (support work in major)		3
Upper-division FIN or STA Directed Elective (support work in major)		3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>

<b>Spring</b>		
STA 4753	Time-Series Analysis (major)	3
MGT 4893	Management Strategy (CBK)	3
Life & Physical Sciences (core)		3
American History (core)		3
<b>Credit Hours</b>		<b>12</b>
<b>Total Credit Hours</b>		<b>120</b>

<sup>1</sup> Carlos Alvarez 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 Business Analytics

Solving problems and making decisions are integral parts of every organization's daily operations. Students will have the opportunity to develop and apply analytical models and to acquire essential quantitative and computer skills necessary to aid in solving problems in the increasingly technical business environments. 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 minimum number of semester credit hours required for the Bachelor of Business Administration (B.B.A.) in Business Analytics 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 Business Analytics 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 1053, 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 Carlos Alvarez College of Business require 120 hours.

If students elect to take a course that satisfies both a Core and CACOB 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
<b>Total Credit Hours</b>	<b>42</b>

### Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the Carlos Alvarez 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

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 or IS 1413	Business Information Systems Fluency Excel for Business Information Systems	3
IS 3003	Principles of Information Systems for Management	3
MAT 1053	Mathematics for Business (satisfies Mathematics Core Curriculum requirement. This course is not required for Actuarial Science majors) <sup>1</sup>	3
MAT 1133	Calculus for Business (satisfies Mathematics or Component Area Option 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 Actuarial Science, Economics, Finance, Operations and Supply Chain Management and Business Analytics are strongly encouraged to select IS 1413 Excel for Business Information Systems. IS 1413 is required for Accounting majors.**

<sup>1</sup> Students may elect to substitute MAT 1093 Precalculus for MAT 1053 Mathematics for Business. Students electing to take MAT 1093 will need to meet prerequisites or achieve satisfactory performance on a placement examination. Visit UTSA Testing Services for more information regarding math placement exams.

In addition to the Core Curriculum requirements and requirements from the Carlos Alvarez 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 Business Analytics, whether they are a declared major or a business studies pathway student, must successfully complete the business math gateway course MAT 1053 (TCCN MATH 1324) or equivalent 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 by taking an equivalent course at another institution, will be

required to change his, her or their major outside of business. **Upon the second failed attempt students will be changed to undeclared (UND) and will not be eligible for a Bachelor of Business Administration (B.B.A) or a Bachelor of Arts in Economics degree.**

Code	Title	Credit Hours
MAT 1053	Mathematics for Business	3

### Degree Requirements

Code	Title	Credit Hours
<b>A. Major Requirements</b>		<b>18</b>

MS 3003	Visualization in Business Analytics
MS 3073	Business Intelligence and Analytics
MS 3083	Data Management for Business Analytics
MS 3313	Multivariate Statistics for Business Analytics
MS 4203	Business Analytics Applications
MS 4373	Data Mining for Business Analytics

<b>B. Support Work</b>		<b>69</b>
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Business Common Body of Knowledge (51 SCH) (9 SCH Satisfy Core Curriculum Requirements)

Select six courses from the following:

FIN 4523	Introduction to Risk Management
FIN 3063	Computer Modeling of Financial Applications
MKT 3083	Marketing Research
MS 3063	Decision Support Systems
MS 3413	Purchasing and Inventory Management
MS 4313	Six Sigma and Lean Operations
MS 4323	Analytics with Spreadsheet and Simulation in Business
MS 4333	Project Management
MS 4343	Production/Operations Management
MS 4353	Service Operations Management
MS 4363	Quality Management and Control
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

<b>Total Credit Hours</b>	<b>87</b>
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### Course Sequence Guide for B.B.A. Degree in Business Analytics

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
<b>Fall</b>		
AIS 1233	AIS: Business (core)	3
MAT 1053	Mathematics for Business (core and CBK)	3
WRC 1013	Freshman Composition I (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

#### Spring

MAT 1133	Calculus for Business (core and CBK) <sup>1</sup>	3
WRC 1023	Freshman Composition II (core)	3
ECO 2023	Introductory Microeconomics (core and CBK) <sup>1</sup>	3
IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3
ACC 2013	Principles of Accounting I (CBK)	3
<b>Credit Hours</b>		<b>15</b>

#### Second Year

		Credit Hours
<b>Fall</b>		
ECO 2013	Introductory Macroeconomics (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
MGT 3003	Business Communication and Professional Development (CBK)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
ACC 2033	Principles of Accounting II (CBK)	3
<b>Credit Hours</b>		<b>15</b>

#### Spring

MS 3043	Business Statistics with Computer Applications II (CBK)	3
MS 3083	Data Management for Business Analytics (major)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
FIN 3013	Principles of Business Finance (CBK)	3
American History (core)		3
<b>Credit Hours</b>		<b>15</b>

#### Third Year

		Credit Hours
<b>Fall</b>		
MS 3003	Visualization in Business Analytics (major)	3
MS 3053	Management Science and Operations Technology (CBK)	3

MS 3073	Business Intelligence and Analytics (major)	3
Upper-division Business elective (support work in major)		3
Life & Physical Sciences (core)		3

**Credit Hours** **15**

#### Spring

MS 3313	Multivariate Statistics for Business Analytics (major)	3
MKT 3013	Principles of Marketing (CBK)	3
Upper-division Business elective (support work in major)		3
Upper-division Business elective (support work in major)		3
Government-Political Science (core)		3

**Credit Hours** **15**

#### Fourth Year

##### Fall

GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
MS 4373	Data Mining for Business Analytics (major)	3
Upper-division Business elective (support work in major)		3
Upper-division Business elective (support work in major)		3
Government-Political Science (core)		3

**Credit Hours** **15**

##### Spring

MS 4203	Business Analytics Applications (major)	3
MGT 4893	Management Strategy (CBK)	3
Upper-division Business Elective (support work in major)		3
Creative Arts (core)		3
Language, Philosophy & Culture (core)		3

**Credit Hours** **15**

**Total Credit Hours** **120**

<sup>1</sup> Carlos Alvarez College of Business students should take MAT 1053, MAT 1133 and ECO 2023 to satisfy both Core Curriculum and CBK requirements.

## Bachelor of Business Administration Degree in Operations and Supply Chain Management

Solving problems and making decisions are integral parts of every organization's daily operations. The discipline of Operations and Supply Chain Management 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 Operations and Supply Chain Management 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 Operations and Supply Chain Management 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 Operations and Supply Chain 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 Operations and Supply Chain 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 1053, 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 Carlos Alvarez College of Business require 120 hours. If students elect to take a course that satisfies both a Core and CACOB 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
<b>Total Credit Hours</b>	<b>42</b>

### Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the Carlos Alvarez 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
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 or IS 1413	Business Information Systems Fluency Excel for Business Information Systems	3
IS 3003	Principles of Information Systems for Management	3
MAT 1053	Mathematics for Business (satisfies Mathematics Core Curriculum requirement. This course is not required for Actuarial Science majors) <sup>1</sup>	3
MAT 1133	Calculus for Business (satisfies Mathematics or Component Area Option 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 Actuarial Science, Economics, Finance, Operations and Supply Chain Management and Business Analytics are strongly encouraged to select IS 1413 Excel for Business Information Systems. IS 1413 is required for Accounting majors.**

<sup>1</sup> Students may elect to substitute MAT 1093 Precalculus for MAT 1053 Mathematics for Business. Students electing to take MAT 1093 will need to meet prerequisites or achieve satisfactory performance on a placement examination. Visit UTSA Testing Services for more information regarding math placement exams.

In addition to the Core Curriculum requirements and requirements from the Carlos Alvarez 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 Operations and Supply Chain Management, whether they are a declared major or a business studies pathway student, must successfully complete the business math gateway course MAT 1053 (TCCN MATH 1324) or equivalent 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 by taking an equivalent course at another institution, will be required to change his, her or their major

outside of business. **Upon the second failed attempt students will be changed to undeclared (UND) and will not be eligible for a Bachelor of Business Administration (B.B.A) or a Bachelor of Arts in Economics degree.**

Code	Title	Credit Hours
MAT 1053	Mathematics for Business	3

### Degree Requirements (without track)

Code	Title	Credit Hours
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#### A. Major Requirements 27

MS 3403	Logistics Management	
MS 4333	Project Management	
MS 4343	Production/Operations Management	
MS 4543	Supply Chain Management	

Select five courses from the following:

MS 3003	Visualization in Business Analytics	
MS 3063	Decision Support Systems	
MS 3073	Business Intelligence and Analytics	
MS 3313	Multivariate Statistics for Business Analytics	
MS 3413	Purchasing and Inventory Management	
MS 4313	Six Sigma and Lean Operations	
MS 4323	Analytics with Spreadsheet and Simulation in Business	
MS 4353	Service Operations Management	
MS 4363	Quality Management and Control	
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	

#### B. Support Work 51

Business Common Body of Knowledge (51 SCH) (9 SCH satisfy core curriculum requirements)

#### C. Free Electives 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 87**

### Degree Requirements for Management Science Track

Code	Title	Credit Hours
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#### A. Major Requirements 27

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

Select six courses from the following:<sup>1</sup>

FIN 4523	Introduction to Risk Management	
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FIN 3063	Computer Modeling of Financial Applications	
MKT 3083	Marketing Research	
MS 3003	Visualization in Business Analytics	
MS 3063	Decision Support Systems	
MS 3073	Business Intelligence and Analytics	
MS 3083	Data Management for Business Analytics	
MS 3313	Multivariate Statistics for Business Analytics	
MS 3413	Purchasing and Inventory Management	
MS 4203	Business Analytics Applications	
MS 4313	Six Sigma and Lean Operations	
MS 4323	Analytics with Spreadsheet and Simulation in Business	
MS 4353	Service Operations Management	
MS 4363	Quality Management and Control	
MS 4373	Data Mining for Business Analytics	
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 4803	Statistical Quality Control	

#### B. Support Work 51

Business Common Body of Knowledge (51 SCH) (9 SCH satisfy core curriculum requirements)

#### C. Free Electives 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 87**

<sup>1</sup> 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 Operations and Supply Chain 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.

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

Fall		Credit Hours
AIS 1233	AIS: Business (core)	3
MAT 1053	Mathematics for Business (core and CBK)	3
WRC 1013	Freshman Composition I (core)	3
American History (core)		3
Life & Physical Sciences (core)		3

**Credit Hours 15**

#### Spring

MAT 1133	Calculus for Business (core and CBK) <sup>1</sup>	3
WRC 1023	Freshman Composition II (core)	3
ECO 2023	Introductory Microeconomics (core and CBK) <sup>1</sup>	3
ACC 2013	Principles of Accounting I (CBK)	3
IS 1403 or IS 1413	Business Information Systems Fluency (CBK) or Excel for Business Information Systems	3

**Credit Hours 15**

#### Second Year

##### Fall

MS 1023	Business Statistics with Computer Applications I (CBK)	3
MGT 3003	Business Communication and Professional Development	3
ECO 2013	Introductory Macroeconomics (CBK)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
ACC 2033	Principles of Accounting II (CBK)	3

**Credit Hours 15**

##### Spring

MS 3043	Business Statistics with Computer Applications II (CBK)	3
MKT 3013	Principles of Marketing (CBK)	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management (CBK)	3
FIN 3013	Principles of Business Finance (CBK)	3
American History (core)		3

**Credit Hours 15**

#### Third Year

##### Fall

MS 3053	Management Science and Operations Technology (CBK)	3
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MS 4343	Production/Operations Management (major)	3
Upper-division Business elective (support work in major)		3
Upper-division Business elective (support work in major)		3
Creative Arts (core)		3

**Credit Hours 15**

##### Spring

MS 3403	Logistics Management (major)	3
MS 4333	Project Management (major)	3
Upper-division Business elective (support work in major)		3
Upper-division Business elective (support work in major)		3
Life & Physical Sciences (core)		3

**Credit Hours 15**

#### Fourth Year

##### Fall

Upper-division Business elective (support work in major)		3
GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
Upper division Business elective, Business Competency course, or free elective (additional support work)		3
Language, Philosophy & Culture (core)		3
Government-Political Science (core)		3

**Credit Hours 15**

##### Spring

Upper-division Business elective (support work in major)		3
MGT 4893	Management Strategy (CBK)	3
Upper-division Business elective, Business Competency course, or free elective (additional support work)		3
Upper-division Business elective, Business Competency course, or free elective (additional support work)		3
Government-Political Science (core)		3

**Credit Hours 15**

**Total Credit Hours 120**

<sup>1</sup> Carlos Alvarez College of Business students should take MAT 1053, MAT 1133 and ECO 2023 to satisfy both Core Curriculum and CBK requirements.

## 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 Carlos Alvarez College of Business require 120 hours. If students elect to take a course that satisfies both a Core and CACOB 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
<b>Total Credit Hours</b>	<b>42</b>

## Degree Requirements

Code	Title	Credit Hours
<b>A. Major Requirements</b>		<b>54</b>
1. Required courses in the computational and mathematical sciences		
MAT 1214	Calculus I	
MAT 1224	Calculus II	
MAT 2214	Calculus III	
MAT 2233	Linear Algebra	
2. 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	
3. Select four of the following:		
MS 3073	Business Intelligence and 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	
<b>B. Support Work <sup>1</sup></b>		<b>18</b>
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 3063	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	
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	
EED 2013	Introduction to Teaching and Learning 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		
<b>C. Free electives</b>		<b>6</b>
Select 6 semester credit hours of lower-division or upper-division business or non-business electives.		

**Total Credit Hours** **78**

<sup>1</sup> Electives in disciplines where statistics is actively applied and practiced. At least 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. To replace some of the courses in the pre-approved plan of study for each specialization, other relevant courses may be submitted for approval to the designated statistics faculty member. 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

		Credit Hours
<b>Fall</b>		
AIS 1233	AIS: Business (core)	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>16</b>
<b>Spring</b>		
MAT 1224	Calculus II (major)	4
WRC 1023	Freshman Composition II (core)	3
STA 3003	Applied Statistics (major)	3
American History (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>16</b>

##### Second Year

<b>Fall</b>		
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**

<b>Spring</b>		
MAT 2233	Linear Algebra (major)	3
STA 3013	Multivariate Analysis for the Life and Social Sciences (major)	3
STA 3523	Mathematical Statistics (major)	3
ECO 2023	Introductory Microeconomics (core)	3
Government-Political Science (core)		3

**Credit Hours** **15**

##### Third Year

<b>Fall</b>		
STA 4133	Introduction to Programming and Data Management in SAS (major)	3
Upper-division Business elective (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**

<b>Spring</b>		
STA 4233	Introduction to Programming and Data Management in R (major)	3
Upper-division Business elective (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

<b>Fall</b>		
STA 4713	Applied Regression Analysis (major)	3
Upper-division Business elective (major)		3
Course option in specialization track (support work)		3
Business or non-business elective (additional support work)		3
Business or non-business elective (additional support work)		3

**Credit Hours** **15**

<b>Spring</b>		
STA 4723	Introduction to the Design of Experiments (major)	3
Upper-division Business elective (major)		3
Course option in specialization track (support work)		3
Business or non-business elective (additional support work)		3

**Credit Hours** **12**

**Total Credit Hours** **120**

- Minor in Actuarial Science (p. 67)
- Minor in Adaptive Decision Models for Business (p. 67)

- Minor in Management Science (p. 67)
- Minor in Statistics (p. 68)

## 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.

Code	Title	Credit Hours
<b>A. Required Business courses</b>		<b>6</b>
ECO 2013	Introductory Macroeconomics	
ECO 2023	Introductory Microeconomics	
<b>B. Select four of the following courses</b>		<b>12</b>
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	
<b>Total Credit Hours</b>		<b>18</b>

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.

Code	Title	Credit Hours
<b>A. Course option</b>		<b>3</b>
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>B. Additional courses</b>		<b>6</b>
ACC 2013	Principles of Accounting I	
FIN 3003	Survey of Finance	
or FIN 3013	Principles of Business Finance	
<b>C. Models</b>		<b>6</b>
Select 6 semester credit hours of the following:		
Analytical Models		
MS 3063	Decision Support Systems	
MS 3073	Business Intelligence and Analytics	
MS 3313	Multivariate Statistics for Business Analytics	
MS 4323	Analytics with Spreadsheet and Simulation 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

<b>D. Upper-division electives</b>	<b>3</b>
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.	

<b>Total Credit Hours</b>	<b>18</b>
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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.

Code	Title	Credit Hours
<b>A. Required courses</b>		<b>6</b>
MS 3053	Management Science and Operations Technology	
MS 4343	Production/Operations Management	
<b>B. Select four of the following courses</b>		<b>12</b>
ECO 3123	Introduction to Econometrics	
FIN 4523	Introduction to Risk Management	
FIN 3063	Computer Modeling of Financial Applications	
MKT 3083	Marketing Research	
MS 3063	Decision Support Systems	
MS 3073	Business Intelligence and Analytics	
MS 3313	Multivariate Statistics for Business Analytics	
MS 3403	Logistics Management	
MS 3413	Purchasing and Inventory Management	
MS 4313	Six Sigma and Lean Operations	
MS 4323	Analytics with Spreadsheet and Simulation 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	
<b>Total Credit Hours</b>		<b>18</b>

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.

Code	Title	Credit Hours
<b>A. Sequence options</b>		
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	Scope and Methods	
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	
and one of the following:		
STA 2303	Applied Probability and Statistics for Engineers	
STA 3513	Probability and Statistics	
<b>B. Select four of the following courses</b>		
MS 3073	Business Intelligence and 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	
<b>Total Credit Hours</b>		<b>18</b>

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. 68)
- Certificate in Operations and Supply Chain Management (p. 69)

## 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:

Code	Title	Credit Hours
<b>A. Required courses</b>		
MS 3073	Business Intelligence and Analytics	
Choose one of the following three courses as the second required course: <sup>1</sup>		
MS 3083	Data Management for Business Analytics	
or STA 4133	Introduction to Programming and Data Management in SAS	
or STA 4233	Introduction to Programming and Data Management in R	
<b>B. Elective Courses</b>		
MS 3003	Visualization in Business Analytics	
MS 3063	Decision Support Systems	
MS 3083	Data Management for Business Analytics	
MS 3313	Multivariate Statistics for Business Analytics	
or STA 3013	Multivariate Analysis for the Life and Social Sciences	
MS 4203	Business Analytics Applications	
MS 4323	Analytics with Spreadsheet and Simulation in Business	
MS 4373	Data Mining for Business Analytics	
or STA 4143	Data Mining	
STA 4133	Introduction to Programming and Data Management in SAS	
STA 4233	Introduction to Programming and Data Management in R	
<b>Total Credit Hours</b>		<b>15</b>

<sup>1</sup> \*Note: STA 4133 and STA 4233 cannot count as an elective if MS 3083 is counted for the BA certificate.

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. 18) 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:

Code	Title	Credit Hours
<b>A. Required courses</b>		<b>6</b>
MS 3403	Logistics Management	
MS 4543	Supply Chain Management	
<b>B. Select one of the following</b>		<b>3</b>
MS 3003	Visualization in Business Analytics	
MS 4343	Production/Operations Management	
MS 4353	Service Operations Management	
<b>C. Select one of the following</b>		<b>3</b>
MS 4313	Six Sigma and Lean Operations	
MS 4363	Quality Management and Control	
<b>D. Select one of the following</b>		<b>3</b>
MS 3413	Purchasing and Inventory Management	
MS 4333	Project Management	
MS 4383	Predictive Operational Analytics	
<b>Total Credit Hours</b>		<b>15</b>

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. 18) 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 Mission Statement

The Department of Marketing is dedicated to creating knowledge through cutting-edge research that enhances the understanding of marketing and consumer behavior and provides benefits to consumers, business, and public policy; and to sharing knowledge by providing students with the highest quality marketing education through a nurturing environment of hands-on learning.

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.

- B.B.A. degree in Marketing (p. 69)
- B.B.A. degree in Marketing - Sport, Event and Tourism Management (SET) Track (p. 71)

## 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 1053, 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 Carlos Alvarez College of Business require 120 hours. If students elect to take a course that satisfies both a Core and CACOB

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
<b>Total Credit Hours</b>	<b>42</b>

**Common Body of Knowledge (CBK)**

All students seeking a B.B.A. degree in the Carlos Alvarez 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
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 or IS 1413	Business Information Systems Fluency Excel for Business Information Systems	3
IS 3003	Principles of Information Systems for Management	3
MAT 1053	Mathematics for Business (satisfies Mathematics Core Curriculum requirement. This course is not required for Actuarial Science majors) <sup>1</sup>	3
MAT 1133	Calculus for Business (satisfies Mathematics or Component Area Option 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 Actuarial Science, Economics, Finance, Operations and Supply Chain Management and Business Analytics are strongly encouraged to select IS 1413 Excel for Business Information Systems. IS 1413 is required for Accounting majors.**

<sup>1</sup> Students may elect to substitute MAT 1093 Precalculus for MAT 1053 Mathematics for Business. Students electing to take MAT 1093 will need to meet prerequisites or achieve satisfactory performance on a placement examination. Visit UTSA Testing Services for more information regarding math placement exams.

In addition to the Core Curriculum requirements and requirements from the Carlos Alvarez 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 and Marketing with a Sport, Event and Tourism Management (SET) Track, whether they are a declared major or a business studies pathway student, must successfully complete the business math gateway course MAT 1053 (TCN MATH 1324) or equivalent 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 by taking an equivalent course at another institution, will be required to change his, her or their major outside of business. **Upon the second failed attempt students will be changed to undeclared (UND) and will not be eligible for a Bachelor of Business Administration (B.B.A) or a Bachelor of Arts in Economics degree.**

Code	Title	Credit Hours
MAT 1053	Mathematics for Business	3

**Degree Requirements (without track)**

Code	Title	Credit Hours
<b>A. Major Requirements</b>		<b>21</b>
MKT 3063	Personal Selling	
MKT 3083	Marketing Research	
MKT 4073	International Marketing	
MKT 4093	Consumer Behavior	
MKT 4893	Marketing Capstone	
6 semester hours of upper-division Marketing electives <sup>1</sup>		
<b>B. Support work</b>		<b>60</b>
Business Common Body Knowledge (51 SCH) (9 SCH Satisfy Core Curriculum Requirements)		
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		
<b>C. Free Electives</b>		<b>6</b>
6 semester credit hours of free electives		
<b>Total Credit Hours</b>		<b>87</b>

<sup>1</sup> The Marketing department recommends MKT 4933 Internship in Marketing



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

Code	Title	Credit Hours
<b>A. Major requirements</b>		<b>27</b>
MKT 3063	Personal Selling	
MKT 4073	International Marketing	
MKT 3083	Marketing Research	
MKT 4093	Consumer Behavior	
MKT 4893	Marketing Capstone	
Select four of the following courses:		
MKT 4143	Sports Marketing	
SET 3283	Sport and Event Media Relations	
SET 3233	Sport Management	
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	
<b>B. Support work -- SET Track</b>		<b>57</b>
Business Common Body Knowledge (51 SCH) (9 SCH satisfy core curriculum requirements)		
6 semester credit hours of upper-division business courses		
<b>C. Free Electives</b>		<b>3</b>
3 semester credit hours of free electives		
<b>Total Credit Hours</b>		<b>87</b>

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 (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>
Spring		
ACC 2013	Principles of Accounting I (CBK)	3

ECO 2023	Introductory Microeconomics (core and CBK) <sup>1</sup>	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) <sup>1</sup>	3
WRC 1023	Freshman Composition II (core)	3
<b>Credit Hours</b>		<b>15</b>

### Second Year

#### Fall

ACC 2033	Principles of Accounting II (CBK)	3
ECO 2013	Introductory Macroeconomics (CBK)	3
IS 3003	Principles of Information Systems for Management (CBK)	3
MS 1023	Business Statistics with Computer Applications I (CBK)	3
MKT 3013	Principles of Marketing	3
<b>Credit Hours</b>		<b>15</b>

#### Spring

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
FIN 3013	Principles of Business Finance (CBK)	3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

### Third Year

#### Fall

MS 3053	Management Science and Operations Technology (CBK)	3
MKT 3083	Marketing Research (major)	3
MKT 3063	Personal Selling (major)	3
American History (core)		3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>

#### Spring

MKT 4093	Consumer Behavior (major)	3
MKT 4073	International Marketing (major)	3
GBA 2013	Legal, Social and Ethical Issues in Business (CBK)	3
Government-Political Science (core)		3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>15</b>

### Fourth Year

#### Fall

Upper-division MKT elective (3XXX or 4XXX level) (support work in major)		3
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Upper-division business elective or competency course (additional support work)	3
Upper-division business elective or competency course (additional support work)	3
Business or non-business elective (free elective)	3
Language, Philosophy & Culture (core)	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
MGT 4893 Management Strategy (CBK)	3
MKT 4893 Marketing Capstone (major)	3
Upper-division MKT elective (3XXX or 4XXX level) (support work in major)	3
Upper-division business elective or competency course (additional support work)	3
Business or non-business elective (free elective)	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

<sup>1</sup> Carlos Alvarez College of Business students should take MAT 1053, 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 (SET) 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

<b>First Year</b>	
<b>Fall</b>	
AIS 1203 Academic Inquiry and Scholarship (core)	3
MAT 1053 Mathematics for Business (core)	3
WRC 1013 Freshman Composition I (core)	3
American History (core)	3
Life & Physical Sciences (core)	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
ECO 2023 Introductory Microeconomics (core and CBK) <sup>1</sup>	3
IS 1403 Business Information Systems or IS 1413 Fluency (CBK) or Excel for Business Information Systems	3
MAT 1133 Calculus for Business (core and CBK) <sup>1</sup>	3
WRC 1023 Freshman Composition II (core)	3

Creative Arts (core)	3
<b>Credit Hours</b>	<b>15</b>
<b>Second Year</b>	
<b>Fall</b>	
ACC 2013 Principles of Accounting I (CBK)	3
ECO 2013 Introductory Macroeconomics (CBK)	3
MS 1023 Business Statistics with Computer Applications I (CBK)	3
MKT 3013 Principles of Marketing	3
Language, Philosophy & Culture (core)	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
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
<b>Credit Hours</b>	<b>15</b>
<b>Third Year</b>	
<b>Fall</b>	
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
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
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
Free Elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Fourth Year</b>	
<b>Fall</b>	
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 (additional support work)	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
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 (additional support work)	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

<sup>1</sup> Carlos Alvarez College of Business students should take MAT 1133 and ECO 2023 to satisfy both Core Curriculum and CBK requirements.

- Minor in Marketing (p. 73)
- Minor in Sport Management (p. 73)

## Minor in Marketing

All students pursuing the Minor in Marketing must complete 18 semester credit hours.

Code	Title	Credit Hours
<b>A. Required coursework</b>		<b>3</b>
MKT 3013	Principles of Marketing	
<b>B. Additional courses</b>		<b>15</b>
Select five of the following courses:		
MKT 3043	Advertising	
MKT 3063	Personal Selling	
MKT 3113	Retailing	
MKT 4053	New Product Development	
MKT 4073	International Marketing	
MKT 4093	Consumer Behavior	
MKT 4143	Sports Marketing	
MKT 4233	Integrated Marketing Communications	
MKT 4953	Special Studies in Marketing	
MKT 4033	Social Media Marketing	
MKT 4253	Digital Marketing	
<b>Total Credit Hours</b>		<b>18</b>

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

All students pursuing the Minor in Sport Management must complete 18 semester credit hours of coursework.

Code	Title	Credit Hours
<b>A. Required Courses</b>		<b>9</b>
MKT 3013	Principles of Marketing	
SET 3233	Sport Management	
SET 3283	Sport and Event Media Relations	
<b>B. Elective Courses</b>		<b>9</b>
Select three courses from the list below:		
MKT 4143	Sports Marketing	
MKT 4353	Service Operations Management	
SET 4543	Destination Marketing	
SET 3333	Event Management	

SET 3543	Sports Economics
SET 4233	Sport Facility and Event Management
SET 4813	Special Topics in Sport, Event and Tourism Management <sup>1</sup>
SET 4943	Internship in Sport, Event and Tourism Management <sup>2</sup>
<b>Total Credit Hours</b>	<b>18</b>

<sup>1</sup> Must be related to sports.

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

# 5. COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT

## Who is the College of Education and Human Development (COEHD)?

We are a diverse community of scholars, engaging and preparing educators, community leaders, scholars, practitioners, researchers, clinicians, and community activists, from dual credit high school students to undergraduate and graduate, and through lifelong, continuous professional development.

We transform lives and address grand challenges of the future related to education and human development, through our unique interdisciplinary approach, including through our research, teaching, and service.

We embrace and foster social justice through the COEHD Conceptual Framework, in diverse local, national, and global communities. Pursuant to our role as a Hispanic Serving Institution, we engage, advocate, and lead with the diverse communities we serve.

We are committed to the UTSA destinations of becoming a Model for Student Success, a Great Public Research University, and an Exemplar for Strategic Growth and Innovative Excellence.

### COEHD Destination 1: Model for Student Success

#### Vision

All COEHD students feel a sense of belonging in the college, in their professional communities, and in their program or department. To advance student success, we robustly engage a diverse and vibrant community of students in research, teaching, and community and global impact through education and human development.

#### Goals

Foster a sense of belonging for students, through continuously seeking student feedback, providing wraparound student support, and community building. Leverage technology and transformative pedagogical techniques to meet the needs of all learners, across in-person, hybrid, and online modalities. Build impactful experiential learning opportunities across the degree to augment career readiness.

### COEHD Destination 2: Great Public Research University

#### Vision

COEHD is a dynamic hub of bold, impactful, collaborative research with local, national, and global significance. COEHD is committed to maximizing its resources to support faculty and students in achieving scholarly excellence in their research, and proactively showcasing their work.

#### Goals

Elevate the research profile of COEHD, including the visibility of COEHD research.

Promote and enable multidisciplinary, transdisciplinary and/or interdisciplinary research collaboration at local, national, and global levels.

### COEHD Destination 3: Strategic Growth and Innovative Excellence

#### Vision

COEHD is intentional about creating a community in which students, faculty and staff thrive. To achieve strategic growth and innovative excellence, COEHD maximizes student access intentionally through academic programming, increased student recruitment and retention efforts, and meeting infrastructure needs.

#### Goals

Foster a sense of community in COEHD.

Increase educational access in San Antonio and South Texas.

Create infrastructures that support a growing and thriving academic 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 Race, Ethnicity, Gender, and Sexuality Studies.

Nine undergraduate degrees are offered within the College: the Bachelor of Arts (B.A.) in Equity and Education, in Interdisciplinary Studies; the B.A. in Mexican American Studies; the B.A. in Multicultural Early Childhood Development; and the B.A. in Women's, Gender and Sexuality Studies; Minors are offered in African American Studies, Bicultural Studies, English as a Second Language, and Women's Studies. For more information related to the College, visit the webpage at <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.

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

Interdisciplinary Studies, Multicultural Early Childhood Development, and Women's Studies majors are advised by the Interdisciplinary Education team in the Academic Advising Student Success 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 Equity and Education for Early Childhood through sixth grade (EC-6) or Interdisciplinary Studies for fourth through eighth grade (4-8) 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 secondary certification program for this teaching field. Students planning to teach Art, Kinesiology (PE), Music, Spanish, or Special Education will major in the academic areas and follow specialized All-Level certification programs.

Additional information about UTSA certification programs and teacher certification guidelines is available in the Teacher Certification section of this catalog and in the Academic Advising Success 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, hospitals, 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 (<https://statutes.capitol.texas.gov/Docs/OC/htm/OC.53.htm>).

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/](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 Bicultural-Bilingual Studies

The Department of Bicultural-Bilingual Studies 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 (BBL) offer students the opportunity to prepare for bilingual and/or second language teaching and give insights into bilingual and multicultural functions in society. In particular, students who complete certification in bilingual education are able to teach in a range of cutting-edge bilingual program models, including dual language one-way immersion and dual language two-way immersion programs. 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 as well as a minor in ESL or Bicultural Studies.

The Department of Bicultural-Bilingual Studies offers coursework required for teacher certification in the areas of bilingual education and ESL. Students seeking certification in these areas should complete requirements for the Bachelor of Arts (B.A.) degree in Equity and Education (see Department of Interdisciplinary Learning and Teaching section of this catalog), for either of the following:

1. Core Subjects with Science of Teaching Reading: Early Childhood-Grade 6 Bilingual Supplemental Certification Concentration.
2. Core Subjects with Science of Teaching Reading: Early Childhood-Grade 6 with English as a Second Language Supplemental Certification Concentration.

The B.A. in Equity and Education will first be offered to those students admitted to the teacher certification program (<https://education.utsa.edu/programs/professional-preparation/certification-programs.html>) in Fall 2022. Students who were admitted to the teacher certification program before Fall 2022 can contact their advisor to determine if they can follow the new degree program.

We also offer coursework for the Grades 4–8 Bilingual Core Subjects Certification, Grades 4–8 ESL Certification, or a Supplementary Certification for Bicultural-Bilingual Education or ESL for those pursuing secondary or all-level certification.

## 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, hospitals, 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 (<https://statutes.capitol.texas.gov/Docs/OC/htm/OC.53.htm>).

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. (<https://education.utsa.edu/programs/professional-preparation/resources.html>) 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 Equity and Education (Core Subjects with Science of Teaching Reading: Early Childhood-Grade 6 with Bilingual Education Supplemental Certification Concentration) (p. 76)
- B.A. degree in Interdisciplinary Studies (Grades 4–8 Bilingual Core Subjects Certification Concentration) (p. 78)
- B.A. degree in Interdisciplinary Studies (Grades 4–8 ESL Certification Concentration) (p. 80)
- Grades 7-12 and EC-12 Supplemental Certifications (TEA approved) (p. 82)

## Bachelor of Arts in Equity and Education (Core Subjects with Science of Teaching Reading: Early Childhood–Grade 6 with Bilingual Education Supplemental Certification Concentration)

If you are seeking bilingual education or ESL Teacher Certification, you must apply and be accepted into the Teacher Certification Program. The minimum number of semester credit hours required for the EED degree with Early Childhood–Grade 6 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.

**Spanish language proficiency requirement:** Proficiency in oral and written Spanish at the advanced level is a requirement for bilingual education coursework and certification at UTSA. Students are required to complete the ALPS (Assessment of Language Proficiency in Spanish) prior to admission to the bilingual education certification program.

## Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.A. degree in Equity and Education 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 1033 should be used to satisfy the core requirement in Life and Natural Sciences. All EED majors must complete AIS 1203 or AIS 1253, and either AAS 2013, MAS 2013, WGSS 2013, or WGSS 2023 is recommended to satisfy the core requirements in Language, Philosophy, and Culture. HIS 2053 is recommended to satisfy a core requirement in American History. BBL 2003, BBL 2243 or 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
<b>Total Credit Hours</b>	<b>42</b>

## EED Degree Requirements

Code	Title	Credit Hours
<b>EED support courses</b>		
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
<b>Total Credit Hours</b>		<b>14</b>

## Certification Requirements

Code	Title	Credit Hours
BBL 3013	Language Analysis and Bilingualism	3
BBL 3033 or BBL 3123	Mexican Americans in the Southwest Mexican American Culture	3
BBL 3053	Foundations of Bilingual Studies	3
BBL 3133	Language Development in Bilinguals	3
BBL 3143	Children’s Literature for Bilingual Learners	3
ECE 3143	Child Growth and Development	3
ECE 3313	Play, Creativity, and Learning	3

EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
EDU 3002	Ethical & Legal Foundations of Education	2
EED 2013	Introduction to Teaching and Learning in a Culturally Diverse Society	3
ESL 3023	Second Language Teaching and Learning in EC-6	3
ESL 3053	Literacy in a Second Language	3
LTED 3813	Writing Development & Instruction in Early Childhood-Grade 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.		
BBL 3823	Reading Comprehension in Bilingual Settings	3
EED 3303	Teaching, Learning, and Classroom Culture	3
<b>Total Credit Hours</b>		<b>47</b>

## Professional Education Requirements

Code	Title	Credit Hours
The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.		
BBL 4033	Equitable Assessment for Teaching and Learning in Bicultural-Bilingual Classrooms	3
BBL 4063	Bicultural-Bilingual Approaches to Teaching Social Studies and Integrating Other Content Areas	3
BBL 4073	Bicultural-Bilingual Approaches to Teaching Language Arts	3
BBL 4353	Bicultural-Bilingual Approaches to Teaching Science EC-6	3
BBL 4403	Bicultural-Bilingual Approaches to Teaching Mathematics EC-6	3
EED 3110	Preclinical Field Experience I	0
EED 3220	Preclinical Field Experience II	0
CI 4611	Clinical Teaching I: Early Childhood-Grade 6	1
CI 4621	Clinical Teaching II: Early Childhood-Grade 6	1
<b>Total Credit Hours</b>		<b>17</b>

## B.A. in Equity and Education, Core Subjects with Science of Teaching Reading: Early Childhood-Grade 6 with Bilingual Education Supplemental Certification – Recommended Four-Year Academic Plan

First Year		Credit Hours
<b>Fall</b>		
First Year Experience (core)	First Year Experience (core)	3
MAT 1023	College Algebra with Applications (core)	3
Life & Physical Sciences (core)	BIO 1233 recommended	3

WRC 1013	Freshman Composition I (core)	3
American History (core)	HIS 1053 recommended	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
American History (core)	HIS 2053 recommended	3
EED 2013	Introduction to Teaching and Learning in a Culturally Diverse Society	3
Life & Physical Sciences (core)	AST 1033 recommended	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (core)	3
<b>Credit Hours</b>		<b>15</b>
<b>Summer</b>		
Component Area Option (core)	COM 2113 Public Speaking	3
<b>Credit Hours</b>		<b>3</b>

Second Year		
<b>Fall</b>		
Language, Philosophy & Culture (core)	AAS 2013, MAS 2013, WGSS 2013, or WGSS 2023 recommended	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
MAT 1153	Essential Elements in Mathematics I	3
Government-Political Science (core)	POL 1133 recommended	3
IDS 2403	Physical Science	3
IDS 3201	Inquiry in Physical Science	1
<b>Credit Hours</b>		<b>16</b>
<b>Spring</b>		
BBL 3033 or BBL 3123	Mexican Americans in the Southwest or Mexican American Culture	3
IDS 2413	Earth Systems Science	3
IDS 3211	Inquiry in Earth Systems Science	1
Social and Behavioral Science (core)	BBL 2003, BBL 2243, or IDS 2113	3
MAT 1163	Essential Elements in Mathematics II	3
<b>Credit Hours</b>		<b>13</b>

Third Year		
<b>Fall</b>		
Admission to the Teacher Certification Program		
BBL 3053	Foundations of Bilingual Studies	3
BBL 3133	Language Development in Bilinguals	3
ECE 3143	Child Growth and Development	3
EDU 3002	Ethical & Legal Foundations of Education	2

EED 3110	Preclinical Field Experience I	0
EED 3303	Teaching, Learning, and Classroom Culture <sup>1</sup>	3
<b>Credit Hours</b>		<b>14</b>

**Spring**

(must be taken Fall or Spring semesters)		
BBL 3013	Language Analysis and Bilingualism	3
BBL 3143	Children’s Literature for Bilingual Learners	3
BBL 3823	Reading Comprehension in Bilingual Settings <sup>2</sup>	3
BBL 4033	Equitable Assessment for Teaching and Learning in Bicultural-Bilingual Classrooms <sup>2</sup>	3
EED 3220	Preclinical Field Experience II <sup>2</sup>	0
ECE 3313	Play, Creativity, and Learning	3
<b>Credit Hours</b>		<b>15</b>

**Summer**

ESL 3053	Literacy in a Second Language	3
Creative Arts (core)	MAS 2023 recommended	3
SPE 3603	Introduction to Special Education	3
<b>Credit Hours</b>		<b>9</b>

**Fourth Year**

**Fall**

(must be taken Fall or Spring semesters)		
BBL 4073	Bicultural-Bilingual Approaches to Teaching Language Arts <sup>3</sup>	3
BBL 4353	Bicultural-Bilingual Approaches to Teaching Science EC-6 <sup>3</sup>	3
BBL 4403	Bicultural-Bilingual Approaches to Teaching Mathematics EC-6 <sup>3</sup>	3
CI 4611	Clinical Teaching I: Early Childhood–Grade 6 <sup>3</sup>	1
<b>Credit Hours</b>		<b>10</b>

**Spring**

(must be taken Fall or Spring semesters)		
BBL 4063	Bicultural-Bilingual Approaches to Teaching Social Studies and Integrating Other Content Areas <sup>4</sup>	3
CI 4621	Clinical Teaching II: Early Childhood–Grade 6 <sup>4</sup>	1
ESL 3023	Second Language Teaching and Learning in EC-6 <sup>4</sup>	3
LTED 3813	Writing Development & Instruction in Early Childhood–Grade 6 <sup>4</sup>	3
<b>Credit Hours</b>		<b>10</b>
<b>Total Credit Hours</b>		<b>120</b>

- <sup>1</sup> Must be taken concurrently.
- <sup>2</sup> Must be taken concurrently.
- <sup>3</sup> Must be taken concurrently.
- <sup>4</sup> Must be taken concurrently.

## 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 or AIS 1253 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
<b>Total Credit Hours</b>	<b>42</b>

### Degree Requirements

Code	Title	Credit Hours
<b>A. IDS Core Courses</b>		
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 Regions & Global Change	3
HIS 1053	United States History: Civil War Era to Present	3
HIS 2053	Texas History	3
EED 2013	Introduction to Teaching and Learning 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 Development, Processes, and Instruction 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
2. Level One or Level Two Science courses in a different discipline from science courses taken for Core Curriculum requirement.		
3. Select one of the following: <sup>1</sup>		
BBL 4003	Spanish for Bilingual Instructional Delivery	
SPN 3003	Oral and Written Expression	
SPN 3063	Grammar and Composition	
SPN 4003	Advanced Language Skills	
<b>Total Credit Hours</b>		<b>75</b>

<sup>1</sup> Students must complete one of the four 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.

Code	Title	Credit Hours
<b>A. Required courses</b>		
BBL 3053	Foundations of Bilingual Studies	3
BBL 3133	Language Development in Bilinguals	3
ESL 3053	Literacy in a Second Language	3

ESL 3073	Second Language Teaching and Learning for Grades 4-8	3
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**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	Equitable Assessment for Teaching and Learning in Bicultural-Bilingual Classrooms <sup>1</sup>	3
BBL 4063	Bicultural-Bilingual Approaches to Teaching Social Studies and Integrating Other Content Areas <sup>1</sup>	3
BBL 4073	Bicultural-Bilingual Approaches to Teaching Language Arts <sup>1</sup>	3
CI 4433	Science Methods in Grades 4-8	3
or CI 4443	Mathematics Methods in Grades 4-8	
CI 4603	Classroom Management Strategies in Grades 4–8	3
CI 4633	Clinical Teaching: Grades 4-8	6
or CI 4626	Clinical Teaching: Grades 4-8	

**Total Credit Hours** **33**

<sup>1</sup> Concurrent enrollment.

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

First Year		Credit Hours
<b>Fall</b>		
AIS 1203 or AIS 1253	Academic Inquiry and Scholarship (core) or AIS: Interdisciplinary Education	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 (core)	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
HIS 2053	Texas History (core and major)	3
EED 2013	Introduction to Teaching and Learning in a Culturally Diverse Society	3
MAS 2023	Latino Cultural Expressions (core)	3
MAT 1093	Precalculus (core)	3
WRC 1023	Freshman Composition II (core)	3
<b>Credit Hours</b>		<b>15</b>
<b>Summer</b>		
IDS 2113	Society and Social Issues (core and major)	3
POL 1013	Introduction to American Politics (core)	3

Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>9</b>
<b>Second Year</b>		
<b>Fall</b>		
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
<b>Credit Hours</b>		<b>17</b>
<b>Spring</b>		
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
<b>Credit Hours</b>		<b>16</b>
<b>Summer</b>		
GES 1023	World Regions & Global Change	3
SPE 3603	Introduction to Special Education	3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>9</b>
<b>Third Year</b>		
<b>Fall</b>		
Admission to the Teacher Certification Program		
BBL 3053	Foundations of Bilingual Studies	3
BBL 4003 or SPN 3003 or SPN 3063 or SPN 4003	Spanish for Bilingual Instructional Delivery or Oral and Written Expression or Grammar and Composition or Advanced Language Skills	3
EDP 3303	Learning and Development in the Middle School Context (Grades 4–8)	3
ESL 3073	Second Language Teaching and Learning for Grades 4-8	3
IDS 3003	STEM in Social Contexts	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
BBL 3133	Language Development in Bilinguals	3
ESL 3053	Literacy in a Second Language	3
LTED 3523	Reading Development, Processes, and Instruction Grades 4-8	3

LTED 3633	Literature and Other Texts Across the Content Areas-Grades 4–8	3
<b>Credit Hours</b>		<b>12</b>
<b>Fourth Year</b>		
<b>Fall</b>		
BBL 4063	Bicultural-Bilingual Approaches to Teaching Social Studies and Integrating Other Content Areas <sup>1</sup>	3
BBL 4073	Bicultural-Bilingual Approaches to Teaching Language Arts <sup>1</sup>	3
CI 4433 or CI 4443	Science Methods in Grades 4-8 or Mathematics Methods in Grades 4-8	3
CI 4633	Clinical Teaching: Grades 4-8	3
<b>Credit Hours</b>		<b>12</b>
<b>Spring</b>		
BBL 4033	Equitable Assessment for Teaching and Learning in Bicultural-Bilingual Classrooms	3
CI 4603	Classroom Management Strategies in Grades 4–8	3
CI 4633	Clinical Teaching: Grades 4-8	3
IDS 3713	Interdisciplinary Inquiry	3
<b>Credit Hours</b>		<b>12</b>
<b>Total Credit Hours</b>		<b>132</b>

<sup>1</sup> Concurrent enrollment.

## 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 should be used to satisfy the core requirement in Life and Physical Sciences. All IDS majors must complete AIS 1203 or AIS 1253. 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
<b>Total Credit Hours</b>	<b>42</b>

## Degree Requirements

Code	Title	Credit Hours
<b>A. IDS Core Courses</b>		
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>B. IDS Support Courses</b>		
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	Bilingual Families, Communities, and Schools: National and Transnational Experiences	
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	
<b>Total Credit Hours</b>		<b>36</b>

## Certification Requirements

*Programs are subject to change without notice due to changes in the state's certification and/or program approval requirements.*

Code	Title	Credit Hours
<b>A. ESL Special Delivery System Core</b>		
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 3073	Second Language Teaching and Learning for Grades 4-8	3
<b>B. Other Certification Courses</b>		

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
EED 2013	Introduction to Teaching and Learning in a Culturally Diverse Society	3
LTED 3523	Reading Development, Processes, and Instruction Grades 4-8	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	
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.

CI 4543	Social Studies Methods in Grades 4-8	3
CI 4633	Clinical Teaching: Grades 4-8	6
or CI 4626	Clinical Teaching: Grades 4-8	
EDP 4203	Assessment and Evaluation	3
ESL 4003	Approaches to Second Language Teaching	3

**Total Credit Hours** **51**

### 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
or AIS 1253	or AIS: Interdisciplinary Education	
MAT 1023	College Algebra with Applications (core and major)	3
WRC 1013	Freshman Composition I (core)	3
AST 1013	Introduction to Astronomy	3
HIS 1053	United States History: Civil War Era to Present	3
	<b>Credit Hours</b>	<b>15</b>

#### Spring

EED 2013	Introduction to Teaching and Learning in a Culturally Diverse Society	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (core)	3
HIS 2053	Texas History	3
AST 1033	Exploration of the Solar System	3
	<b>Credit Hours</b>	<b>15</b>

#### Summer

BBL 2003	Language, Culture, and Society (core)	3
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IDS 2113	Society and Social Issues (core and major)	3
IDS 2403	Physical Science	3
<b>Credit Hours</b>		<b>9</b>

**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
<b>Credit Hours</b>		<b>15</b>

**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
<b>Credit Hours</b>		<b>15</b>

**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
<b>Credit Hours</b>		<b>12</b>

**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
<b>Credit Hours</b>		<b>9</b>

**Spring**

BBL 3403	Cultural and Linguistic Equity for Schooling	3
ESL 3073	Second Language Teaching and Learning for Grades 4-8	3
LTED 3523	Reading Development, Processes, and Instruction Grades 4-8	3
Select one of the following: 3		
BBL 2243	Bilingual Families, Communities, and Schools: National and Transnational Experiences	

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	
<b>Credit Hours</b>		<b>12</b>

**Fourth Year**

**Fall**

CI 4543	Social Studies Methods in 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
<b>Credit Hours</b>		<b>15</b>

**Spring**

CI 4626	Clinical Teaching: Grades 4-8 <sup>1</sup>	6
<b>Credit Hours</b>		<b>6</b>
<b>Total Credit Hours</b>		<b>123</b>

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

## Grades 7-12 and EC-12 Supplemental Certifications (TEA approved) (9 hours)

The following Supplemental Certifications (TEA approved) in bilingual education or ESL are available for those pursuing initial 7-12 content area or EC-12 certification. As a reminder, students seeking Secondary or All-Level Certification 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 or all-level certification requirements and admission to the Teacher Certification Program.

## Supplemental Certification (TEA approved) Content Area + Bicultural-Bilingual Education(BBED)

BBL 3033 or MAS 3033	Mexican Americans in the Southwest	3
BBL 3053	Foundations of Bilingual Studies	3
BBL 4063	Bicultural-Bilingual Approaches to Teaching Social Studies and Integrating Other Content Areas	3

## Content Area + English as a Second Language (ESL)

ESL 3003	Language and Schooling	3
ESL 3033	Foundations of English as a Second Language	3
ESL 3053	Literacy in a Second Language	3

- Minor in Bicultural Studies (p. 83)
- Minor in English as a Second Language (p. 83)

## Minor in Bicultural Studies

All students pursuing a Minor in Bicultural Studies must complete 18 semester credit hours.

Code	Title	Credit Hours
<b>A. Bicultural Studies</b>		
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>B. Language</b>		
Select two of the following:		6
BBL 3013	Language Analysis and Bilingualism	
BBL 3133	Language Development in Bilinguals	
ESL 3003	Language and Schooling	
<b>C. Culture and Society</b>		
Select two of the following:		6
BBL 2033	Multiculturalism in the Southwest	
BBL 3033	Mexican Americans in the Southwest	
BBL 3063	Historical Legacies: Chicanas/os in Education	
BBL 3123	Mexican American Culture	
<b>Total Credit Hours</b>		<b>18</b>

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.

Code	Title	Credit Hours
<b>A. Courses in English as a second language</b>		
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 3073	Second Language Teaching and Learning for Grades 4-8	

ESL 3083	Second Language Teaching and Learning for Grades 7-12	
<b>B. Culture and society</b>		
Select one of the following:		3
BBL 2033	Multiculturalism in the Southwest	
BBL 3033	Mexican Americans in the Southwest	
BBL 3123	Mexican American Culture	
<b>C. Language minority education</b>		
Select one of the following:		3
BBL 3053	Foundations of Bilingual Studies	
BBL 4033	Equitable Assessment for Teaching and Learning in Bicultural-Bilingual Classrooms	
BBL 4953	Special Studies in Bilingual and Bicultural Studies	
<b>Total Credit Hours</b>		<b>18</b>

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 across contexts. 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 four graduate degrees: the Master of Arts in Educational Psychology (with concentrations in Learning, Motivation, and Development or Program Evaluation and Applied Research), the Master of Arts in School Psychology, the Master of Science in Behavior Analysis, and the Doctor of Philosophy in School Psychology (starting in Fall 2023). 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 and Applied Research. (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, hospitals, 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 (<https://statutes.capitol.texas.gov/Docs/OC/htm/OC.53.htm>).

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/](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 and Partnerships 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 and advocate for innovative 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 Equity and Education

#### a. Degree-Only Concentration

The Bachelor of Arts (B.A.) in Equity and Education (EED) degree-only concentration may be used as preparation for a number of career paths; for example, government, service industry, and non-profit work. This degree also has an associated opportunity for graduate or professional study in areas such as educational psychology, public policy, business, counseling, curriculum and instruction, or social work. The minimum number of semester credit hours required for the B.A. in EED degree-only concentration, including the Core Curriculum requirements, is 120, at least 39 of which must be at the upper-division level. See the section entitled "Bachelor of Arts Degree in Equity and Education (degree-only concentration)" for a listing of the requirements for this degree.

#### b. Degrees with Certifications

The Bachelor of Arts (B.A.) degree in Equity and Education (EED) is grounded in the College of Education and Human Development's Conceptual Framework of culturally efficacious agents of change who are knowledgeable, community-based, and professional. This program's curriculum is based on enduring understandings that highlight the important ideas and core processes that are central to an equitable education for all children and have lasting value beyond the university classroom. These enduring understandings encompass issues of social justice, cultural efficacy, literacy, language, classroom environments, planning, instruction, and professional responsibility. The program is 120 hours and will accept 60–63 hours of transfer credit hours with approval. The B.A. in EED program will first be offered to those students admitted to the teacher certification program (<https://education.utsa.edu/programs/professional-preparation/certification-programs.html>) in Fall 2022. Students who were admitted to the teacher certification program before Fall 2022 can contact their advisor to determine if they can follow the new degree program. The B.A. in Equity and Education offers students the opportunity to earn initial certification in:

- Core Subjects with Science of Teaching Reading: Early Childhood–Grade 6 with English as a Second Language Supplemental Certification
- Core Subjects with Science of Teaching Reading: Early Childhood–Grade 6 with Bilingual Education Supplemental Certification, (Offered by the Department of Bicultural-Bilingual Studies)

### 2. 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 a number of career paths; for example, government, service industry, and non-profit work. This degree also has an associated opportunity for graduate or professional study in areas such as educational psychology, 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. Degrees with Certifications**

Students who choose the IDS major may also seek teacher certification. You must apply and be admitted into the Teacher Certification Program. The IDS program is designed to give successful students the opportunity to become teachers. To be a teacher, you must understand the thinking and learning processes and be able to successfully foster children’s conceptual, intellectual, and emotional growth. Within the Department of Interdisciplinary Learning and Teaching, IDS majors who select teacher certification can choose from three concentrations: grades 4–8 language arts/reading/social studies certification, grades 4–8 mathematics/science certification, or EC–12 special education certification. For additional certification requirements, consult the section of this catalog titled, “IDS Degree Program with Teacher Certification Concentrations.” You should also consult with your academic advisor for information regarding certification requirements and for admission information to the Teacher Certification Program.

IDS majors seeking bilingual 4–8 should refer to the section of this catalog entitled Department of Bicultural-Bilingual Studies. Please note that certification programs and requirements are subject to change depending on changes mandated by the state.

**3. 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 60–63 hours of transfer credit hours with approval. The B.A. in Multicultural Early Childhood Development offers students the opportunity to select a minor in Early Dual Immersion (English language learners) that will help them specialize in areas that are currently in high demand. The minor provides students with more in-depth knowledge regarding English language learners.

**4. Secondary Certification**

The Department of Interdisciplinary Learning and Teaching offers the program of study 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.”

**5. All-Level Certification**

The Department of Interdisciplinary Learning and Teaching offers the program of study required for students seeking All-Level certification (grades EC–12) in Art, Music, Languages other than English (Spanish), or Kinesiology. Students seeking certification to teach in these discipline areas 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 All-Level certification requirements and for information on admission to the Teacher Certification Program. For additional information regarding all-level certification requirements, students should consult the section of this catalog entitled “All-Level 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, hospitals, 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 (<https://statutes.capitol.texas.gov/Docs/OC/htm/OC.53.htm>).

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/](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 Equity and Education (degree-only concentration) (p. 86)
- B.A. degree in Interdisciplinary Studies (degree-only concentration) (p. 88)
- B.A. degree in Multicultural Early Childhood Development (p. 89) (program is being phased out, starting June 1, 2023)

## Bachelor of Arts Degree in Equity and Education (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 Equity and Education 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
<b>Total Credit Hours</b>	<b>42</b>

### EED Degree Requirements

Code	Title	Credit Hours
<b>A. EED required courses</b>		
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
<b>B. Area of specialization</b>		<b>18-24</b>

One area of specialization must be selected by the student seeking the EED 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 EED required courses. Assistance in selection is available from Interdisciplinary Education Advising and Teacher Certification. Students are encouraged to select their area of specialization as early in their program as possible.

#### C. Electives **42-48**

Upper-division courses to complete a minimum total of 120 semester credit hours. Advisors in Interdisciplinary Education Advising and Teacher Certification will assist interdisciplinary studies degree-only majors to use their electives to develop a coherent program of study using existing UTSA course offerings.

**Total Credit Hours 74-86**

### B.A. in Equity and Education (degree-only concentration) – Recommended Four-Year Academic Plan

#### First Year

Fall	Credit Hours
First Year Experience AIS 1203 (core)	3
College Algebra with MAT 1023 Applications (core)	3
Life & Physical Sciences (core)	3
Freshman WRC 1013 Composition I (core)	3

American History (core)	3
<b>Credit Hours</b>	<b>15</b>

#### Spring

American History (core)	3
IDS 2113 Society and Social Issues (core and major)	3
Life & Physical Sciences (core)	3
POL 1013 Introduction to American Politics (core)	3
WRC 1023 Freshman Composition II (core)	3
<b>Credit Hours</b>	<b>15</b>

#### Second Year

##### Fall

Language, Philosophy & Culture (core)	3
MAT 1153 Essential Elements in Mathematics I	3
Government-Political Science (core) POL 1133 or POL 1213	3
IDS 2403 Physical Science	3
IDS 3201 Inquiry in Physical Science	1
Component Area Option (core)	3
<b>Credit Hours</b>	<b>16</b>

##### Spring

IDS 2413 Earth Systems Science	3
IDS 3211 Inquiry in Earth Systems Science	1
Creative Arts (core)	3
MAT 1163 Essential Elements in Mathematics II	3
Area of Specialization course	3
Area of Specialization course	3
<b>Credit Hours</b>	<b>16</b>

#### Third Year

##### Fall

Area of Specialization course	3
Area of Specialization course	3
Upper-division Elective	3
Upper-division Elective	3
Upper-division Elective	3
<b>Credit Hours</b>	<b>15</b>

##### Spring

Upper-division Elective	3
Upper-division Elective	3
Upper-division Elective	3
Upper-division Elective	3
Upper-division Elective	3
<b>Credit Hours</b>	<b>15</b>

#### Fourth Year

##### Fall

Upper-division Elective Area of Specialization Course	3
Upper-division Elective	3
Upper-division Elective	3
Upper-division Elective	3

Upper-division Elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
Upper-division Elective 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
<b>Credit Hours</b>	<b>13</b>
<b>Total Credit Hours</b>	<b>120</b>

## 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
<b>Total Credit Hours</b>	<b>42</b>

### IDS Degree Requirements

Code	Title	Credit Hours
<b>A. IDS core courses</b>		
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>B. IDS required courses</b>		
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 (core)	3
	American History (core)	3
<b>Credit Hours</b>		<b>15</b>

#### 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 (core)	3
	American History (core)	3
	Life & Physical Sciences (core)	3
<b>Credit Hours</b>		<b>15</b>

#### 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**

<b>Spring</b>		
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
<b>Credit Hours</b>		<b>16</b>
<b>Third Year</b>		
<b>Fall</b>		
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
<b>Credit Hours</b>		<b>16</b>
<b>Spring</b>		
IDS 3003	STEM in Social Contexts	3
Area of Specialization course		3
Upper-division elective		3
Upper-division elective		3
Upper-division elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Fall</b>		
IDS 3713	Interdisciplinary Inquiry	3
Upper-division Area of Specialization course		3
Upper-division elective		3
Upper-division elective		3
Upper-division elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
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
<b>Credit Hours</b>		<b>13</b>
<b>Total Credit Hours</b>		<b>120</b>

## Bachelor of Arts Degree in Multicultural Early Childhood Development

**Note: Admission to the Multicultural Early Childhood Development program ended June 1, 2023, and the program is being phased out.**

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
<b>Total Credit Hours</b>	<b>42</b>

### Degree Requirements

Code	Title	Credit Hours
<b>A. Early Childhood core</b>		
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>B. Upper-division coursework</b>		
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. Minor in Early Dual Immersion 18**

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	

**Total Credit Hours 78**

**B.A. in Multicultural Early Childhood Development Recommended Four-Year Academic Plan**

**First Year**

Fall		Credit Hours
AIS 1203 or AIS 1253	Academic Inquiry and Scholarship (core) or AIS: Interdisciplinary Education	3
MAT 1043	Introduction to Mathematics (core)	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (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 (core)	3
	American History (core)	3

Life & Physical Sciences (core)	3
<b>Credit Hours</b>	<b>15</b>

**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
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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
BBL 3053	Foundations of Bilingual Studies	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
BBL 3143	Children's Literature for Bilingual Learners	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
BBL 3043	Social Psychological Considerations in Mexican American Communities	3
BBL 3133	Language Development in Bilinguals	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
BBL 4043	Dual Language Education in Early Childhood	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
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
ESL 4023	Teaching and Learning Language Development of Young Emergent Bilinguals	3
<b>Credit Hours</b>		<b>12</b>
<b>Total Credit Hours</b>		<b>120</b>

#### EED Teacher Certification Concentrations (p. 91)

- B.A. degree in Equity and Education (Core Subjects with Science of Teaching Reading: Early Childhood-Grade 6 with English as a Second Language Supplemental Certification Concentration) (p. 91)

#### IDS Teacher Certification Concentrations (p. 93)

- B.A. degree in Interdisciplinary Studies (Grades 4–8 Language Arts/ Reading/Social Studies Certification Concentration) (p. 93)
- B.A. degree in Interdisciplinary Studies (Grades 4–8 Mathematics/ Science Certification Concentration) (p. 95)
- B.A. degree in Interdisciplinary Studies (EC–12 Special Education Certification Concentration) (p. 97)

## EED Degree 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 <https://tea.texas.gov/>.

## Bachelor of Arts in Equity and Education (Core Subjects with Science of Teaching Reading: Early Childhood–Grade 6 with English as a Second Language Supplemental Certification Concentration)

The minimum number of semester credit hours required for the EED degree with Early Childhood–Grade 6 Core Subjects and English as a Second Language 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 in this section.

## Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.A. degree in Equity and Education 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 1033 should be used to satisfy the core requirement in Life and Natural Sciences. All EED majors must complete AIS 1203 or AIS 1253, and either AAS 2013, MAS 2013, WGSS 2013, or WGSS 2023 is recommended to satisfy the core requirements in Language, Philosophy and Culture. HIS 2053 is recommended to satisfy a core requirement in American History. BBL 2003, BBL 2243 or 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
<b>Total Credit Hours</b>	<b>42</b>

## EED Degree Requirements

Code	Title	Credit Hours
<b>EED support courses</b>		
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
<b>Total Credit Hours</b>		<b>14</b>

## Certification Requirements

Code	Title	Credit Hours
BBL 3403	Cultural and Linguistic Equity for Schooling	3
ECE 3313	Play, Creativity, and Learning	3
ECE 3603	Language and Literacy Acquisition	3
EED 2013	Introduction to Teaching and Learning in a Culturally Diverse Society	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
EDU 3002	Ethical & Legal Foundations of Education	2

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
LTED 3513	Children's Multicultural Literature in Early Childhood – Grade 6	3
LTED 3813	Writing Development & Instruction in Early Childhood–Grade 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	Literacy Assessment and Instruction Early Childhood–Grade 6	3
EED 3303	Teaching, Learning, and Classroom Culture	3
<b>Total Credit Hours</b>		<b>44</b>

### Professional Education Requirements

Code	Title	Credit Hours
The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.		
EED 3110	Preclinical Field Experience I	0
EED 3220	Preclinical Field Experience II	0
CI 4303	Social Studies Methods in Early Childhood–Grade 6	3
CI 4353	Science Methods in Early Childhood–Grade 6	3
CI 4403	Mathematics Methods in Early Childhood–Grade 6	3
CI 4611	Clinical Teaching I: Early Childhood–Grade 6	1
ECE 3143	Child Growth and Development	3
ECE 4203	Assessment and Evaluation in EC-6	3
LTED 4503	Literacy Methods in Early Childhood–Grade 6	3
CI 4621	Clinical Teaching II: Early Childhood–Grade 6	1
<b>Total Credit Hours</b>		<b>20</b>

### B.A. in Equity and Education (Core Subjects with Science of Teaching Reading: Early Childhood–Grade 6 with English as a Second Language Supplemental Certification)– Recommended Four-Year Academic Plan

First Year		
Fall		Credit Hours
First Year Experience (core)	AIS 1203 or AIS 1253 Interdisciplinary Education	3
MAT 1023	College Algebra with Applications (core)	3
Life & Physical Sciences (core)	BIO 1233 recommended	3
WRC 1013	Freshman Composition I (core)	3

American History (core)	HIS 1053 recommended	3
<b>Credit Hours</b>		
<b>15</b>		
<b>Spring</b>		
American History (core)	HIS 2053 recommended	3
EED 2013	Introduction to Teaching and Learning in a Culturally Diverse Society	3
Life & Physical Sciences (core)	AST 1033 recommended	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (core)	3
<b>Credit Hours</b>		
<b>15</b>		
<b>Summer</b>		
Component Area Option (core)	COM 2113 Public Speaking	3
<b>Credit Hours</b>		
<b>3</b>		

Second Year		
Fall		Credit Hours
Language, Philosophy & Culture (core)	AAS 2013, MAS 2013, WGSS 2013, or WGSS 2023 recommended	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
MAT 1153	Essential Elements in Mathematics I	3
Government-Political Science (core)	POL 1133 recommended	3
IDS 2403	Physical Science	3
IDS 3201	Inquiry in Physical Science	1
<b>Credit Hours</b>		
<b>16</b>		
<b>Spring</b>		
Social and Behavioral Science (core)	BBL 2003, BBL 2243, or IDS 2113	3
IDS 2413	Earth Systems Science	3
IDS 3211	Inquiry in Earth Systems Science	1
Creative Arts (core)	MAS 2023 recommended	3
MAT 1163	Essential Elements in Mathematics II	3
<b>Credit Hours</b>		
<b>13</b>		

Third Year		
Fall		Credit Hours
Admission to the Teacher Certification Program		
EED 3110	Preclinical Field Experience I	0
EED 3303	Teaching, Learning, and Classroom Culture <sup>1</sup>	3
ECE 3143	Child Growth and Development	3
ECE 3603	Language and Literacy Acquisition	3
ESL 3033	Foundations of English as a Second Language	3

EDU 3002	Ethical & Legal Foundations of Education	2
<b>Credit Hours</b>		<b>14</b>
<b>Spring</b>		
(must be taken Fall or Spring semesters)		
ECE 4203	Assessment and Evaluation in EC–6 <sup>1</sup>	3
ECE 3313	Play, Creativity, and Learning <sup>1</sup>	3
LTED 3823	Literacy Assessment and Instruction Early Childhood–Grade 6 <sup>1</sup>	3
LTED 3513	Children’s Multicultural Literature in Early Childhood – Grade 6 <sup>1</sup>	3
ESL 3003	Language and Schooling <sup>1</sup>	3
EED 3220	Preclinical Field Experience II	0
<b>Credit Hours</b>		<b>15</b>
<b>Summer</b>		
BBL 3403	Cultural and Linguistic Equity for Schooling	3
ESL 3053	Literacy in a Second Language	3
SPE 3603	Introduction to Special Education	3
<b>Credit Hours</b>		<b>9</b>
<b>Fourth Year</b>		
<b>Fall</b>		
(must be taken Fall or Spring semesters)		
CI 4353	Science Methods in Early Childhood–Grade 6 <sup>2</sup>	3
CI 4403	Mathematics Methods in Early Childhood–Grade 6 <sup>2</sup>	3
LTED 4503	Literacy Methods in Early Childhood–Grade 6 <sup>2</sup>	3
CI 4611	Clinical Teaching I: Early Childhood–Grade 6 <sup>2</sup>	1
<b>Credit Hours</b>		<b>10</b>
<b>Spring</b>		
(must be taken Fall or Spring semesters)		
CI 4303	Social Studies Methods in Early Childhood–Grade 6 <sup>3</sup>	3
LTED 3813	Writing Development & Instruction in Early Childhood–Grade 6 <sup>3</sup>	3
ESL 3023	Second Language Teaching and Learning in EC–6 <sup>3</sup>	3
CI 4621	Clinical Teaching II: Early Childhood–Grade 6 <sup>3</sup>	1
<b>Credit Hours</b>		<b>10</b>
<b>Total Credit Hours</b>		<b>120</b>

<sup>1</sup> Must be taken concurrently.

<sup>2</sup> Must be taken concurrently.

<sup>3</sup> Must be taken concurrently.

## IDS Degree 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 (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 or AIS 1253, 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

Code	Title	Credit Hours
<b>A. IDS core courses</b>		
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>B. IDS support courses</b>		
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
<b>Total Credit Hours</b>		<b>33</b>

### Certification Requirements

Code	Title	Credit Hours
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 3073	Second Language Teaching and Learning for Grades 4-8	3
EED 2013	Introduction to Teaching and Learning in a Culturally Diverse Society	3
LTED 3523	Reading Development, Processes, and Instruction Grades 4-8	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
<b>Total Credit Hours</b>		<b>30</b>

### Professional Education Requirements

Code	Title	Credit Hours
The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.		
CI 4543	Social Studies Methods in Grades 4-8	3
CI 4553	Approaches to Service-Learning in Social Studies–Grades 4–8	3

CI 4603	Classroom Management Strategies in Grades 4–8	3
CI 4623	Applied Teaching: Grades 4–8	3
CI 4633	Clinical Teaching: Grades 4-8	6
or CI 4626	Clinical Teaching: Grades 4-8	
<b>Total Credit Hours</b>		<b>18</b>

### B.A. in Interdisciplinary Studies (Grades 4–8 Language Arts/Reading/Social Studies Certification Concentration) – Recommended Four-Year Academic Plan

<b>First Year</b>		
<b>Fall</b>		<b>Credit Hours</b>
AIS 1203	Academic Inquiry and Scholarship (core)	3
or AIS 1253	or AIS: Interdisciplinary Education	
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 (core)	3
Life & Physical Sciences (core) (BIO 1233 recommended)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
HIS 1053	United States History: Civil War Era to Present (core and major)	3
IDS 2113	Society and Social Issues (core and major)	3
EED 2013	Introduction to Teaching and Learning in a Culturally Diverse Society	3
WRC 1023	Freshman Composition II (core)	3
Life & Physical Sciences (core) (BIO 1243 recommended)		3
<b>Credit Hours</b>		<b>15</b>
<b>Summer</b>		
HIS 2053	Texas History	3
Component Area Option (core) (COM 2113 recommended)		3
<b>Credit Hours</b>		<b>6</b>
<b>Second Year</b>		
<b>Fall</b>		<b>Credit Hours</b>
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	or 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
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
ENG 3303	Theory and Practice of Composition	3

HIS 3123 or GES 3153	Colonial Texas under Spanish and Mexican Rule to 1836 or Geography of Texas	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
POL 1133	Texas Politics and Society (core)	3
MAS 2023	Latino Cultural Expressions (core)	3
<b>Credit Hours</b>		<b>15</b>
<b>Third Year</b>		
<b>Fall</b>		
ESL 3073	Second Language Teaching and Learning for Grades 4-8	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
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
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 Development, Processes, and Instruction 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
<b>Credit Hours</b>		<b>15</b>
<b>Summer</b>		
EDP 4203	Assessment and Evaluation	3
<b>Credit Hours</b>		<b>3</b>
<b>Fourth Year</b>		
<b>Fall</b>		
CI 4543	Social Studies Methods in Grades 4-8 <sup>1</sup>	3
CI 4553	Approaches to Service-Learning in Social Studies-Grades 4-8 <sup>1</sup>	3
CI 4603	Classroom Management Strategies in Grades 4-8 <sup>1</sup>	3
CI 4623	Applied Teaching: Grades 4-8 <sup>1</sup>	3
LTED 3533	Reading and Writing Across the Disciplines-Grades 4-8	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
CI 4626	Clinical Teaching: Grades 4-8 <sup>2</sup>	6
<b>Credit Hours</b>		<b>6</b>
<b>Total Credit Hours</b>		<b>120</b>

<sup>1</sup> Admission to the Teacher Certification Program is required.

Courses must be taken concurrently.

<sup>2</sup> A grade of "B" or better is required to be recommended for the Teacher Certification.

## 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 or AIS 1253, 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
<b>Total Credit Hours</b>	<b>42</b>

### IDS Degree Requirements

Code	Title	Credit Hours
<b>A. IDS core courses</b>		
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>B. IDS support courses</b>		
AST 1013 or AST 1033	Introduction to Astronomy Exploration of the Solar System	3
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
<b>Total Credit Hours</b>		<b>42</b>

### Certification Requirements

Code	Title	Credit Hours
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 3073	Second Language Teaching and Learning for Grades 4-8	3
EED 2013	Introduction to Teaching and Learning in a Culturally Diverse Society	3
SPE 3603	Introduction to Special Education	3
LTED 3523	Reading Development, Processes, and Instruction Grades 4-8	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
<b>Total Credit Hours</b>		<b>24</b>

### Professional Education Requirements

Code	Title	Credit Hours
The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.		
CI 4433	Science Methods in Grades 4-8	3
CI 4443	Mathematics Methods in Grades 4-8	3
CI 4603	Classroom Management Strategies in Grades 4–8	3
CI 4623	Applied Teaching: Grades 4–8	3
CI 4633	Clinical Teaching: Grades 4-8	6
or CI 4626	Clinical Teaching: Grades 4-8	
<b>Total Credit Hours</b>		<b>18</b>

### B.A. in Interdisciplinary Studies (Grades 4–8 Mathematics/Science Certification Concentration) – Recommended Four-Year Academic Plan

#### First Year

Fall		Credit Hours
AIS 1203 or AIS 1253	Academic Inquiry and Scholarship (core) or AIS: Interdisciplinary Education	3
MAT 1023	College Algebra with Applications (core)	3
WRC 1013	Freshman Composition I (core)	3
American History (core) (HIS 1053 recommended)		3
Life & Physical Sciences (core) (BIO 1233 recommended)		3
<b>Credit Hours</b>		<b>15</b>

#### Spring

AST 1013 or AST 1033	Introduction to Astronomy (core and major) or Exploration of the Solar System	3
EED 2013	Introduction to Teaching and Learning in a Culturally Diverse Society	3
MAT 1093	Precalculus	3
WRC 1023	Freshman Composition II (core)	3
American History (core) (HIS 2053 recommended)		3
<b>Credit Hours</b>		<b>15</b>

#### Summer

IDS 2403 & IDS 3211	Physical Science and Inquiry in Earth Systems Science	4
or		
IDS 3224	Earth Systems Science Investigations	3
Component Area Option (core) (COM 2113 recommended)		3
<b>Credit Hours</b>		<b>7</b>

#### Second Year

Fall		Credit Hours
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
<b>Credit Hours</b>		<b>15</b>

#### 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
<b>Credit Hours</b>		<b>16</b>
<b>Summer</b>		
IDS 2413 & IDS 3201	Earth Systems Science and Inquiry in Physical Science	4
IDS 3234	Investigations in Physical Science	
<b>Credit Hours</b>		<b>4</b>
<b>Third Year</b>		
<b>Fall</b>		
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
<b>Credit Hours</b>		<b>12</b>
<b>Spring</b>		
EDP 4203	Assessment and Evaluation <sup>1</sup>	3
ESL 3073	Second Language Teaching and Learning for Grades 4-8	3
IDS 3713	Interdisciplinary Inquiry	3
LTED 3523	Reading Development, Processes, and Instruction Grades 4-8	3
SPE 3603	Introduction to Special Education	3
<b>Credit Hours</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Fall</b>		
CI 4433	Science Methods in Grades 4-8 <sup>1,2</sup>	3
CI 4443	Mathematics Methods in Grades 4-8 <sup>1,2</sup>	3
CI 4603	Classroom Management Strategies in Grades 4–8 <sup>1,2</sup>	3
CI 4623	Applied Teaching: Grades 4–8 <sup>1,2</sup>	3
LTED 3533	Reading and Writing Across the Disciplines-Grades 4–8	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
CI 4626	Clinical Teaching: Grades 4-8 <sup>3</sup>	6
<b>Credit Hours</b>		<b>6</b>
<b>Total Credit Hours</b>		<b>120</b>

- <sup>1</sup> Admission to the Teacher Certification Program is required.  
<sup>2</sup> Must be taken concurrently.  
<sup>3</sup> A grade of "B" or better is required to be recommended for the Teacher Certification.

## 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.

### 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 should be used to satisfy the core requirement in Life and Physical Sciences. All IDS majors must complete AIS 1203 or AIS 1253. 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
<b>Total Credit Hours</b>	<b>42</b>

### IDS Degree Requirements

Code	Title	Credit Hours
<b>A. IDS core courses</b>		
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>B. IDS support courses</b>		
MAT 1153	Essential Elements in Mathematics I	3
MAT 1163	Essential Elements in Mathematics II	3
<b>Total Credit Hours</b>		<b>21</b>

## Certification Requirements

Code	Title	Credit Hours
ECE 3603	Language and Literacy Acquisition	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
EED 2013	Introduction to Teaching and Learning in a Culturally Diverse Society	3
LTED 3523	Reading Development, Processes, and Instruction 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	3
SPE 3673	Behavioral Assessment of Students with Autism and Developmental Disorders	3
SPE 3683	Special Education Across the Lifespan	3
SPE 4683	Communication and Collaboration in Special Education	3
SPE 4693	Assistive Technology	3
<b>Total Credit Hours</b>		<b>39</b>

## Professional Education Requirements

Code	Title	Credit Hours
The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program. IDS degree requirements and IDS support courses listed above are prerequisite to enrollment in Professional Special Education courses.		
SPE 3653	Practicum in Special Education (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	Behavioral Instruction of Students with Autism and Developmental Disabilities	3
Clinical Teaching:		
CI 4713 or CI 4716	Clinical Teaching: All Level EC-12	6
<b>Total Credit Hours</b>		<b>21</b>

## B.A. in Interdisciplinary Studies (EC-12 Special Education Certification Concentration) – Recommended Four-Year Academic Plan

First Year		Credit Hours
<b>Fall</b>		
AIS 1203 or AIS 1253	Academic Inquiry and Scholarship (core) or AIS: Interdisciplinary Education	3
BIO 1233	Contemporary Biology I (core)	3
MAT 1023	College Algebra with Applications (core)	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
AST 1033	Exploration of the Solar System (core)	3
HIS 2053	Texas History (core)	3
EED 2013	Introduction to Teaching and Learning in a Culturally Diverse Society	3
IDS 2113	Society and Social Issues (core and major)	3
WRC 1023	Freshman Composition II (core)	3
<b>Credit Hours</b>		<b>15</b>
<b>Summer</b>		
AAS 2013 or MAS 2013	Introduction to African American Studies (core) or Introduction to Chicano(a) Studies	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
Component Area Option (core)		3
<b>Credit Hours</b>		<b>12</b>
<b>Second Year</b>		
<b>Fall</b>		
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
LTED 3803	Writing Development, Processes, and Instruction-Grades 4-8	3
American History (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
ECE 3603	Language and Literacy Acquisition	3
IDS 3013	Diversity, Equity, and the Social Sciences	3
MAT 1163	Essential Elements in Mathematics II	3

SPE 3603	Introduction to Special Education	3
SPE 3693	Special Education Law	3
<b>Credit Hours</b>		<b>15</b>

**Third Year****Fall**

Admission to the Teacher Certification Program		
LTED 3523	Reading Development, Processes, and Instruction Grades 4-8	3
SPE 3623	Assessment of Students with Mild/Moderate Disabilities <sup>1</sup>	3
SPE 3653	Practicum in Special Education (Mild/Moderate Disabilities) <sup>1</sup>	3
SPE 4623	Mathematics Instruction for Students with Disabilities <sup>1</sup>	3
SPE 4643	Instruction for Students with Mild/Moderate Disabilities <sup>1</sup>	3
<b>Credit Hours</b>		<b>15</b>

**Spring**

IDS 3003	STEM in Social Contexts	3
SPE 3633	Classroom and Behavior Management <sup>2</sup>	3
SPE 3673	Behavioral Assessment of Students with Autism and Developmental Disorders <sup>2</sup>	3
SPE 3683	Special Education Across the Lifespan <sup>2</sup>	3
SPE 4673	Behavioral Instruction of Students with Autism and Developmental Disabilities <sup>2</sup>	3
<b>Credit Hours</b>		<b>15</b>

**Fourth Year****Fall**

IDS 3713	Interdisciplinary Inquiry	3
SPE 4653	Practicum in Special Education (Moderate/Severe Disabilities) <sup>3</sup>	3
SPE 4683	Communication and Collaboration in Special Education <sup>3</sup>	3
SPE 4693	Assistive Technology <sup>3</sup>	3
<b>Credit Hours</b>		<b>12</b>

**Spring**

CI 4716	Clinical Teaching: All Level EC-12	6
<b>Credit Hours</b>		<b>6</b>
<b>Total Credit Hours</b>		<b>120</b>

- <sup>1</sup> Must be taken concurrently.  
<sup>2</sup> Must be taken concurrently.  
<sup>3</sup> 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 certification 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. Certification 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 3083	Second Language Teaching and Learning for Grades 7-12	3
EED 2013	Introduction to Teaching and Learning 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.

CI 4223	Secondary Mathematics Methods	3
or CI 4243	Secondary Science Methods	
or CI 4233	Secondary Social Studies Methods	
or CI 4253	Secondary English Language Arts and Reading Methods	
or CI 4263	Secondary Music Methods	
or CI 4283	EC-12 Art Methods	
or CI 4293	EC-12 Languages Other Than English (LOTE) Methods	
EDP 4203	Assessment and Evaluation	3
LTED 3773	Reading and Writing Across the Disciplines- Grades 7–12 <sup>1</sup>	3

Students will take one CI 42X3 which is based on the content certification. CI 42X3, EDP 4203, and LTED 3773 are restricted classes. Advisor authorization for these classes will be issued only if all prerequisites have been completed. LTED 3773 and CI 42X3 are not offered during the Summer semester.

### Clinical Teaching Component

CI 4643	Clinical Teaching: Grades 7-12	6
or CI 4646	Clinical Teaching: Grades 7–12	

**Total Credit Hours** **33**

<sup>1</sup> ELAR Teachers may take LTED 3673 and LTED 3683 instead of LTED 3773.

## ALL-Level (EC-12) Certification Programs

Students seeking All-Level Certification to teach Art, Foreign Language, Kinesiology (PE), Music, or Special Education\* 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 all-level certification requirements and admission to the Teacher Certification Program. Requirements for degrees and certification 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. Certification 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. Consult with your academic advisor.

\*Special Education certification level will be changed from All-Level to EC-6 and 4-8th levels; please consult with advisor.

## Grades 7-12 and EC-12 Supplemental Certification (TEA approved) or Supplementary Certificates (UTSA Issued) (9 hours)

The following Supplemental Certification (TEA approved) or Supplementary Certificate (UTSA Issued) are available for those pursuing initial 7-12 content area or EC-12 certification.

### Supplemental Certification (TEA approved)

#### Content Area + Bicultural-Bilingual Education (BBED)

BBL 3033	Mexican Americans in the Southwest	3
or MAS 3033	Mexican Americans in the Southwest	
BBL 3053	Foundations of Bilingual Studies	3
BBL 4063	Bicultural-Bilingual Approaches to Teaching Social Studies and Integrating Other Content Areas	3

#### Content Area + English as a Second Language (ESL)

ESL 3003	Language and Schooling	3
ESL 3033	Foundations of English as a Second Language	3
ESL 3053	Literacy in a Second Language	3

### Supplementary Certificates (UTSA Issued)

#### Content Area + REGSS African American Studies (AAS)

AAS 3013	Black Communities and Culture	3
AAS 3123	Civil Rights Movement and African American Education	3
AAS 4013	Topics in African American Studies	3

#### Content Area + REGSS Mexican American Studies (MAS)

MAS 3003	Chicana/o/x Music	3
MAS 3063	Historical Legacies: Chicanas/os in Education	3
or MAS 4013	¡Sí se puede! Latino Leadership, Activism and Organizing	
MAS 3043	Social Psychological Considerations in Mexican American Communities	3
or MAS 3413	Mexican American Family	

#### Content Area + REGSS Women's Studies (WS)

WGSS 2013	Introduction to Women's Studies	3
or WGSS 2023	Introduction to LGBTQ Studies	
WGSS 4863	Transnational Feminisms	3
WGSS 4953	Special Topics in Women's Studies	3



## Department of Race, Ethnicity, Gender, and Sexuality Studies

The Department of Race, Ethnicity, Gender, and Sexuality Studies offers a Bachelor of Arts (B.A.) degree in Mexican American Studies, a Bachelor of Arts (B.A.) degree in Women's, Gender and Sexuality Studies, as well as minors in African American Studies and Women's Studies. 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.

### Department Honors

The Department of Race, Ethnicity, Gender, and Sexuality 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 in the Mexican American Studies major, 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.

Students whose grade point average in Women's, Gender and Sexuality 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, Gender and Sexuality Studies. Students must complete 6 semester credit hours of WGSS 4993 Honors Thesis, complete a substantial research paper approved by the Women's, Gender and Sexuality 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 Gender and Sexuality Studies Program regarding requirements and appropriate deadlines.

### 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, hospitals, 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 (<https://statutes.capitol.texas.gov/Docs/OC/htm/OC.53.htm>).

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/](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 and Partnerships in the College of Education and Human Development.

- B.A. degree in African American Studies (p. 101)
- B.A. degree in Mexican American Studies (p. 103)
- B.A. degree in Women's, Gender and Sexuality Studies (p. 105)

## Bachelor of Arts Degree in African American Studies

The Bachelor of Arts (B.A.) in African American Studies is an interdisciplinary program exploring Black lives and communities with an intersectional lens. Majors are required to complete 78 semester credit hours from a stepwise program of study that must include 21 semester credit hours from one of four specializations: Political Thought and Public Policy, African Diaspora and Globalization, Social Movements, and Culture and Society.

The minimum number of semester credit hours required for this degree, including 42 semester credit hours of Core Curriculum requirements, is 120. 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.

African American Studies majors must also complete 36 semester credit hours of elective courses. It is recommended that elective courses connect to students' program specializations wherever possible to expand the ability to double major. Majors are encouraged to select a double major closely associated with their specialization (i.e., Sociology, Anthropology, Political Science, History, Education, Mass Communications, English, Interdisciplinary Studies).

### Core Curriculum Requirements (42 semester credit hours)

Students seeking a B.A. in African 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.

STA 1053 is recommended to satisfy the core requirement in Mathematics. AAS 2013 or AAS 2113 are recommended to satisfy the core requirement in Language, Philosophy, and Culture. POL 1213 is recommended to satisfy a core requirement in Government – Political Science. ANT 2053 or SOC 2013 are 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.

#### 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
<b>Total Credit Hours</b>	<b>42</b>

## Degree Requirements

Code	Title	Credit Hours
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### 1. Required Courses 12

REGS 2003	Intersectional Approaches to Social Justice	
AAS 2013	Introduction to African American Studies	
AAS 3013	Black Communities and Culture	
AAS 4213	Senior Capstone	

### 2. Support Courses 9

AAS 2113	African American Culture, Leadership and Social Issues	
AAS 3023	Global Blackness and Afro-Latinidad	
AAS 3113	Doing Black Studies Research	
AAS 3123	Civil Rights Movement and African American Education	
AAS 3133	African Americans in Higher Education	
AAS 4043	Intersectionality	
REGS 4083	Ethnic and Gender Studies Research Seminar	
AAS 4113	The Black Church and Social Change in the 20th-Century	
AAS 4913	Independent Study	
AAS 4103	Writing Black Lives	

### 3. Specialization Courses 21

Select one of the following specialization areas and complete seven of the applicable courses (and select special topics). Students are encouraged to select their specialization as early in their program as possible.

A. Political Thought and Public Policy	
POL 1213	Civil Rights in Texas and America
PAL 3113	Minorities and the Law
POL 3203	African American Political Thought
POL 3293	Political Movements
POL 3303	Race and American Politics
B. African Diaspora and Globalization	
AMS 3343	Studies in Race and Ethnicity
ANT 3303	Nature and Culture in Greater Amazonia
BBL 2033	Multiculturalism in the Southwest
BBL 3403	Cultural and Linguistic Equity for Schooling
ENG 2383	Multiethnic Literatures of the United States
HIS 3113	North American Indian Histories
GLA 3763	Globalization
C. Social Movements	
AAS 3123	Civil Rights Movement and African American Education
HIS 3623	History of the Civil Rights Movement
POL 1213	Civil Rights in Texas and America

POL 3293	Political Movements
AAS 4133	Black Social Movements
D. Culture and Society	
EDU 2103	Social Foundations for Education in a Diverse U.S. Society
HIS 3563	African American History to the Civil War
HIS 3573	African American History since the Civil War
PAL 3113	Minorities and the Law
IDS 2113	Society and Social Issues
SOC 2013	Social Problems
SOC 3043	Race and Ethnic Relations
MAS 4023	Black and Brown Youth Resistance
MAS 4033	Women of Color Feminisms

### 4. Elective Courses 36

Select 36 semester credit hours of electives.

**Total Credit Hours 78**

## B.A. in African American Studies - Recommended Four-Year Academic Plan

### First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship	3
WRC 1013	Freshman Composition I	3
AAS 2013	Introduction to African American Studies	3
ANT 2033	Introduction to Biological Anthropology	3
Life and Physical Sciences Core		3
<b>Credit Hours</b>		<b>15</b>

### Spring

POL 1013	Introduction to American Politics	3
WRC 1023	Freshman Composition II	3
STA 1053	Basic Statistics	3
Creative Arts Core		3
Elective course (see Section 4 above)		3
<b>Credit Hours</b>		<b>15</b>

### Second Year

#### Fall

AAS 2113	African American Culture, Leadership and Social Issues	3
SOC 2013	Social Problems	3
POL 1213	Civil Rights in Texas and America	3
Specialization course (see Section 3 above)		3
COM 2113	Public Speaking	3
<b>Credit Hours</b>		<b>15</b>

#### Spring

AAS 3013	Black Communities and Culture	3
HIS 1043	United States History: Pre-Columbus to Civil War Era	3
Elective course (see Section 4 above)		3
Elective course (see Section 4 above)		3

Specialization course (see Section 3 above)		3
<b>Credit Hours</b>		<b>15</b>
<b>Third Year</b>		
<b>Fall</b>		
AAS 3113	Doing Black Studies Research	3
HIS 1053	United States History: Civil War Era to Present	3
REGS 2003	Intersectional Approaches to Social Justice	3
Specialization course (see Section 3 above)		3
Elective course (see Section 4 above)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
AAS 4043	Intersectionality	3
Elective course (see Section 4 above)		3
Elective course (see Section 4 above)		3
Specialization course (see Section 3 above)		3
Specialization course (see Section 3 above)		3
<b>Credit Hours</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Fall</b>		
AAS 4103	Writing Black Lives	3
Specialization course (see Section 3 above)		3
Elective course (see Section 4 above)		3
Elective course (see Section 4 above)		3
Elective course (see Section 4 above)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
AAS 4213	Senior Capstone	3
Specialization course (see Section 3 above)		3
Elective course (see Section 4 above)		3
Elective course (see Section 4 above)		3
Elective course (see Section 4 above)		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120</b>

## 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 45 semester credit hours from a prescribed program of study that must include 18 semester credit hours from one of four categories: Cultural Studies; History; Music; or Social Justice.

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 45-semester-hour content of their study (i.e., Bicultural Bilingual Studies, Business Administration, English, History Categories).

### 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
<b>Total Credit Hours</b>	<b>42</b>

### Degree Requirements

Code	Title	Credit Hours
<b>A. Mexican American Studies</b>		
1. 18 Hours of Required Courses		18
REGS 2003	Intersectional Approaches to Social Justice	
MAS 2013	Introduction to Chicano(a) Studies	
MAS 2023	Latino Cultural Expressions	
MAS 2043	Selena: A Mexican American Identity and Experience	
MAS 3033	Mexican Americans in the Southwest	
REGS 4083	Ethnic and Gender Studies Research Seminar	
2. Select three courses from the following for a total of 9 hours		9
MAS 3003	Chicana/o/x Music	
MAS 3013	Chicana/o Queer Communities, Identities and Theories	
MAS 3043	Social Psychological Considerations in Mexican American Communities	
MAS 3063	Historical Legacies: Chicanas/os in Education	

MAS 3123	Mexican American Culture
MAS 3413	Mexican American Family
AAS 4013	Topics in African American Studies
MAS 4013	Sí se puede! Latino Leadership, Activism and Organizing
WGSS 4623	Feminist Theories
MAS 4953	Special Studies in Mexican American Studies
WGSS 4953	Special Topics in Women's Studies

**B. Categories**

1. Select one of the following categories for a total of 18 hours. Students are encouraged to select the category as early in their program as possible. 18

**Cultural Studies**

AAS 2013	Introduction to African American Studies
MAS 3003	Chicana/o/x Music
AAS 3013	Black Communities and Culture
MAS 3013	Chicana/o Queer Communities, Identities and Theories
MAS 3423	Mexican American Foodways: Recipes for Justice, Health, and Liberation
MAS 4953	Special Studies in Mexican American Studies
AAS 4013	Topics in African American Studies
MAS 4023	Black and Brown Youth Resistance
or AAS 4023	Black and Brown Youth Resistance
MAS 4033	Women of Color Feminisms
or AAS 4033	Women of Color Feminisms
or WGSS 4033	Women of Color Feminisms
MAS 4143	Latinas/xs in Music and Society
WGSS 4863	Transnational Feminisms

**History**

MAS 3003	Chicana/o/x Music
HIS 3033	The Spanish and Mexican Borderlands
HIS 3083	History of the American West
HIS 3303	History of Mexico
HIS 3333	Mexican American History since 1900
HIS 3423	United States-Mexico Border
HIS 4973	Seminar in History

**Music**

MAS 2043	Selena: A Mexican American Identity and Experience
MAS 2053	Mexican American Music Performance Practicum: MAS Corazón de San Antonio
MAS 2063	Latinx Songwriting
MAS 2073	Chicanx Music Methods and Pedagogy
MAS 3003	Chicana/o/x Music
MAS 3113	Latinx Music Production and Industry
MAS 4143	Latinas/xs in Music and Society

**Social Justice**

WGSS 2023	Introduction to LGBTQ Studies
MAS 3013	Chicana/o Queer Communities, Identities and Theories

MAS 3063	Historical Legacies: Chicanas/os in Education
AAS 3123	Civil Rights Movement and African American Education
AAS 3133	African Americans in Higher Education
MAS 4013	Sí se puede! Latino Leadership, Activism and Organizing
MAS 4023	Black and Brown Youth Resistance
or AAS 4023	Black and Brown Youth Resistance
MAS 4033	Women of Color Feminisms
or AAS 4033	Women of Color Feminisms
or WGSS 4033	Women of Color Feminisms
MAS 4043	Chicana/x Feminisms
or WGSS 4033	Women of Color Feminisms

**C. Electives**

Select 33 semester credit hours of electives 33

**Total Credit Hours 78**

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

**First Year**

		<b>Credit Hours</b>
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
ANT 2033	Introduction to Biological Anthropology (core)	3
WRC 1013	Freshman Composition I (core)	3
Mathematics (core)		3
REGS 2003	Intersectional Approaches to Social Justice (Required for MAS Majors)	3
	<b>Credit Hours</b>	<b>15</b>

**Spring**

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

**Second Year**

<b>Fall</b>		
ANT 2053	Introduction to Cultural Anthropology (core)	3
or ANT 2063	or Language, Thought, and Culture	
ECO 2003	Economic Principles and Issues (core)	3
MAS 2013	Introduction to Chicano(a) Studies (core)	3
POL 1133	Texas Politics and Society (core)	3
or POL 1213	or Civil Rights in Texas and America	

Categories courses (see Section B) 3

**Credit Hours 15**

**Spring**

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

**Third Year****Fall**

MAS 2043	Selena: A Mexican American Identity and Experience	3
Category courses (see Section B)		6
Elective in MAS		3
Upper-division electives (see Section C)		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

Category courses (see Section B)		6
Upper-division electives (see Section C)		9
<b>Credit Hours</b>		<b>15</b>

**Fourth Year****Fall**

Electives (enough upper-division hours to meet required 33, see Section C)		12
<b>Credit Hours</b>		<b>12</b>

**Spring**

REGS 4083	Ethnic and Gender Studies Research Seminar	3
American History (core)		3
Electives (enough upper-division hours to meet required 33; see Section C)		12
<b>Credit Hours</b>		<b>18</b>
<b>Total Credit Hours</b>		<b>120</b>

## Bachelor of Arts Degree in Women's, Gender and Sexuality Studies

The Bachelor of Arts (B.A.) in Women's, Gender and Sexuality 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, Gender and Sexuality 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
<b>Total Credit Hours</b>	<b>42</b>

### Degree Requirements

Code	Title	Credit Hours
<b>A. Major courses</b>		
<b>1. Required courses</b>		
WGSS 2013	Introduction to Women's Studies	3
WGSS 3613	Feminist Research Methodologies	3
WGSS 4623	Feminist Theories	3
WGSS 4933	Internship in Women's Studies	3
WGSS 4973	Seminar in Women's Studies	3
2. Select 1 course from the Globalization and Borderlands group below		3
3. Select 1 course from the Culture and Society group below		3
<b>B. Groups</b>		
Select eight courses from at least two of the following groups:		24
<b>Theory and Methods</b>		
ENG 4393	Feminist Theory of Literature	
REGS 2003	Intersectional Approaches to Social Justice	
WGSS 3953	Special Topics	
WGSS 4953	Special Topics in Women's Studies	
<b>Globalization and Borderlands</b>		
BBL 2023	Latino Cultural Expressions	
GES 3653	Gender and Cities: An Introduction to Feminist Geography	
WGSS 4863	Transnational Feminisms	
<b>Culture and Society</b>		
AMS 3443	Studies in Gender and Sexuality	
ANT 3603	Sex, Gender, and Culture	
BBL 3123	Mexican American Culture	
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	
MAS 3043	Social Psychological Considerations in Mexican American Communities	
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	
WGSS 2023	Introduction to LGBTQ Studies	
WGSS 4913	Independent Study	
WGSS 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, Gender and Sexuality Studies.

**Total Credit Hours** **78**

**B.A. in Women’s, Gender and Sexuality Studies – Recommended Four-Year Academic Plan**

**First Year**

		<b>Credit Hours</b>
<b>Fall</b>		
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 (core)	3
Mathematics (core)		3
<b>Credit Hours</b>		<b>15</b>

**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 (core)	3
Free elective		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

**Second Year**

**Fall**

WGSS 2013	Introduction to Women’s Studies	3
Free elective		3
Free elective		3
Language, Philosophy & Culture (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

Culture and Society group		3
Free elective		3
Globalization and Borderlands group		3
Social & Behavioral Sciences (core)		3
Component Area Option (core)		3
<b>Credit Hours</b>		<b>15</b>

**Third Year**

**Fall**

WGSS 3613	Feminist Research Methodologies	3
Free elective		3
Subject Group elective		3
Subject Group elective		3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

WGSS 4623	Feminist Theories	3
Free elective		3
Subject Group elective		3
Subject Group elective		3
Upper-division free elective		3
<b>Credit Hours</b>		<b>15</b>

**Fourth Year**

**Fall**

WGSS 4973	Seminar in Women’s Studies	3
Free elective		3
Free elective		3
Subject Group elective		3
Subject Group elective		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

WGSS 4933	Internship in Women’s Studies	3
Free elective		3
Subject Group elective		3
Subject Group elective		3

Upper-division free elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

- Minor in African American Studies (p. 107)
- Minor in Women's Studies (p. 107)

## 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 9 hours of which must be at the upper-division level.

Code	Title	Credit Hours
<b>A. Required courses:</b>		
AAS 2013	Introduction to African American Studies	3
AAS 2113	African American Culture, Leadership and Social Issues	3
REGS 2003	Intersectional Approaches to Social Justice	3
<b>B. Two African American Studies courses selected from the following:</b>		<b>6</b>
AAS 3013	Black Communities and Culture	
AAS 3113	Doing Black Studies Research	
AAS 3123	Civil Rights Movement and African American Education	
AAS 3133	African Americans in Higher Education	
AAS 4013	Topics in African American Studies	
<b>C. One course selected from the following:</b>		<b>3</b>
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 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 and American Politics	
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	
<b>Total Credit Hours</b>		<b>18</b>

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

## 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).

Code	Title	Credit Hours
<b>A. Required Courses</b>		
WGSS 2013	Introduction to Women's Studies	3
WGSS 4623	Feminist Theories	3
<b>B. Additional coursework</b>		
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 3043	Social Psychological Considerations in Mexican American Communities	
BBL 3123	Mexican American Culture	
BIO 2003	Biology of Human Reproduction	
CLA 3123	Cultural Issues in Mediterranean Antiquity	
CRJ 4403	Race, Ethnicity, and Criminal Justice	
CRJ 4463	Gender and Crime	
ENG 3133	Women and Literature	
ENG 4393	Feminist Theory of Literature	
HIS 3043	History of Women in the United States: Pre-Columbus to 1890	
HIS 3053	History of Women in the United States: Since 1890	
HIS 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	

WGSS 2023	Introduction to LGBTQ Studies	
WGSS 3613	Feminist Research Methodologies	
WGSS 3953	Special Topics	
WGSS 4863	Transnational Feminisms	
WGSS 4913	Independent Study	
WGSS 4933	Internship in Women's Studies	
WGSS 4953	Special Topics in Women's Studies	
<b>Total Credit Hours</b>		<b>18</b>

**Note:** Please consult the Department of Race, Ethnicity, Gender, and Sexuality Studies for a complete list of courses that fulfill the Women's Studies 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.

## Supplementary Certificates (UTSA Issued)

The following Supplementary Certificates (UTSA Issued) are available for those pursuing initial 7-12 content area or EC-12 teacher certification.

### Content Area + REGSS African American Studies (AAS)

AAS 3013	Black Communities and Culture	3
AAS 3123	Civil Rights Movement and African American Education	3
AAS 4013	Topics in African American Studies	3

### Content Area + REGSS Mexican American Studies (MAS)

MAS 3003	Chicana/o/x Music	3
MAS 3043	Social Psychological Considerations in Mexican American Communities	3
or MAS 3413	Mexican American Family	
MAS 3063	Historical Legacies: Chicanas/os in Education	3
or MAS 4013	Sí se puede! Latino Leadership, Activism and Organizing	

### Content Area + REGSS Women's Studies (WS)

WGSS 2013	Introduction to Women's Studies	3
or WGSS 2023	Introduction to LGBTQ Studies	
WGSS 4863	Transnational Feminisms	3
WGSS 4953	Special Topics in Women's Studies	3

# 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 Equity and Education (EC-6 Core Subjects with Science of Teaching Reading and English as a Second Language Supplemental Certification) These students should refer to the section of this catalog for the EED Teacher Certification Concentration. Please contact Academic Advising for assistance in planning your degree semesters and goals.
- 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 with Science of Teaching Reading or Mathematics/Science. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (grades 4–8 concentrations). Please contact Academic Advising for assistance in planning your degree semesters and goals.
- Undergraduate students interested in teaching **bilingual pre-kindergarten through sixth grades** will declare a major in Equity and Education (EC-6 Core Subjects with Science of Teaching Reading and Bilingual Supplemental Certification). These students should refer to the section of this catalog for the EED Teacher Certification Concentration. Please contact Academic Advising for assistance in planning your degree semesters and goals.
- 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 with Science of Teaching Reading. 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). Please contact Academic Advising for assistance in planning your degree semesters and goals.
- 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 4–8 Core Subjects with Science of Teaching Reading. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (Grades 4–8 ESL Core Subjects concentration). Please contact Academic Advising for assistance in planning your degree semesters and goals.
- 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). Please contact Academic Advising for assistance in planning your degree semesters and goals.
- 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 a Certification Specialist in the Academic Advising Center. Students can also add ESL or Bilingual Supplemental to their base certification. Please consult with the Certification Specialist in the Academic Advising Center to learn more about supplemental certifications.

- 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. Please contact Academic Advising for assistance in planning your degree semesters and goals.
- 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. Students seeking Music certification are advised to stay in close contact with a Certification Specialist in the Academic Advising Center.
- 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. Students seeking Art certification are advised to stay in close contact with a Certification Specialist in the Academic Advising Center.
- Students interested in teaching **Spanish in pre-kindergarten through twelfth grades** will declare a major in Spanish. These students will refer to the “Bachelor of Arts Degree in Spanish” section of this catalog for information about degree and certification requirements. Students seeking Spanish certification are advised to stay in close contact with a Certification Specialist in the Academic Advising Center.

## 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/>) (see

Professional Preparation and Certification (<https://education.utsa.edu/programs/professional-preparation/>). 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 clinical teaching (or an approved substitution for clinical 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 2.75 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 Assistant Director of Teacher Education/Educator Certification Officer 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 (<https://education.utsa.edu/images/Fitness-to-Teach-PolicyJuly2020.pdf>). 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 only their degree upon completion of their respective program.

## 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, hospitals, 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 (<https://statutes.capitol.texas.gov/Docs/OC/htm/OC.53.htm>).

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/](http://education.utsa.edu/certification_program/)

[http://education.utsa.edu/certification\\_program/](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.nasdtc.net](http://www.nasdtc.net) (<http://www.nasdtc.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 Academic 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 be admitted to the teacher certification program and meet the required prerequisites for 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 Academic Advising 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 Academic Advising 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 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 2.75 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 Supplemental Certification in English as a Second Language or Bilingual 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 Professional Clinical Experiences.

NOTE: At present, we offer the Traditional Clinical Teaching semester, Yearlong Clinical Teaching, and Residency Clinical Teaching.

The **Traditional Clinical Teaching** semester is a full-time commitment. The traditional 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; check with financial aid for possible funding.

**Yearlong Clinical Teaching and Residency Clinical Teaching** are clinically-rich experiences in which clinical teachers complete methods courses along with clinical teaching over two semesters. These are intensive clinically-embedded experiences and we strongly recommend that clinical teachers be prepared to fully immerse themselves into the school environment. They are also expected to follow the school district's academic calendar as the clinical teachers' performance is a key component in evaluating future potential as a teacher. Both of

these experiences allow for financial support; check with financial aid for possible funding.

## 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 these exams 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 Academic Advising Center, the Office of Professional Preparation and Partnerships, Director for Assessment and Program Accountability or from the UTSA COEHD website (<http://education.utsa.edu/>) (see TExES (<https://education.utsa.edu/programs/professional-preparation/texes.html>))

## 6. KLESSE COLLEGE OF ENGINEERING AND INTEGRATED DESIGN

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The Klesse College of Engineering and Integrated Design (KCEID) houses the Department of Biomedical Engineering and Chemical Engineering, the Department of Electrical and Computer Engineering, the Department of Mechanical Engineering, the School of Architecture and Planning, and the School of Civil & Environmental Engineering, and Construction Management.

KCEID programs and experiences prepare students for the modern workforce by training them to take a holistic view to design. KCEID faculty are a 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. KCEID has excellent laboratory facilities where students receive hands-on instruction from faculty. Computer-aided design (CAD) facilities, including state-of-the-art workstations, are routinely used in all programs.

The Department of Biomedical Engineering and Chemical Engineering offers a Bachelor of Science degree in Biomedical Engineering (BME) and a Bachelor of Science degree in Chemical Engineering (CME).

The Department of Electrical and Computer Engineering (ECE) offers a Bachelor of Science degree in Computer Engineering (CPE) and a Bachelor of Science degree in Electrical Engineering (EE). The department also houses the certificate programs in Artificial Intelligence and Computer Programming for Engineers.

The Department of Mechanical Engineering (ME) offers a Bachelor of Science degree in Mechanical Engineering and four certificate programs in: (1) Aerospace Engineering, (2) Heating, Ventilation, and Air-Conditioning, (3) Industrial and Manufacturing Engineering, and (4) Oil/Gas.

The School of Architecture and Planning (SAP) offers a Bachelor of Science degree in Architecture and a Bachelor of Science degree in Interior Design. SAP offerings also include undergraduate courses in Urban and Regional Planning and a certificate program in Design Communication and Fabrication.

The School of Civil & Environmental Engineering, and Construction Management offers a Bachelor of Science degree in Civil Engineering and a Bachelor of Science degree in Construction Science and Management.

In addition, KCEID offers certificates in Engineering Projects in Community Service (EPICS) and Data Center Design.

KCEID programs in Biomedical Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, and Mechanical Engineering are accredited by the Engineering Accreditation Commission of ABET (<http://www.abet.org>). The Construction Science and Management degree is accredited by the American Council for Construction Education (ACCE (<https://www.acce-hq.org/>)).

### Signature Experience Requirement

All undergraduate students in KCEID are required to participate in an approved signature experience opportunity as a condition of graduation.

The signature experience requirement will engage students in educational opportunities that allow them to gain real-world experience in their field of study. Students must complete one experience in one of the following four experiential learning categories: **internship**, **research**, **study abroad** programs, and **service-learning (INTERESTS)**. A description of each category is provided below.

**Internship:** A short-term, supervised period of activities carried out in an organization closely related to a student's field of study. Internships provide students the opportunity to put their skills into practice and explore career interests. Internships are full-time or part-time, credit or non-credit, and occur during the fall, spring, or summer semesters. Students may conduct internships in the private, public, and non-profit sectors. To earn academic credit for an internship, students must identify an opportunity that meets the conditions set by each Department/School and obtain approval. Co-op approval forms are available at KCEID's website (<https://ceid.utsa.edu/future-undergraduate/#forms>). The Student Success Center (SSC) serves as the central point of contact for industry professionals to connect with students regarding internship opportunities. Students can visit the SSC website (<https://ceid.utsa.edu/ssc/>) to identify available internship opportunities.

**Research:** Participation in activities that promote academic inquiry and scientific discovery in a field closely related to a student's major of study. Examples of research activities include laboratory work, design research, literature review, data collection, data analysis, field assessment, code development, among others. Research studies can be conducted in the student's home department or school, UTSA laboratories and studios, national laboratories, academic institutions, non-profit, applied research and development organizations, and research centers. Students must conduct research under the direction of a qualified supervisor and complete all appropriate training before engaging in research. Several KCEID programs offer research courses that satisfy technical elective requirements. The Office of Undergraduate Research (O.U.R) supports undergraduate students' participation in research activities by identifying opportunities. Students can visit the OUR website (<https://provost.utsa.edu/undergraduate-research/>) to search for research opportunities throughout the nation. In addition, research-track professors, schools, departments, KCEID Institutes and Centers, and the SSC offer students several research opportunities. Students and supervisors are encouraged to present their research findings in professional meetings and scientific publications.

**Study Abroad Programs:** International experiences expand students' worldview and provide them access to peculiar sites to obtain valuable knowledge relevant to their major. Architecture and Interior Design students have an international studies requirement in their respective curricula that is fulfilled via programming in Urbino, Italy. In addition, Architecture, Civil Engineering, Construction Science and Management, and Interior Design students can participate in a semester program in Urbino, Italy, that allows them to fulfill curriculum requirements while abroad. Students must consult their academic advisors to prepare a plan to complete prerequisite requirements for Urbino course offerings. Students must also be advised as to options by major as there may specific requirements/constraints thereto. KCEID also offers faculty-led summer programs that permit students to earn UTSA course credits in international settings. KCEID study abroad opportunities are advertised by organizing departments or schools and the SSC. UTSA Study Abroad (<https://global.utsa.edu/education-abroad/>) provides students several international opportunities, including exchange programs and programs through affiliated institutions. Students must consult their plans with

their Academic Advisors and determine how credits completed abroad may apply to their UTSA degree.

**Service Learning:** An experiential learning opportunity that allows students to offer solutions to problems and issues of public concern by applying the knowledge gained in the classroom. KCEID offers service-learning design and design-build programs in which students partner with local and global community organizations to address human, community, and environmental needs. KCEID's Engineering Projects in Community Service (EPICS) offers students the opportunity to work in multidisciplinary teams on long-term engineering-based design projects. EPICS courses are open to students from all disciplines; each student contributes expertise in his/her academic field. Each team consists of a mix of first-year, sophomores, juniors, and seniors. Students should consult their Academic Advisors on how to fulfill program requirements while enrolling in service-learning courses. Students can also participate in service-learning experiences through service-oriented organizations, such as Engineering without Borders, which assist less fortunate communities throughout the world. To satisfy the signature experience requirement, students must complete a community project and not simply enroll in an organization. Students can access the SSC website to identify the list of student organizations that have been granted a service-oriented designation. The Center of Architectural Engagement and Center for Civic Engagement website (<https://cce.utsa.edu/>) hosts several service-learning initiatives that can be used to fulfill the Signature Experience requirement.

Students may choose to meet their signature experience requirement in one of two ways which are further described below:

- A. completing a KCEID course associated with an INTERESTS category with a grade of C- or better, or
- B. successfully participating in an approved co-curricular experience.

Students must review their program of study requirements as some programs within KCEID have experiences embedded in their curriculum that can be applied to satisfy the College signature experience requirement. Students enrolled in Architecture and Interior Design programs must participate in an international signature experience. Students in the Construction Science and Management program must complete a required internship before graduation.

## A. Signature Experience Courses

Students who opt to satisfy the experience requirement through a designated INTERESTS course are highly encouraged to choose a course that allows them to simultaneously fulfill the signature experience requirement and a core-curriculum requirement, a technical elective requirement within their program of study, or a certificate program requirement. The following courses have been approved to satisfy the College Experience Requirement.

### 1. Internship

- ARC 4333 Practicum/Internship
- BME 3033 Biomedical Engineering Internship
- CME 4803 Chemical Engineering Internship
- CSM 4933 Summer Internship
- EGR 3303 Engineering Co-op
- EGR 3353 EPICS Engineering Co-op
- IDE 4333 Practicum/Internship

### 2. Research

- ARC 4913 Independent Study<sup>1</sup>
- IDE 4913 Independent Study<sup>1</sup>
- BME 3043 Biomedical Engineering Research
- CME 4913 Independent Study<sup>1</sup>
- CME 4703 Chemical Engineering Research
- CE 4913 Independent Study<sup>1</sup>
- CSM 4913 Independent Study<sup>1</sup>
- CPE 4913 Independent Study<sup>1</sup>
- EE 4913 Independent Study<sup>1</sup>
- ME 4913 Independent Study<sup>1</sup>
- EGR 4993 Honors Research

<sup>1</sup> To satisfy the signature experience requirement, instructors must indicate that independent studies are research-oriented.

### 3. Study Abroad Programs

- Urbino program courses in Architecture: ARC 4816 International Studies Studio, ARC 4833 International Studies Drawing Seminar, and ARC 4843 International Studies History Seminar
- Urbino program courses in Interior Design: IDE 4816 International Studies Studio, IDE 4833 International Studies Drawing Seminar, and IDE 4843 International Studies History Seminar
- The study abroad/ Urbino program section of CE 4813 Civil Engineering Design
- The study abroad/ Urbino program section of CSM 4713 Construction Capstone

### 4. Service Learning

Students should complete one of the following EPICS course sequence:

- EGR 1351 First Year Participation in Engineering Projects in Community Service (EPICS) + EGR 1352 First Year Participation in Engineering Projects in Community Service (EPICS)
- EGR 2351 Sophomore Participation in Engineering Projects in Community Service (EPICS)+ EGR 2352 Sophomore Participation in Engineering Projects in Community Service (EPICS)
- EGR 3351 Junior Participation in Engineering Projects in Community Service (EPICS) + EGR 3352 Junior Participation in Engineering Projects in Community Service (EPICS)
- EGR 4351 Senior Participation in Engineering Projects in Community Service (EPICS) + EGR 4352 Senior Participation in Engineering Projects in Community Service (EPICS)

Students enrolled in these courses must also enroll in the corresponding EID zero-credit hour course from the options listed below. These courses are graded on a pass/fail basis. Passing is contingent upon uploading documentation relevant to the experience at a specified link and completing surveys throughout the semester to report activities conducted during the experience.

#### EID 3100. Signature Experience Internship. (0-0) 0 Credit Hours.

Prerequisite: Co-enrollment in a linked course or consent of department chair. An experiential learning internship opportunity in which students conduct supervised professional activities in an organization closely related to their field of study. May be repeated when topics vary.

**EID 3200. Signature Experience Research. (0-0) 0 Credit Hours.**

Prerequisite: Co-enrollment in a linked course or consent of department chair. An experiential learning research opportunity in the student's field of study. Students must conduct research under the direction of a qualified supervisor and complete all appropriate training before engaging in research activities. May be repeated when topics vary.

**EID 3300. Signature Experience Study Abroad. (0-0) 0 Credit Hours.**

Prerequisite: Co-enrollment in a linked course or consent of department chair. An international experiential opportunity that allows students to obtain valuable knowledge relevant to their field of study by providing them access to peculiar sites. May be repeated when topics vary.

**EID 3400. Signature Experience Service Learning. (0-0) 0 Credit Hours.**

Prerequisite: Co-enrollment in a linked course or consent of department chair. An experiential service-learning opportunity in which students offer solutions to problems and issues of public concern by applying the knowledge gained in the classroom. May be repeated when topics vary.

**B. Signature Experience Co-Curricular Activities**

A list of pre-approved experiences will be updated each semester at the college website before each registration period. Students interested in fulfilling the signature experience requirement through an alternative experience must obtain approval from the School Director or Department Chair of their program of study and the Associate Dean of Undergraduate Programs before committing to the experience. The experience approval application form is available on the KCEID website (<https://ceid.utsa.edu/future-undergraduate/#forms>). The petitioners must provide supplementary documentation demonstrating that the experience meets one of the INTERESTS category descriptions and requires a time commitment of at least 100 hours.

All students must complete a Signature Experience Requirement form during the registration period corresponding to the semester in which the experience will be completed. In the form, students must indicate the signature experience in which they would like to participate. Approved students must enroll in the zero credit hour EID course (EID 3100, EID 3200, EID 3300, or EID 3400) associated with the category of the experience. These courses are graded on a pass/fail basis. Passing is contingent upon uploading documentation relevant to the experience at a specified link and completing surveys throughout the semester to report activities conducted during the experience.

Waivers will be granted only under exceptional circumstances and only considered a year before graduation. Students must submit a written request explaining the exceptional circumstances and include supporting documentation. Waivers to departments or school experiences will not exempt students from KCEID's signature experience requirement.

**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 program descriptions). Students may obtain additional information about each program from their academic advisor or a faculty advisor in the appropriate department or school.

Students must satisfy the University's Core Curriculum and ABET accreditation requirements. Recommended degree plans and current ABET requirements may be obtained from the specific engineering

programs. All students admitted to the KCEID 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 a 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 or EGR 1324	Calculus II Calculus II for Engineers	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
<b>Total Credit Hours</b>		<b>22</b>

**Gateway Courses**

Students pursuing an engineering degree must successfully complete Gateway Courses with a grade of "C-" or better in no more than two attempts. If the student does not successfully complete a Gateway Course in two attempts, then the student is required to change their major.

For the purpose of this policy, 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.

**Three-Attempt Limit**

Students pursuing an engineering degree must successfully complete all science, engineering, and math courses for their program with a grade of "C-" or better in no more than three attempts. A student unable to achieve the "C-" Grade Rule within three enrollments (attempts) shall be required to change their major.

For the purpose of this policy, 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.

**Engineering Honors**

The Engineering Honors distinction provides the opportunity for experiential and advanced study under close faculty supervision to those admitted into the Engineering Honors Program (EHP). 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.

## Program Admission

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 from the College Honors Committee. Admission to the Engineering Honors Program is competitive.

### Engineering Honors Program Admission Criteria for Freshman

Applicants entering UTSA from high school may be directly admitted to the Engineering Honors Program if they meet the following requirements:

- meet all UTSA and KCEID admission requirements,
- rank in the top 25 percent of their high school class, and
- earn a score of 1280 or higher on the new SAT or a composite score of 27 or higher on the ACT.

### Engineering Honors Program Admission Criteria for Transfer and Current UTSA Engineering Students

Transfer applicants and applicants who are current UTSA engineering students may be admitted to the Engineering Honors Program if they meet the following requirements:

- have completed 12 UTSA semester credit hours,
- have a cumulative UTSA GPA of 3.5, and
- have credit for at least one Co-Curricular Signature Experience.

Students who are admitted to the Honors College Program have direct admission to the Engineering Honors Program but must complete the Engineering Honors Program acknowledgment form in order to participate in the program. The application forms and deadlines will be available on the KCEID website.

## Program Requirements

The Engineering Honors Program requires its member to meet academic and experiential learning requirements in order to graduate with the Engineering Honors designation. Students must meet a minimum of 9 hours through any combination of:

- Any Engineering Practice in Community Service (EPICS) courses
- Signature Experience designated courses
- EGR 4993 Honors Research for 3 semester credit hours in their last year of study which may be repeated once for credit and may be approved as a technical elective with department agreement.

## Grand Challenge Scholars Program

The Grand Challenge Scholars Program (GCSP) prepares selected degree-seeking students at UTSA with a combined educational and professional development opportunity to meet the most demanding engineering problems as articulated through the National Academy of Engineering (NAE) Grand Challenges. (<http://www.engineeringchallenges.org/challenges.aspx>)

## Program Admission

Students from all disciplines are eligible and encouraged to participate in the program. The application forms and deadlines will be available on the program's website (<https://ceid.utsa.edu/grand-challenges-scholars-program/>). Applicants must prepare a portfolio plan that includes the following:

- A preliminary proposal outlining the specific grand challenge of interest to be addressed.
- Proposed plan of course-based and extracurricular activities linked to five competencies: talent, multidisciplinary, viable business/entrepreneurship, multicultural, and social. Students should access the KCEID website to identify courses and extracurricular activities that can be used to satisfy each of the five competencies.
- A letter of recommendation from a UTSA academic or research professional who agrees to serve as the GCSP mentor.

Upper-division students that have completed elements of the GCSP prior to admission will also have the opportunity to apply them following a portfolio review by the GCSP committee. A GCSP committee will review the applications and notify students of their selection status.

## Program Requirements

To graduate as a GCSP scholar, students must:

- Maintain good academic standing
- Present findings at a research event once per year
- Complete one of the following courses during the first year of admission to the program:
  - EGR 1351 First Year Participation in Engineering Projects in Community Service (EPICS),
  - EGR 2351 Sophomore Participation in Engineering Projects in Community Service (EPICS),
  - EGR 3351 Junior Participation in Engineering Projects in Community Service (EPICS)
  - EGR 4351 Senior Participation in Engineering Projects in Community Service (EPICS)
- Complete one of the following courses during the last year of the program:
  - EGR 4352 Senior Participation in Engineering Projects in Community Service (EPICS),
  - EGR 4362 Senior EPICS Design I,
  - EGR 4363 Senior EPICS Design I,
  - EGR 4373 Senior EPICS Design II
- Satisfy the five competencies through designated courses or extracurricular activities as outlined on the program's website (<https://engineering.utsa.edu/>).



## 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 an engineering major and have a minimum cumulative grade point average of 2.50 and a minimum grade point average of 2.50 in their KCEID 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 Undergraduate Advisor of Record (UGAR).

## Laptop Program

The laptop program requires that students entering KCEID programs have their own laptop (notebook) computers and required software. The computer should be upgradeable in order to be of productive use for the duration of the academic program. The laptop specifications may vary per academic program. For further and specific information concerning laptop requirements for each program, please see the KCEID hardware recommendations website (<https://ceid.utsa.edu/students/computer-requirements/>).

- Certificate in Engineering Projects in Community Service (EPICS) (p. 116)
- Certificate in Data Center Design (p. 116)

## Certificate in Engineering Projects in Community Service (EPICS)

The Certificate in Engineering Projects in Community Service (EPICS) will prepare degree seeking students at UTSA with a national award winning social, civic, entrepreneurship program. In the 15 hour certificate, teams design, build, and maintain systems to solve engineering-based problems for the community, non-profits, schools, and other service organizations. This program certifies to employers that participants aren't waiting to graduate to solve social problems; they have already engaged them while in college. The EPICS program at UTSA will be housed in the Klesse College of Engineering and Integrated Design but EPICS and honors section courses will be open to all undergraduates.

Students will engage in the design process from start to finish with an emphasis on sustainability as they deliver products to clients. EPICS are multi-year, and often decade long ventures, with students encouraged to work on a project for at least one year. The course structure proposed has

a 1 credit hour introduction and a 2 credit continuation each year tied to the service based project and offered at freshman, sophomore, junior and senior levels.

## Certificate Requirements

Students will be required to complete a minimum of 15 semester credit hours for the certificate, credits may be repeated if engaged in different course sections tied to each project. Students may register for either 1 or 2 hours of credit but will be required to take on a higher-level role if registering for 2 hours of credit in a semester. The EPICS program will also encourage the use of a co-op internship at the host partner business if available. The EPICS co-op may be substituted for technical elective credit with permission of the department. Courses must be taken at their level of current status; freshman may take EPICS courses if between 0-29 hours, sophomores at 30-59, juniors at 60-89, and seniors at or above 90 hours. Certificates will be awarded upon completion of the 15 approved hours, and with a GPA of 2.0 or above.

Code	Title	Credit Hours
<b>Freshman Students</b>		
EGR 1351	First Year Participation in Engineering Projects in Community Service (EPICS)	1
EGR 1352	First Year Participation in Engineering Projects in Community Service (EPICS)	2
<b>Sophomore Students</b>		
EGR 2351	Sophomore Participation in Engineering Projects in Community Service (EPICS)	1
EGR 2352	Sophomore Participation in Engineering Projects in Community Service (EPICS)	2
<b>Junior Students</b>		
EGR 3351	Junior Participation in Engineering Projects in Community Service (EPICS)	1
EGR 3352	Junior Participation in Engineering Projects in Community Service (EPICS)	2
EGR 3353	EPICS Engineering Co-op	3
<b>Senior Students</b>		
EGR 4351	Senior Participation in Engineering Projects in Community Service (EPICS)	1
EGR 4352	Senior Participation in Engineering Projects in Community Service (EPICS)	2
Senior engineering students may be allowed to register for interdisciplinary senior design proportional to the hours in their home program of: Biomedical, Chemical, Civil, Computer, Electrical or Mechanical Engineering provided they meet the prerequisites of their respective senior design class, with permission of the department and with prior engagement with EPICS projects. Students enrolled in EPICS senior design will be tasked with a significant leadership role of juniors, sophomores and freshmen.		
EGR 4362	Senior EPICS Design I	2
EGR 4363	Senior EPICS Design I	3
EGR 4373	Senior EPICS Design II	3

## 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:

<b>Code</b>	<b>Title</b>	<b>Credit Hours</b>
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
<b>Total Credit Hours</b>		<b>15</b>

### **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:

<b>Code</b>	<b>Title</b>	<b>Credit Hours</b>
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
<b>Total Credit Hours</b>		<b>21</b>

### **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:

<b>Code</b>	<b>Title</b>	<b>Credit Hours</b>
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
<b>Total Credit Hours</b>		<b>18</b>

# Department of Biomedical Engineering and Chemical Engineering

The Department of Biomedical Engineering and Chemical Engineering offers a Bachelor of Science degree in Biomedical Engineering (BME) and a Bachelor of Science degree in Chemical Engineering (CME). Both the BME and CME degrees are currently accredited by the Accreditation Board for Engineering and Technology (ABET, <http://www.abet.org>).

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. 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 and Chemical 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. 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) degree program provides high-quality education and training in chemical engineering through rigorous coursework and hands on experience in state-of-the-art laboratories. Students are required to take two technical electives from any of the following study areas of Chemical Engineering: 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 control; 3) Bioengineering, the emerging area that biology and chemistry interface with bio-systems and healthcare; and 4) Environmental Engineering, the strategic growth area finding resources and environmental solutions for manufacturers and consumers. Evidence-based curricular pedagogies are utilized in the CME courses to ensure that our students develop critical thinking, problem-solving, teamwork and excellent communication skills.

## Admission to an Engineering Program

### Direct Admission Criteria

Applicants entering UTSA as Freshmen or Freshmen Transfers (fewer than 12 transferable semester credit hours) will be directly admitted

to the Biomedical Engineering (BME) or Chemical Engineering (CME) program if they:

- meet all UTSA undergraduate admission requirements,
- qualify for enrollment in MAT 1214 Calculus I, or a higher level mathematics course, and
- are ranked in the top 10 percent of their high school class (no minimum SAT or ACT scores required), or
- are ranked below the top 10 percent of their high school class and have a minimum 1200 SAT\* or 25 ACT score.

Applicants with SAT scores below 1200 or ACT scores below 25 may undergo admission by committee review.

Transfer requirements for direct admission to the Biomedical Engineering (BME) or Chemical Engineering (CME) program for students who have earned 12 or more transferable semester credit hours:

- meet all UTSA undergraduate transfer admission requirements, and
- have completed MAT 1214 Calculus I and WRC 1013 Freshman Composition I, or the equivalents, with grades of "C-" or better, and
- meet grade point average requirements:
- applicants with a transfer grade point average of 3.00 or higher may be granted direct admission to the College, or
- applicants with a transfer grade point average below 3.00 may be granted admission to the College by committee review. Contact [bme@utsa.edu](mailto:bme@utsa.edu) or [cme@utsa.edu](mailto:cme@utsa.edu) for information regarding the committee review process.

Applicants who do not meet the Biomedical Engineering and Chemical Engineering department admission requirements will be admitted to the Engineering, Math, and Sciences Studies in the University College. Students have three semesters to complete Calculus I with a grade of "C-" or better and meet the BME or CME Transfer 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), 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.

## Good Academic Standing in BME and CME

All students must be in good academic standing in order to remain in the Biomedical Engineering or Chemical Engineering programs. The minimum requirements that a student must satisfy in order to remain in good standing as a Biomedical Engineering or 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 for 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 for 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 issued a warning. Students whose GPA falls below 2.5 will be placed on a programmatic probation the following semester. Students who fail to maintain a good academic standing after a semester of programmatic probation will be deemed to not be in good academic standing as a Biomedical Engineering or Chemical Engineering major and will be removed from the programs.

- B.S. degree in Biomedical Engineering (p. 119)
- B.S. degree in Chemical Engineering (p. 122)

## 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)).

Students 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 and Chemical 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.

### 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 issued a warning at the beginning of the following semester. Students who fail to maintain a cumulative GPA of 2.5 or above will be placed on a programmatic probation at the beginning of the following semester. Students who do not keep a good academic standing after a semester of programmatic probation or who have a cumulative GPA below 2.5 will be deemed to not be in good academic standing as a Biomedical Engineering major and will be removed from the program. These students will have the option to remain in the Klesse College of Engineering and Integrated Design. Students can apply again to be readmitted into the BME program if cumulative UTSA GPA improves above 2.5.

### 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:

1. Become professionals with careers in industry, government, healthcare, and/or pursue advanced graduate or professional degrees.
2. Continue their professional development as required for their career advancement.
3. Contribute to the socio-economic development of Texas, the nation and the world through the professional and ethical practice of engineering.
4. Assume leadership positions in their chosen field.

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 1203, BIO 1201 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
<b>Total Credit Hours</b>	<b>42</b>

### 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:

Code	Title	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
<b>Total Credit Hours</b>		<b>22</b>

### 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.

Code	Title	Credit Hours
EGR 2323	Applied Engineering Analysis I	
MAT 1214	Calculus I	

### Biomedical Engineering Requirements

Code	Title	Credit Hours
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#### A. Core Biomedical Engineering Requirements

All students majoring in Biomedical Engineering are required to complete 39 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 3113	Cellular Biology for Biomedical Engineering	3
BME 3121	Cellular Biology for Biomedical Engineering Laboratory	1
BME 3211	Biomedical Engineering Laboratory I	1
BME 3303	Bioinstrumentation	3
BME 3311	Biomedical Engineering Laboratory II	1
BME 3373	Modeling and Simulation Using MATLAB	3
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 12 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 3041	Biomedical Engineering Research	
BME 3042	Biomedical Engineering Research	
BME 3043	Biomedical Engineering Research	
BME 3203	Biomechanics II: Cardiovascular	
BME 4203	Biomechanics III	
BME 4213	Tissue Mechanics	
BME 4233	Computational Biomechanics	
BME 4293	Topics in Biomechanics	
BME 4803	Biomedical Data Science	

##### Biomaterials, Cellular, and Tissue Engineering Concentration

BME 3033	Biomedical Engineering Internship	
BME 3041	Biomedical Engineering Research	
BME 3042	Biomedical Engineering Research	
BME 3043	Biomedical Engineering Research	
BME 3413	Biocompatibility of Materials: Tissue-Biomaterial Interaction	
BME 3503	Nanomaterials and Nanobiotechnology	
BME 4213	Tissue Mechanics	
BME 4423	Tissue Engineering	
BME 4433	Soft Materials	
BME 4443	Stem Cell Engineering	
BME 4483	Topics in Biomaterials	



BME 4493	Topics in Tissue Engineering
BME 4713	Cellular Engineering
BME 4793	Topics in Cellular Engineering
BME 4803	Biomedical Data Science

**Biomedical Imaging and Nanobiotechnology Concentration**

BME 3033	Biomedical Engineering Internship
BME 3041	Biomedical Engineering Research
BME 3042	Biomedical Engineering Research
BME 3043	Biomedical Engineering Research
BME 3503	Nanomaterials and Nanobiotechnology
BME 4503	Biosensors
BME 4603	Biophotonics
BME 4613	Biomedical Imaging
BME 4623	Biomedical Optics
BME 4803	Biomedical Data Science

**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. 9

**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 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors
BIO 2313	Genetics
BIO 3913	Molecular Biology
CHE 2603	Organic Chemistry I
CHE 2612	Organic Chemistry I Laboratory
CHE 3643	Organic Chemistry II
CHE 3303	Essentials of Biochemistry
CHE 3313	Biochemistry I
MAT 2214	Calculus III

**Total Credit Hours** 66

**B.S. in Biomedical Engineering – Recommended Four-Year Academic Plan****First Year**

		Credit Hours
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors	4
CHE 1103	General Chemistry I	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (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 (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 (core and major)	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 3113	Cellular Biology for Biomedical Engineering	3
BME 3121	Cellular Biology for Biomedical Engineering Laboratory	1
BME 3211	Biomedical Engineering Laboratory I	1
Technical elective		3

**Credit Hours** 14

**Summer**

BME 3013	Clinical Internship in Biomedical Engineering	3
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**Credit Hours** 3

### Third Year

#### Fall

BME 3303	Bioinstrumentation	3
BME 3311	Biomedical Engineering Laboratory II	1
Government-Political Science (core)		3
BME 3373	Modeling and Simulation Using MATLAB	3
Technical elective		3
<b>Credit Hours</b>		<b>13</b>

#### 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
<b>Credit Hours</b>		<b>13</b>

#### Summer

BME 3033	Biomedical Engineering Internship (BME Elective)	3
<b>Credit Hours</b>		<b>3</b>

### 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
<b>Credit Hours</b>		<b>15</b>

#### 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
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>125</b>

## Bachelor of Science Degree in Chemical Engineering

A Bachelor of Science (B.S.) degree in Chemical Engineering (CME) is the newest addition to the Klesse College of Engineering and Integrated Design at The University of Texas at San Antonio. The program began welcoming incoming freshman students in the fall of 2017, and provides 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 provides high-quality education and training in chemical engineering through structured coursework and hands-on experience in state-of-the-art laboratory facilities. Students are also required to take two technical electives from any of the four following study areas of Chemical Engineering: 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 control; 3) Bioengineering, the emerging area where biology and chemistry interface with bio-systems and healthcare; and 4) Environmental Engineering, the strategic growth area finding resources and environmental solutions for manufacturers and consumers.

The chemical engineering program prepares graduates with the knowledge and skill sets to capture career opportunities – together, our goal is to make the industry more efficient and our world cleaner and healthier.

### Study Areas

- Petroleum/Energy Engineering
- Materials Engineering
- Bioengineering
- Environmental Engineering

The regulations for this degree comply with the general regulations of the University (refer to Bachelor's Degree Regulations (p. 6)).

### 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 for 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 for 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 issued a warning at the beginning of the following semester. Students who fail to maintain a cumulative GPA of 2.5 or above will be placed on a programmatic probation at the beginning of the following semester. Students who do not keep a good academic standing after a semester of programmatic probation or who have a cumulative GPA below 2.5 will be deemed to not be in good academic standing as a chemical engineering major and will be removed from the program. These students will have the option to remain in the Klesse College of Engineering and Integrated Design. Students can apply again to be readmitted into CME if cumulative UTSA GPA was improved to above 2.5.

### Education Objectives

The Chemical Engineering program is preparing graduates to achieve the following Educational Objectives:

1. Succeed in the practice of chemical engineering through chosen careers in industry, government, or in advanced graduate and/or professional studies.
2. Demonstrate leadership in their chosen field.

- Contribute to the socio-economic development of Texas, the nation and the world through the ethical practice of engineering.
- Embrace life-long learning for professional development and career advancement.

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
<b>Total Credit Hours</b>	<b>42</b>

### 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:

Code	Title	Credit Hours
CHE 1103	General Chemistry I	3
EGR 2323	Applied Engineering Analysis I	3
MAT 1214	Calculus I	4
MAT 1224 or EGR 1324	Calculus II Calculus II for Engineers	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
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**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 per course. 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.

Code	Title	Credit Hours
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:

Code	Title	Credit Hours
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#### A. Required Chemical Engineering courses (45 semester credit hours)

CME 1202	Introduction to Chemical Engineering	2
CME 2103	Chemical Process Principles	3
CME 2303	Transport Phenomena I	3
CME 2403	Introduction to Programming for Engineers	3
CME 2503	Thermodynamics I	3
CME 3003	Introduction to Materials Science and Engineering	3
CME 3123	Computational Methods in Chemical Engineering	3
CME 3203	Thermodynamics II	3
CME 3302	Chemical Process Safety and Risk Management	2
CME 3403	Separation Processes	3
CME 3503	Kinetics and Reactor Design	3
CME 3601	Chemical Engineering Laboratory I	1
CME 3703	Transport Phenomena II	3
CME 4103	Process Dynamics and Control	3
CME 4163	Chemical Engineering Design Fundamentals	3
CME 4201	Chemical Engineering Laboratory II	1
CME 4263	Plant Design	3

#### B. Other required courses (25 semester credit hours)

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

EGR 3323	Applied Engineering Analysis II	3
CHE 3643	Organic Chemistry II	3
EGR 3713	Engineering Economic Analysis	3
STA 2303	Applied Probability and Statistics for Engineers	3

**C. Prescribed electives (6 semester credit hours)**

A minimum of 6 semester credit hours must be selected from any of the following areas of study (based on availability): 6

**Bioengineering**

CME 2113	Physiology for Chemical Engineering	
CME 2803	Biomechanics I	
BIO 3513	Biochemistry	
CME 3113	Cellular Biology for Chemical Engineering	
CME 3413	Biocompatibility of Materials: Tissue-Biomaterial Interaction	
CME 3803	Biomechanics II	
CME 3903	Bioinstrumentation	
CME 4513	Selected Topics in Bioengineering	

**Environmental Engineering**

CE 2633	Environmental Engineering	
CHE 3464	Descriptive Inorganic Chemistry	
CME 4543	Selected Topics in Environmental Engineering	
CE 4603	Water Resources Engineering	
CE 4633	Water and Wastewater Treatment	
ES 6103	Environmental Assessment (with approval)	

**Materials Engineering**

CME 2803	Biomechanics I	
EE 2423	Network Theory	
EGR 2103	Statics	
PHY 2103	Modern Physics	
CME 3433	Crystal Chemistry of Structure and Properties	
CME 3903	Bioinstrumentation	
EE 3213	Electromagnetic Engineering	
EE 3323	Electronic Devices	
or PHY 3313	Materials Physics	
ME 3243	Materials Engineering	
ME 3813	Mechanics of Solids	
CME 4533	Selected Topics in Materials Science and Engineering	
EE 4323	Dielectric and Optoelectronic Engineering Laboratory	
EE 4523	Introduction to Nanoelectronics	

**Petroleum/Energy Engineering**

EGR 2213	Statics and Dynamics	
PHY 2103	Modern Physics	
CME 4423	Rheology	
CME 4433	Process Optimization	
CME 4523	Selected Topics in Petroleum/Energy Engineering	

**Common Electives**

No more than 3 semester credit hours of Independent Study, Research, or Internship courses may count towards electives.

CME 4701	Chemical Engineering Research	
CME 4702	Chemical Engineering Research	
CME 4703	Chemical Engineering Research	
CME 4803	Chemical Engineering Internship	
CME 4911	Independent Study	
CME 4912	Independent Study	
CME 4913	Independent Study	

**Total Credit Hours** 76

**B.S. in Chemical Engineering – Recommended Four-Year Academic Plan**
**First Year**

Fall		Credit Hours
AIS 1243	AIS: Engineering, Mathematics, and Sciences (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 (core)	3
<b>Credit Hours</b>		<b>17</b>

**Spring**

CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory	1
CME 1202	Introduction to Chemical Engineering	2
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 (core)	3
<b>Credit Hours</b>		<b>17</b>

**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
<b>Credit Hours</b>		<b>15</b>

**Spring**

CHE 3643	Organic Chemistry II	3
EGR 3323	Applied Engineering Analysis II	3
STA 2303	Applied Probability and Statistics for Engineers	3
CME 2303	Transport Phenomena I	3
CME 2403	Introduction to Programming for Engineers	3

CME 2503	Thermodynamics I	3
<b>Credit Hours</b>		<b>18</b>
<b>Third Year</b>		
<b>Fall</b>		
Creative Arts (core)		3
CME 3003	Introduction to Materials Science and Engineering	3
CME 3123	Computational Methods in Chemical Engineering	3
CME 3203	Thermodynamics II	3
CME 3703	Transport Phenomena II	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
CME 3403	Separation Processes	3
CME 3503	Kinetics and Reactor Design	3
CME 3601	Chemical Engineering Laboratory I	1
American History (core)		3
ECO 2023	Introductory Microeconomics	3
CME 3302	Chemical Process Safety and Risk Management	2
<b>Credit Hours</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Fall</b>		
CME 4103	Process Dynamics and Control	3
CME 4163	Chemical Engineering Design Fundamentals	3
CME 4201	Chemical Engineering Laboratory II	1
Elective I		3
American History (core)		3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>16</b>
<b>Spring</b>		
CME 4263	Plant Design	3
EGR 3713	Engineering Economic Analysis	3
Elective II		3
Government-Political Science (core)		3
Language, Philosophy and Culture (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>128</b>

## 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 (EE) and a Bachelor of Science degree in Computer Engineering (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.

### Direct Admission Criteria

Applicants entering UTSA as Freshmen or Freshmen Transfers (fewer than 12 transferable semester credit hours) will be directly admitted to the CPE or EE, program if they:

- meet all UTSA undergraduate admission requirements,
- qualify for enrollment in MAT 1214 Calculus I, or a higher level mathematics course, and
- are ranked in the top 10 percent of their high school class (no minimum SAT or ACT scores required), or
- are ranked below the top 10 percent of their high school class and have a minimum 1200 SAT\* or 25 ACT score.

Applicants with SAT scores below 1200 or ACT scores below 25 may undergo admission by committee review.

Transfer requirements for direct admission to the CPE or EE program for students who have earned 12 or more transferable semester credit hours:

- meet all UTSA undergraduate transfer admission requirements, and
- have completed MAT 1214 Calculus I and WRC 1013 Freshman Composition I, or the equivalents, with grades of "C-" or better, and
- meet grade point average requirements:

1. applicants with a transfer grade point average of 3.00 or higher may be granted direct admission to the major, or
2. applicants with a transfer grade point average below 3.00 may be granted admission to the College by committee review.

Applicants who do not meet CPE and EE admission requirements will be admitted to the Engineering, Math, and Sciences Studies in the University College. Students have three semesters to complete Calculus I with a grade of "C-" or better and meet the major Transfer 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 CPE, (EE) 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.



## 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 B.S. 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, in which 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. 127)
- B.S. degree in Computer Engineering (p. 129)
- Integrated B.S./M.S. Program (p. 131)

## 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 currently accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> (<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
<b>Total Credit Hours</b>	<b>42</b>

### 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:

Code	Title	Credit Hours
CHE 1103	General Chemistry I	3
EGR 2323	Applied Engineering Analysis I	3
MAT 1214	Calculus I	4
MAT 1224 or EGR 1324	Calculus II Calculus II for Engineers	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
<b>Total Credit Hours</b>		<b>22</b>

### 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.

Code	Title	Credit Hours
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:

Code	Title	Credit Hours
<b>A. Required Courses</b>		
1. Electrical Engineering courses		
EE 1322	Introduction to Electrical and Computer Engineering	2
EE 2423	Network Theory	3
EE 2511	Digital Circuit 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>B. Electrical engineering elective courses</b>		
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.		15
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 Nanoelectronics	
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	
<b>Total Credit Hours</b>		<b>71</b>

## B.S. in Electrical Engineering – Recommended Four-Year Academic Plan

First Year		Credit Hours
<b>Fall</b>		
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 (core)	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
EE 2511	Digital Circuit 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 (core)	3
CPE 2073	Introduction to Computer Programming for Engineers	3

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**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

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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 3323	Electronic Devices	3
EE 4313	Electronic Circuits II	3
Mathematics and Science Supporting Course		3
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
POL 1013	Introduction to American Politics (core)	3

**Credit Hours** **15**

**Fourth Year****Fall**

EE 4113	Electrical and Computer Engineering Laboratory II	3
EE 4812	Electrical Engineering Design I	2
EE Technical elective		3
EE Technical elective		3
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

**Credit Hours** **17**

**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 currently accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> (<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
<b>Total Credit Hours</b>	<b>42</b>

### 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:

Code	Title	Credit Hours
CHE 1103	General Chemistry I	3
EGR 2323	Applied Engineering Analysis I	3
MAT 1214	Calculus I	4
MAT 1224 or EGR 1324	Calculus II Calculus II for Engineers	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
<b>Total Credit Hours</b>		<b>22</b>

### 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.

Code	Title	Credit Hours
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:

Code	Title	Credit Hours
<b>A. Required courses</b>		
1. Electrical and Computer engineering courses:		
EE 1322	Introduction to Electrical and Computer Engineering	2
EE 2423	Network Theory	3
EE 2511	Digital Circuit 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>B. Computer engineering electives</b>		
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 (core)	3
<b>Credit Hours</b>		<b>15</b>
Spring		
EE 2511	Digital Circuit 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 (core)	3
CPE 2073 or CS 2073	Introduction to Computer Programming for Engineers or Computer Programming with Engineering Applications	3
<b>Credit Hours</b>		<b>18</b>
<b>Second Year</b>		
<b>Fall</b>		
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
<b>Credit Hours</b>		<b>16</b>
<b>Spring</b>		
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
<b>Credit Hours</b>		<b>15</b>
<b>Third Year</b>		
<b>Fall</b>		
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
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
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
<b>Credit Hours</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Fall</b>		
CPE 4812	Computer Engineering Design I	2
EE 4113	Electrical and Computer Engineering Laboratory II	3

POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Technical elective		3
Technical elective		3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>17</b>
<b>Spring</b>		
CPE 4813	Computer Engineering Design II	3
ECO 2023	Introductory Microeconomics (core)	3
Technical elective		3
Technical elective		3
Component Area Option (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>126</b>

## 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 semester credit hours of coursework.

The B.S./M.S. program applicants must have a minimum of 3.3 for both cumulative and major grade point averages. 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

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 120 undergraduate credit hours and 6 graduate credit hours to replace two of the five undergraduate technical elective courses toward the B.S. degree. Undergraduate students wishing to voluntarily withdraw from the Integrated B.S./M.S. program, must use a combination of five undergraduate technical electives and graduate organized 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 120 undergraduate credit hours and 6 credit hours of graduate organized

courses. The 6 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 two graduate courses, 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.

- Certificate in Artificial Intelligence (p. 132)
- Certificate in Computer Programming for Engineers (p. 132)

### Certificate in Artificial Intelligence

Non-UTSA students who want to pursue the certificate in Artificial Intelligence (AI) but do not wish to also be admitted into the regular Electrical and Computer Engineering programs must apply via the University's special undergraduate admission process.

Code	Title	Credit Hours
A. Required course:		
EE 3533	Probability and Stochastic Processes	3
B. Electives. Four courses (12 semester credit hours) selected from the following list. Graduate courses in Artificial Intelligence may be approved as electives for the certificate.		
EE 3223	C++ and Data Structures (Only one of these courses can be counted towards the certificate)	12
or EE 3233	Systems Programming for Engineers	
EE 4463	Introduction to Machine Learning	
EE 4723	Intelligent Robotics	
EE 4733	Intelligent Control	
EE 4953	Special Studies in Electrical and Computer Engineering (Internet of Things (IOT))	
EE 4953	Special Studies in Electrical and Computer Engineering (Robotics)	
EE 4953	Special Studies in Electrical and Computer Engineering (Cyber-Security)	
<b>Total Credit Hours</b>		<b>15</b>

### Certificate in Computer Programming for Engineers

The undergraduate certificate program in Computer Programming for Engineers is designed so that students or professionals in electrical and computer engineering or related fields can take a focused set of courses pertinent to the broad field of computer programming. This certificate was developed in collaboration with the Department of Computer Science.

### Eligibility and Admission Procedures

Current undergraduate electrical and computer engineering UTSA students are eligible for admission to the certificate program. Non-UTSA students who do not wish to also be admitted into the regular electrical and computer engineering programs must apply via the University's special undergraduate admission process. This is the recommended option for practicing engineers who already possess a Bachelor of Science in electrical or computer engineering or related field.

The 15-semester-credit-hour program consists of two 3-credit-hour required courses and three 3-credit-hour electives.

#### A. Required courses:

CPE 2073	Introduction to Computer Programming for Engineers	3
or CS 2073	Computer Programming with Engineering Applications	
or CS 1714	Computer Programming II	
EE 3223	C++ and Data Structures	3
or CS 2124	Data Structures	

#### B. Electives. Three courses (9 semester credit hours) selected from the following list:

CS 3433	Computer and Information Security
CS 3443	Application Programming
CS 4643	Mobile and Wireless Network and Technologies
CS 4833	Embedded Systems
CS 4853	Advanced Systems Programming
CS 4863	Distributed Computing and Systems
EE 3233	Systems Programming for Engineers
or CS 3424	Systems Programming
EE 4463	Introduction to Machine Learning
or CS 4253	Machine Learning
EE 4723	Intelligent Robotics
EE 4733	Intelligent Control
EE 4953	Special Studies in Electrical and Computer Engineering (Approved Topics: Engineering Programming, Intro to Computer and Network Security, Internet of Things (IOT), or Robotics)

Other Computer Programming electives must be approved by the committee.

**Total Credit Hours** **15**

## Department of Mechanical Engineering

The Department of Mechanical Engineering offers a Bachelor of Science degree in Mechanical Engineering (ME). The program is currently accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> (<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.

### Direct Admission Criteria

Applicants entering UTSA as Freshmen or Freshmen Transfers (fewer than 12 transferable semester credit hours) will be directly admitted to the ME program if they:

- meet all UTSA undergraduate admission requirements,
- qualify for enrollment in MAT 1214 Calculus I, or a higher level mathematics course, and
- are ranked in the top 10 percent of their high school class (no minimum SAT or ACT scores required), or
- are ranked below the top 10 percent of their high school class and have a minimum 1200 SAT\* or 25 ACT score.

Applicants with SAT scores below 1200 or ACT scores below 25 may undergo admission by committee review.

Transfer requirements for direct admission to the ME program for students who have earned 12 or more transferable semester credit hours:

- meet all UTSA undergraduate transfer admission requirements, and
- have completed MAT 1214 Calculus I and WRC 1013 Freshman Composition I, or the equivalents, with grades of "C-" or better, and
- meet grade point average requirements:
- applicants with a transfer grade point average of 3.00 or higher may be granted direct admission to the major, or
- applicants with a transfer grade point average below 3.00 may be granted admission to the College by committee review.

Applicants who do not meet Mechanical Engineering admission requirements will be admitted to the Engineering, Math, and Sciences Studies in the University College. Students have three semesters to complete Calculus I with a grade of "C-" or better and meet the ME Transfer 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 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.

## 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 a few years 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, critical thinking, creativity, and problem solving skills in professional engineering practice or in non-engineering fields.
3. Continue to advance their knowledge, communication, and leadership skills through graduate education, professional development courses, self-directed study, and/or on-the-job training and experience.
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
<b>Total Credit Hours</b>	<b>42</b>

### General Engineering Requirements

Students seeking the Bachelor of Science degree in Mechanical Engineering must complete the following 22 semester credit hours:

Code	Title	Credit Hours
CHE 1103	General Chemistry I	3
EGR 2323	Applied Engineering Analysis I	3
MAT 1214	Calculus I	4
MAT 1224 or EGR 1324	Calculus II Calculus II for Engineers	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
<b>Total Credit Hours</b>		<b>22</b>

### 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.

Code	Title	Credit Hours
EGR 2103	Statics	
EGR 2323	Applied Engineering Analysis I	
EGR 2513	Dynamics	
MAT 1214	Calculus I	

### 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:

Code	Title	Credit Hours
<b>A. Required foundation and general mechanical engineering courses:</b>		
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	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 partially satisfy the requirements of a certificate in one of the following areas: 1) Aerospace Engineering; 2) Heating, Ventilation and Air Conditioning; 3) Industrial and Manufacturing Engineering; or 4) Oil/Gas. For detailed requirements, see the Certificates section of the Mechanical Engineering program.

**Aerospace**

ME 3323	Mechanical Vibration	
ME 4183	Compressible Flow and Propulsion Systems	
ME 4603	Finite Element Analysis	
ME 4723	Reliability and Quality Control in Engineering Design	
ME 4953	Special Studies in Mechanical Engineering (when topic is Aerodynamics)	
ME 4953	Special Studies in Mechanical Engineering (when topic is Propulsion)	
ME 4953	Special Studies in Mechanical Engineering (when topic is Astrodynamics)	

**Design and Control of Mechanical Systems**

ME 3323	Mechanical Vibration	
ME 3513	Mechanism Design	
ME 4553	Automotive Vehicle Dynamics	
ME 4723	Reliability and Quality Control in Engineering Design	
ME 4773	Robotics	

**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	

**Heating, Ventilation and Air-Conditioning**

EGR 3713	Engineering Economic Analysis	
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 4953	Special Studies in Mechanical Engineering (SS in HVAC Controls)	
ME 4953	Special Studies in Mechanical Engineering (SS in Refrigeration)	
ME 4953	Special Studies in Mechanical Engineering (SS in Indoor Air Quality)	

**Industrial and Manufacturing**

EGR 3713	Engineering Economic Analysis	
ME 3273	Operations Research	
ME 4273	Systems Modeling and Analysis	
ME 4503	Lean Manufacturing and Enterprise Engineering	
ME 4563	Computer Integrated Manufacturing	
ME 4573	Facilities Planning and Design	
ME 4583	Enterprise Process Engineering	
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 <sup>1</sup>	
EGR 4993	Honors Research <sup>1</sup>	
ME 3183	Python: Big Data in Engineering and Environmental Systems	
ME 4173	High Performance Computing	
ME 4913	Independent Study <sup>1</sup>	
ME 4953	Special Studies in Mechanical Engineering <sup>1</sup>	

Graduate Courses in Mechanical Engineering <sup>2</sup>

**C. 3 semester credit hours of approved mathematics or basic science elective courses, selected from the following list:**

BIO 1233	Contemporary Biology I	
BIO 1243	Contemporary Biology II	
BIO 1203	Biosciences I for Science Majors	
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	
<b>Total Credit Hours</b>		<b>73</b>

<sup>1</sup> With prior approval, these courses may be used as a technical elective.

<sup>2</sup> Graduate courses require approval. Forms are available from your academic advisor.

### B.S. in Mechanical Engineering – Recommended Four-Year Academic Plan

#### First Year

		Credit Hours
<b>Fall</b>		
AIS 1243	AIS: Engineering, Mathematics, and Sciences	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 (core)	3
<b>Credit Hours</b>		<b>16</b>

#### 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 (core)	3
American History (core)		3
<b>Credit Hours</b>		<b>17</b>

#### Second Year

		Credit Hours
<b>Fall</b>		
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
<b>Credit Hours</b>		<b>16</b>

#### Spring

EE 2213	Electric Circuits and Electronics	3
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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
<b>Credit Hours</b>		<b>16</b>

#### 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
<b>Credit Hours</b>		<b>18</b>

##### 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	3
ME 4313	Heat Transfer	3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>16</b>

#### Fourth Year

##### Fall

ME 4312	Thermal and Fluids Laboratory	2
ME 4543	Mechatronics	3
ME 4801	Manufacturing Practices Laboratory	1
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
<b>Credit Hours</b>		<b>14</b>

##### 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
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>128</b>

- Certificate in Aerospace Engineering (p. 136)
- Certificate in Heating, Ventilation and Air-Conditioning (p. 137)
- Certificate in Industrial and Manufacturing Engineering (p. 137)
- Certificate in Oil/Gas (p. 138)

## Certificate in Aerospace Engineering

The Certificate in Aerospace Engineering is designed to prepare degree-seeking students or degree holders in mechanical engineering or related fields with the fundamental engineering knowledge necessary for successful careers in the aerospace industry. It certifies to employers

that students awarded the certificate have completed coursework essential to successful in entry-level positions in aerospace.

Eligibility requirements:

- Meet the prerequisite courses for the certificate program (refer to course descriptions in the *UTSA Undergraduate Catalog*)

Students pursuing an Aerospace Engineering certificate must complete 15 semester credit hours as follows:

Code	Title	Credit Hours
A. Required courses:		3
ME 3663	Fluid Mechanics	
B. ME electives. A minimum of three courses (9 semester credit hours) selected from the following list:		9-12
ME 4183	Compressible Flow and Propulsion Systems	
ME 4953	Special Studies in Mechanical Engineering (SS in Aerodynamics)	
ME 4953	Special Studies in Mechanical Engineering (SS in Propulsion)	
ME 4953	Special Studies in Mechanical Engineering (SS in Astrodynamics)	
C. Additional electives. If only three courses are selected from list B, then an additional 3 semester credit hours must be completed from the following list:		0-3
ME 3323	Mechanical Vibration	
ME 4603	Finite Element Analysis	
ME 4723	Reliability and Quality Control in Engineering Design	
<b>Total Credit Hours</b>		<b>15</b>

## Certificate in Heating, Ventilation and Air-Conditioning

The Certificate in Heating, Ventilation and Air-Conditioning (HVAC) is designed to prepare degree-seeking students or degree holders in mechanical engineering or related fields with the fundamental engineering knowledge necessary for successful careers in the design, manufacture, selection, and/or installation of mechanical equipment which controls the built environment. It certifies to employers that students awarded the certificate have completed coursework essential to success in entry-level positions in HVAC related fields.

Eligibility requirements:

- Meet the prerequisite courses for the certificate program (refer to course descriptions in the *UTSA Undergraduate Catalog*)

Students pursuing a HVAC certificate must complete 15 semester credit hours as follows:

Code	Title	Credit Hours
A. Required courses:		3
ME 4313	Heat Transfer	
B. ME electives. A minimum of three courses (9 semester credit hours) selected from the following list:		9-12
ME 4323	Thermal Systems Design	

ME 4343	Heating, Air Conditioning, and Refrigeration Design	
ME 4613	Power Plant System Design	
ME 4953	Special Studies in Mechanical Engineering (SS in HVAC Controls)	
ME 4953	Special Studies in Mechanical Engineering (SS in Refrigeration)	
ME 4953	Special Studies in Mechanical Engineering (SS in Indoor Air Quality)	
C. Additional electives. If only three courses are selected from list B, then an additional 3 semester credit hours must be completed from the following list:		0-3
EGR 3713	Engineering Economic Analysis	
ME 4593	Alternative Energy Sources	
<b>Total Credit Hours</b>		<b>15</b>

## Certificate in Industrial and Manufacturing Engineering

The Certificate in Industrial and Manufacturing Engineering is designed to prepare degree-seeking students or degree holders in mechanical engineering or related fields with the fundamental engineering knowledge necessary for successful careers in the manufacturing industry. It certifies to employers that students awarded the certificate have completed coursework essential to success in entry-level engineering positions in manufacturing.

Eligibility requirements:

- Meet the prerequisite courses for the certificate program (refer to course descriptions in the *UTSA Undergraduate Catalog*)

Students pursuing an Industrial and Manufacturing Engineering certificate must complete 15 semester credit hours as follows:

Code	Title	Credit Hours
A. Required courses:		3
ME 3263	Manufacturing Engineering	
B. ME electives. A minimum of three courses (9 semester credit hours) selected from the following list:		9-12
ME 3273	Operations Research	
ME 4503	Lean Manufacturing and Enterprise Engineering	
ME 4563	Computer Integrated Manufacturing	
ME 4573	Facilities Planning and Design	
ME 4583	Enterprise Process Engineering	
ME 4723	Reliability and Quality Control in Engineering Design	
ME 4953	Special Studies in Mechanical Engineering (SS Advanced Medical Device Design and Commercialization)	
C. Additional electives. If only three courses are selected from list B, then an additional 3 semester credit hours must be completed from the following list:		0-3
EGR 3713	Engineering Economic Analysis	
ME 4273	Systems Modeling and Analysis	

ME 4773	Robotics	
<b>Total Credit Hours</b>		<b>15</b>

## 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:

Code	Title	Credit Hours
A. Required courses:		3
ME 3823	Machine Element Design <sup>1</sup>	
B. ME electives. A minimum of three courses (9 semester credit hours) selected from the following list:		9-12
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	
C. Additional electives. If only three courses are selected from list B, then an additional 3 semester credit hours must be completed from the following list:		0-3
EGR 3713	Engineering Economic Analysis	
ME 4603	Finite Element Analysis	
<b>Total Credit Hours</b>		<b>15</b>

<sup>1</sup> 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 any certificate in the mechanical engineering program, 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 offered by the mechanical engineering program 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 offered by the mechanical engineering program will be required to apply for admission to UTSA as special (non-degree-seeking) students at the undergraduate level, and indicate in the application process their desire to pursue the requirements for specific undergraduate 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.

## School of Architecture and Planning

The School of Architecture and Planning 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 of Architecture / Interior Design Studies majors until the completion of required coursework in Foundation Year, and successful passage through the Foundation Year Gateway. The School of Architecture and Planning 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.

### Foundation Design Studio Courses

The design studio sequence (ARC 1213, ARC 1223, ARC 2156, and ARC 2166) in the first and second years of study are structured as laboratories in order to encourage an engaged and exploratory studio culture. The learning environment of the design studio actively promotes and supports the progressive development of design thinking and making through iterative design practices, discourse, and critical thinking skills. Throughout the sequence, direct engagement with the means, materials, and methods of design serves as a basis for increasingly more abstract and complex design operations. These courses combine graphic, modeling, digital and verbal visualization techniques and skills in 2D and 3D across multiple mediums and scales. The design laboratory studio sequence supports the incremental development of students' creative and critical thinking practices. These practices address design in the various contexts and scales of human experience, encompassing hand and body, building and structure, room and street, as well as city and context.

### Advanced Architectural Design Studio Courses

The advanced studio sequence in the third and fourth years of study (ARC 4156, ARC 4246, and ARC 4816) engages students in the wider and more detailed field of architectural inquiry and the complexity of the design process. The teaching-learning environment of the design studio fosters dialog and discovery through collaboration, individual production, and critical discourse. Design decisions are set within, and influenced by, a larger cultural and natural perspective as well as an evolving architectural discourse or polemic. Design, in this context, brings a diversity of resources, voices, and allied disciplines to the table while addressing the potential and design of human environments. Design projects explore a variety of issues and programs including the differences and tensions between the local and global, the cultural and natural, the urban and exurban, as well as between the technical and philosophical. Throughout the advanced studio sequence, students are progressively challenged to employ creative design thinking, further refining their own design processes and critical inquiries while producing increasingly sophisticated presentations of building design concepts and proposals.

### Advanced Interior Design Studio Courses

The advanced studio sequence in the third and fourth years of study (IDE 3236, IDE 3246, IDE 4266, IDE 4816) engages students in the wider and more detailed field of design inquiry and processes. Built upon

the foundation design laboratories, they form a critical block of the professional program in which they offer an academic preparation for the professional interior designer and advancement of study. The teaching-learning environment of the design studio fosters dialog and discovery through collaboration, individual production, and critical discourse. In this context, the studio brings a diversity of resources, voices, subject matter experts, and professionals across the design spectrum and allied disciplines to the table while addressing the potential and design of human environments. Design projects explore a variety of issues and programs across a range of contexts which engage culture, place, society, and technology. Throughout the advanced studio sequence, students are progressively challenged to apply creative design thinking, further refining their own design processes and critical inquiries while producing increasingly sophisticated presentations of interior design concepts and proposals.

## Admission Policy

### Direct Admission Criteria

Applicants entering UTSA as Freshmen will be directly admitted to the School of Architecture and Planning until April 1st if they:

- meet all UTSA undergraduate admission requirements, and
- are ranked in the top 10 percent of their high school class (no minimum SAT or ACT scores required), or
- are ranked in the top 25 percent of their high school class and have a minimum 1220 SAT\* or 25 ACT score.

Freshmen in good standing at their high school class with a minimum 1170 SAT\* or 24 ACT score may go through a School Comprehensive Review to determine direct admission.

After April 1st, all applicants will go through a School Comprehensive Review.

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

### Admission Criteria for Transfer Students

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

Transfer students with less than 30 transferable semester credit hours must:

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

Transfer students with 30 or more transferable semester credit hours must:

- meet all UTSA undergraduate transfer admission requirements,
- have a minimum transfer 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 (maximum size 8.5 inches by 11 inches) until April 15th 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 School review. Application packages and portfolios should be sent directly to the School of Architecture and Planning. 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 students who do not meet the above requirements but meet UTSA's general admission requirements will be part of "Exploratory Studies" where students will be able to work towards meeting the prerequisites needed to declare Architecture or Interior Design as their major.

Transfer students who do not meet the above requirements, but meet UTSA's general admission requirements will be placed in Multidisciplinary Studies where students will be able to work towards a bachelor's degree.

## Change of Major

Students currently enrolled in UTSA who wish to change majors to one of the two undergraduate academic majors within the School of Architecture and Planning must submit a Change of Major application to the School by April 15th. Transfer application decisions are made at least once per year in June, but the School 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 (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 School review. Portfolios should be sent directly to the School of Architecture and Planning. 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.

## 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 is integrated into required coursework and assignments beginning in the Freshman year 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. For further and specific information concerning laptop requirements, please see <https://ceid.utsa.edu/students/computer-requirements/>.

## Student Work

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

## 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 School 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. A minimum GPA of 2.5 is required from the 16 credit hours of courses listed below. Students not accepted into either of the two majors within the School of Architecture and Planning 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 1	3
ARC 1223	Design 2	3
ARC 1313	Design Visualization 1	3
ARC 1331	Design Visualization 2	1
ARC 1513	Great Buildings and Cities of the World	3
<b>Total Credit Hours</b>		<b>16</b>

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	3
WRC 1023	Freshman Composition II	3
Mathematics Core Course (MAT 1023, MAT 1053 or MAT 1073)		3
Life and Physical Sciences Core Course (ES 2013, GEO 1013 or PHY 1943)		3
<b>Total Credit Hours</b>		<b>15</b>

## International Studies / Signature Experience Requirement

All undergraduate students in the School of Architecture and Planning are required to participate in an approved International Studies / Signature Experience opportunity as a condition of graduation. The 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 signature experience requirement for architecture and interior design students within the School. 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. The School of Architecture and Planning International Studies / Signature Experience Program is presented and discussed at the Sophomore Convocation which is held in the first semester of sophomore year. Program costs, payment schedules and financial aid opportunities are presented.

- B.S. degree in Architecture (p. 141)
- B.S. degree in Interior Design (p. 143)



## 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 School of Architecture and Planning 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, School of Architecture and Planning offers the following NAAB-accredited degree programs:

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

M.Arch. 3 (non-preprofessional degree + up to 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 1023<sup>1</sup>, MAT 1053 or MAT 1073<sup>1</sup> may be used to satisfy the core requirement in Mathematics.

One of the following courses should be used to satisfy the second core requirement in Life and Physical Sciences: GES 2613, GEO 1013<sup>2</sup>, ES 2013 and ES 2023<sup>2</sup>

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.

<sup>1</sup> 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 and MAT 1073 will not count toward the CSM degree.

<sup>2</sup> Students who may anticipate either a dual major with CSM or change of major to the CSM program should note that GEO 1013 and ES 2023 will count towards the CSM 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
<b>Total Credit Hours</b>	<b>42</b>

### 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.

Code	Title	Credit Hours
ARC 1113	Introduction to the Built Environment	3
ARC 1213	Design 1	3
ARC 1223	Design 2	3
ARC 1313	Design Visualization 1	3
ARC 1331	Design Visualization 2	1
ARC 1513	Great Buildings and Cities of the World	3

## Degree Requirements

Code	Title	Credit Hours
<b>A. Foundation Year Program</b>		
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 (core and major)	3
ARC 1213	Design 1	3
ARC 1223	Design 2	3
ARC 1313	Design Visualization 1	3
ARC 1331	Design Visualization 2	1
ARC 1513	Great Buildings and Cities of the World (core and major)	3
<b>B. Architecture Program sequence</b>		
1. 42 semester credit hours of required architectural courses. Must be completed with a grade of "C-" or better in each course:		
ARC 2156	Design 3	6
ARC 2166	Design 4	6
ARC 2133	Principles of Architectural Structures	3
ARC 2233	Principles of Environmental Systems	3
ARC 2413	Global History of Architecture and Urbanism: Prehistory to Medieval	3
ARC 2423	Global History of Architecture and Urbanism: Renaissance to 19th Century	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		
2. 12 semester credit hours of required upper-division design studios. 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:		
ARC 4816	International Studies Studio	6
4. 6 semester credit hours of Systems Studio:		
ARC 4246	Building Systems Studio	6
5. 6 semester credit hours of international studies coursework		
ARC 4833	International Studies Drawing Seminar	6
ARC 4843	International Studies History Seminar	
or ARC 4823	International Studies Theory Seminar	
<b>Total Credit Hours</b>		<b>88</b>

### 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
ARC 1113	Introduction to the Built Environment (core and major)
ARC 1213	Design 1
ARC 1313	Design Visualization 1

WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
ARC 1223	Design 2	3
ARC 1331	Design Visualization 2	1
ARC 1513	Great Buildings and Cities of the World (core and major)	3
WRC 1023	Freshman Composition II (core)	3
Mathematics (core)		3
Life & Physical Sciences (core)		3
GATEWAY TO MAJOR (Requires Application and Acceptance)		
<b>Credit Hours</b>		<b>16</b>
<b>Second Year</b>		
<b>Fall</b>		
ARC 2156	Design 3	6
ARC 2133	Principles of Architectural Structures	3
ARC 2413	Global History of Architecture and Urbanism: Prehistory to Medieval	3
CSM 2113	Construction Materials and Methods	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
ARC 2166	Design 4	6
ARC 2233	Principles of Environmental Systems	3
ARC 2423	Global History of Architecture and Urbanism: Renaissance to 19th Century	3
Social & Behavioral Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Third Year</b>		
<b>Fall</b>		
International Studies Semester (Fall or Spring)		
ARC 4816	International Studies Studio	6
ARC 4833	International Studies Drawing Seminar	3
ARC 4843	International Studies History Seminar	3
or ARC 4823	International Studies Theory Seminar	
<b>Credit Hours</b>		<b>12</b>
<b>Spring</b>		
ARC 3613	History of Modern Architecture	3
ARC 4156	Building Design Studio	6
American History (core)		3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Fall</b>		
ARC 3433	Topics in Architecture and Thought	3
ARC 4156	Building Design Studio	6
ARC 4183	Environmental Systems	3

Government-Political Science (core)	3
Upper-division Elective	3
<b>Credit Hours</b>	<b>18</b>
<b>Spring</b>	
ARC 4246 Building Systems Studio	6
ARC 4283 Architectural Structures	3
American History (core)	3
Life & Physical Sciences (core)	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>121</b>

## 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 catalog.

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 1023<sup>1</sup>, MAT 1043, MAT 1053, or MAT 1073<sup>1</sup> 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, ES 2023<sup>2</sup>, GEO 1013<sup>2</sup> or GES 2613

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.

<sup>1</sup> 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 and MAT 1073 will not count toward the CSM degree.

<sup>2</sup> Students who may anticipate either a dual major with CSM or change of major to the CSM program should note that GEO 1013 and ES 2023 will count towards the CSM 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
<b>Total Credit Hours</b>	<b>42</b>

### 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.

Code	Title	Credit Hours
ARC 1113	Introduction to the Built Environment	3
ARC 1213	Design 1	3
ARC 1313	Design Visualization 1	3
ARC 1223	Design 2	3
ARC 1331	Design Visualization 2	1
ARC 1513	Great Buildings and Cities of the World	3

### Degree Requirements

Code	Title	Credit Hours
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#### 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 1	3
ARC 1223	Design 2	3
ARC 1313	Design Visualization 1	3
ARC 1331	Design Visualization 2	1
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	Design 3	6
ARC 2166	Design 4	6
ARC 2233	Principles of Environmental Systems	3
ARC 2413	Global History of Architecture and Urbanism: Prehistory to Medieval (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
<b>Total Credit Hours</b>		<b>91</b>

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

**First Year**

		Credit Hours
Fall		
Foundation Year (Pre-Interior Design/PRI)		
AIS 1203	Academic Inquiry and Scholarship	3
ARC 1113	Introduction to the Built Environment (core and major)	3
ARC 1213	Design 1	3
ARC 1313	Design Visualization 1	3
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>15</b>

**Spring**

ARC 1223	Design 2	3
ARC 1331	Design Visualization 2	1
ARC 1513	Great Buildings and Cities of the World (core and major)	3
WRC 1023	Freshman Composition II (core)	3
Mathematics (core)		3
Life & Physical Sciences (core)		3
GATEWAY TO MAJOR (Requires Application and Acceptance)		
<b>Credit Hours</b>		<b>16</b>

**Second Year**

Fall		
ARC 2156	Design 3	6
ARC 2233	Principles of Environmental Systems	3
ARC 2413	Global History of Architecture and Urbanism: Prehistory to Medieval (core and major)	3
IDE 2143	Architecture and Interior Assemblies	3
Social & Behavioral Sciences (core)		3
<b>Credit Hours</b>		<b>18</b>

**Spring**

ARC 2166	Design 4	6
IDE 2153	Interior Materials and Assemblies	3

IDE 2263	Color Theory and Behavior	3
IDE 2413	History of Interior Architecture I	3
<b>Credit Hours</b>		<b>15</b>

**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
<b>Credit Hours</b>		<b>18</b>

**Spring**

ARC 4183	Environmental Systems	3
IDE 3246	Interior Design Studio II	6
IDE 4233	Computer Projects in Design	3
American History (core)		3
<b>Credit Hours</b>		<b>15</b>

**Fourth Year**

**Fall**

IDE 4816	International Studies Studio	6
IDE 4823	International Studies Theory Seminar	3
IDE 4833	International Studies Drawing Seminar	3
<b>Credit Hours</b>		<b>12</b>

**Spring**

IDE 4266	Systems Integration Studio	6
IDE 4513	Practice and Ethics	3
Government-Political Science (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

**Total Credit Hours 124**

## Certificate in Design Communication and Fabrication

The means, materials, and methods that are generative of the built environment, are constantly changing due to the integration and evolution of digital technology and the increased use of data collection, automation and AI. Design communication and fabrication methods are increasingly informing the changes within the practice of Architecture and Interior Design. An undergraduate Certificate in Design Communication and Fabrication provides students with a strong theoretical basis that integrates creative problem-solving skills with an understanding of the aesthetic, technological, and behavioral aspects of design.

Eligibility requirements:

- Meet the prerequisite courses for the certificate program (refer to course descriptions in the UTSA Undergraduate Catalog)

Students pursuing the Certificate in Design Communication and Fabrication must complete 15 semester credit hours:

Code	Title	Credit Hours
<b>A. Required courses:</b>		<b>6</b>
ARC 4233 or IDE 4233	Computer Projects in Design	
IDE 2263	Color Theory and Behavior	
<b>B. Electives</b>		<b>9</b>
IDE 4953	Special Studies in Interior Architecture	
ARC 3133	Advanced Digital Visualization	
ARC 4103	Architectural Lighting Design	
ARC 4213	Design and Fabrication Workshop	
ARC 4953	Special Studies in Architecture	
ARC 3433	Topics in Architecture and Thought	
ART 1023	Foundations III	
ART 2223	New Media: Basic	
COM 2733	Introduction to Digital Communication <small>This course is restricted to COM majors; students must obtain UGAR approval before enrolling in this course. Enrollment is also subject to the availability of seats.</small>	
COM 3023	Foundations of Communication <small>This course is restricted to COM majors; students must obtain UGAR approval before enrolling in this course. Enrollment is also subject to the availability of seats.</small>	
COM 3723	Digital Media Production I <small>This course is restricted to COM majors; students must obtain UGAR approval before enrolling in this course. Enrollment is also subject to the availability of seats.</small>	
CS 1063	Introduction to Computer Programming I	
CS 1173	Data Analysis and Visualization	
DS 4003	Introduction to Data Science	
DS 4013	Programming for Data Science	
EGR 1003	Engineering Design and Problem Solving	
EGR 1343	The Impact of Modern Technologies on Society	
<b>Total Credit Hours</b>		<b>15</b>

To earn any certificate in the architecture program, 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.

## School of Civil and Environmental Engineering, and Construction Management

### Description of the Programs

The School of Civil & Environmental Engineering, and Construction Management (CECM) is one of the five schools/departments of the Klesse College of Engineering and Integrated Design (KCEID). It is housed jointly in the Biotechnology Sciences and Engineering Building (BSE), on the main campus, for the Civil and Environmental Engineering program; and on the downtown campus, for the Construction Science and Management program. The school offers two undergraduate degrees, one in Civil Engineering and another in Construction Science and Management. The Bachelor of Science (B.S.) degree in Civil Engineering (CE) was first offered in 1982, and the Bachelor of Science (B.S.) degree in Construction Science and Management (CSM) was first offered in 2008. The Civil Engineering B.S. program is currently accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org/) (<http://www.abet.org/>), and the Construction Science and Management B.S. program is currently accredited by the American Council of Construction Education, [www.acce-hq.org](https://www.acce-hq.org/) (<https://www.acce-hq.org/>).

### Civil Engineering Mission Statement

The faculty of the Civil and Environmental Engineering Division are committed to excellence in teaching, research, and service to the community and the engineering divisions. The Civil and Environmental Engineering program'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 Direct Admission Criteria

Applicants entering UTSA as Freshmen or Freshmen Transfers (fewer than 12 transferable semester credit hours) will be directly admitted to the CE program if they:

- meet all UTSA undergraduate admission requirements,
- qualify for enrollment in MAT 1214 Calculus I, or a higher level mathematics course, and
- are ranked in the top 10 percent of their high school class (no minimum SAT or ACT scores required), *or*
- are ranked below the top 10 percent of their high school class and have a minimum 1200 SAT<sup>1</sup> or 25 ACT score.

Applicants with SAT<sup>1</sup> scores below 1200 or ACT scores below 25 may undergo admission by committee review.

Transfer requirements for direct admission to the CE program for students who have earned 12 or more transferable semester credit hours:

- meet all UTSA undergraduate transfer admission requirements, and
- have completed MAT 1214 Calculus I and WRC 1013 Freshman Composition I, or the equivalents, with grades of "C-" or better, and
- meet grade point average requirements:



1. applicants with a transfer grade point average of 3.00 or higher may be granted direct admission to the major, or
2. applicants with a transfer grade point average below 3.00 may be granted admission to the College by committee review.

Applicants who do not meet Civil Engineering admission requirements will be admitted to the Engineering, Math, and Sciences Studies in the University College. Students have three semesters to complete Calculus I with a grade of "C-" or better and meet the Civil Engineering Transfer 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 CE 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 Courses

Students pursuing a degree in Civil Engineering must successfully complete Gateway Courses with a grade of "C-" or better in no more than two attempts. If the student does not successfully complete a Gateway Course in two attempts, then the student is required to change their major.

For the purpose of this policy, 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.

## Three-Attempt Limit

Students pursuing a Civil Engineering degree must successfully complete all science, engineering, and math courses for their program with a grade of "C-" or better in no more than three attempts. A student unable to achieve the "C-" Grade Rule within three enrollments (attempts) shall be required to change their major.

For the purpose of this policy, 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.

## Construction Science and Management Mission Statement

The mission of the Construction Science and Management (CSM) Division at the University of Texas at San Antonio is to provide quality construction education for the next generation of construction professionals and leaders. The Division has established the following objectives to achieve this mission:

- Provide quality education to meet the current and future needs of the construction industry in the region based on a solid foundation in ethical, managerial, and technical principles.
- Prepare the next generation of construction professionals with an understanding of sustainable and responsible practice.
- Enhance the construction profession through scholarly research and professional development.

## Construction Science and Management Direct Admission Criteria

Available openings within the CSM program are limited and, therefore, entry is competitive. Top-performing students from high school will be admitted directly into the major. Successful applicants entering the University from high school and transfer students that meet the program requirements will be admitted into Academic Studies (XACP) in the University College. Students in Academic Studies will be reviewed before registration each academic semester and students will be accepted to the CSM major based on their grade point average (GPA) and number of available seats.

Applicants entering UTSA as Freshmen will be directly admitted to the CSM major if they:

- meet all UTSA undergraduate admission requirements, and
- are ranked in the top 10 percent of their high school class (no minimum SAT or ACT scores required), *or*
- are ranked in the top 25 percent of their high school class and have a minimum 1170 SAT<sup>1</sup> or 24 ACT score, *or*
- are ranked in the top 50 percent of their high school class and have a minimum 1220 SAT<sup>1</sup> or 25 ACT score.

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

Transfer students with less than 12 transferable semester credit hours will be directly admitted to the CSM major if they:

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

Transfer students with 12 or more transferable semester credit hours will be directly admitted to the CSM major if they:

- meet all UTSA undergraduate transfer admission requirements, and
- have a minimum transfer GPA of 3.1.

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

Current UTSA students interested in CSM are first considered by the Department for Academic 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 the 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 CE and CSM programs. The computer should be upgradeable in order to be of productive use for the duration of the academic program. For further

and specific information concerning laptop requirements for each major, please see <https://ceid.utsa.edu/students/computer-requirements/>.

## Student Work

CE and CSM faculty reserve the right to retain, exhibit, and reproduce work submitted by students. Work submitted for grading is the property of KCEID and remains such until it is returned to the student.

<sup>1</sup> Based on the new SAT score range

- B.S. degree in Civil Engineering (p. 147)
- B.S. degree in Construction Science and Management (p. 150)

## Bachelor of Science Degree in Civil Engineering

The School of Civil & Environmental Engineering, and Construction Management offers an ABET-accredited bachelor's degree in civil engineering that, in terms of graduating class size, ranks in the 80th percentile nation-wide. The School is committed to excellence in teaching, research, and service to the community and the profession. The Civil Engineering program's mission is to provide our students an education that integrates fundamental science and engineering skills with design principles to solve engineering problems. Our program provides 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 Civil and Environmental Engineering Division has established a specific set of program objectives to support the mission and the goals of the School and to meet the requirements of ABET accreditation under the Criteria for Accrediting Engineering Programs. 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.

## Student Outcomes

Graduates of the UTSA Civil Engineering Program will demonstrate the following student outcomes.

- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- 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.
- An ability to communicate effectively with a range of audiences.
- 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.
- 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.
- An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

## 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
<b>Total Credit Hours</b>	<b>42</b>

## General Engineering Requirements

In addition to the Core Curriculum requirements, all degree-seeking Civil Engineering students must complete the following 25 semester credit hours:

Code	Title	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 or EGR 1324	Calculus II Calculus II for Engineers	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
<b>Total Credit Hours</b>		<b>25</b>

## 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.

Code	Title	Credit Hours
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.

Code	Title	Credit Hours
<b>A. Required courses</b>		
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 (School Director approval required).

EGR 3303	Engineering Co-op	
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:

AST 1013	Introduction to Astronomy	3
AST 1033	Exploration of the Solar System	
BIO 1233	Contemporary Biology I	
BIO 1243	Contemporary Biology II	
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors	
BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors	
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
<b>Total Credit Hours</b>	<b>70</b>

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 (core)	3
<b>Credit Hours</b>		<b>17</b>
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 (core)	3
<b>Credit Hours</b>		<b>17</b>

#### 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
<b>Credit Hours</b>		<b>16</b>

##### 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
<b>Credit Hours</b>		<b>18</b>

#### 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
<b>Credit Hours</b>		<b>15</b>

##### 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
<b>Credit Hours</b>		<b>15</b>

#### 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
<b>Credit Hours</b>		<b>15</b>

##### 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
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>128</b>

## Bachelor of Science Degree in Construction Science and Management

The School of Civil and Environmental Engineering, and Construction Management offers an ACCE-accredited bachelor's degree in construction science and management that 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 construction 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
<b>Total Credit Hours</b>	<b>42</b>

### Degree Requirements

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

Code	Title	Credit Hours
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 for Small Business Owners	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:** **6**

CSM 4913	Independent Study	
CSM 4953	Special Studies in Construction Science and Management	
FIN 3013	Principles of Business Finance	
GEO 3343	Introduction to Geospatial Technologies	
IS 1403	Business Information Systems Fluency	
MGT 3003	Business Communication and Professional Development	
MGT 3253	Interpersonal Communication	
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 Intelligence and Analytics	
MS 3403	Logistics Management	
MSC 2012	Leadership and Decision Making	
SPN 2023	Intermediate Spanish II	
<b>Total Credit Hours</b>		<b>78</b>

**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.

*"In order to facilitate required prerequisite completions on schedule throughout the curriculum, students are strongly encouraged to complete CSM 2113, CSM 3123, CSM 4513, and CSM 4533 in their second year."*

**First Year**

		Credit Hours
<b>Fall</b>		
First Semester (Fall or Spring)		
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1043 or MAT 1053	Introduction to Mathematics (core) <sup>1</sup> or Mathematics for Business	3
WRC 1013	Freshman Composition I (core)	3
American History (core)		3
Language, Philosophy and Culture (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
Second Semester (Fall or Spring)		
ES 2023 or GEO 1013	Introduction to Environmental Science II (core) or The Third Planet	3
PHY 1603	Algebra-based Physics I <sup>1</sup>	3
WRC 1023	Freshman Composition II (core)	3
American History (core)		3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>15</b>

**Second Year****Fall**

## Third Semester (Fall or Spring)

CSM 2113	Construction Materials and Methods <sup>2</sup>	3
CSM 3123	Technical Communication <sup>2</sup>	3
COM 2113	Public Speaking	3
GEO 1013 or ES 2023	The Third Planet (core) or Introduction to Environmental Science II	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
<b>Credit Hours</b>		<b>15</b>

**Spring**

## Fourth Semester (Fall or Spring)

CSM 2143	Construction Materials and Testing	3
CSM 4513	Project Management <sup>2</sup>	3
CSM 4533	Building Information Modeling for Construction Management <sup>2</sup>	3
CSM 4623	Construction Safety	3
STA 1053	Basic Statistics	3
<b>Credit Hours</b>		<b>15</b>

**Third Year****Fall**

## Fifth Semester (Fall or Spring)

ACC 2013	Principles of Accounting I	3
CSM 3143	Structures I	3
CSM 4013	Construction Estimating I	3
CSM 4643	Mechanical, Electrical and Plumbing Systems	3
ECO 2003 or ECO 2023	Economic Principles and Issues (core) or Introductory Microeconomics	3
<b>Credit Hours</b>		<b>15</b>

**Spring**

## Sixth Semester (Fall or Spring)

CSM 4023	Construction Estimating II	3
CSM 4143	Structures II	3
CSM 4523	Project Planning and Scheduling	3
CSM 4633	Construction Law	3
FIN 3003	Survey of Finance	3
<b>Credit Hours</b>		<b>15</b>

**Summer**

CSM 4933	Summer Internship	3
<b>Credit Hours</b>		<b>3</b>

**Fourth Year****Fall**

## Seventh Semester (Fall or Spring)

CSM 4613	Sustainable Building Practice	3
GBA 2013	Legal, Social and Ethical Issues in Business	3
POL 1013	Introduction to American Politics (core)	3

CSM 3113	Construction Surveying (may also be taken in the Eighth Semester)	3
Prescribed Elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
Eighth Semester (Fall or Spring)		
BLW 3013	Business Law for Small Business Owners	3
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
<b>Credit Hours</b>		<b>12</b>
<b>Total Credit Hours</b>		<b>120</b>

<sup>1</sup> Students are strongly encouraged to complete MAT 1043 or MAT 1053 and PHY 1603 in their first year.

<sup>2</sup> Students are strongly encouraged to complete CSM 2113 , CSM 3123 , CSM 4513 , and CSM 4533 in their second year.

## 7. COLLEGE FOR HEALTH, COMMUNITY AND POLICY

### Mission Statement

The College for Health, Community and Policy is a new innovative college dedicated to advancing human health. The College will transform the way UTSA prepares students for the modern setting of human health related careers, in which physician scientists, nurses, therapists, technicians, social workers, social service and public service workers, and policymakers work together to deliver comprehensive solutions that advance local Texas communities.

### General Information

The College for Health, Community and Policy offers eight undergraduate degrees, nine minors, and four certificates. The Bachelor of Science degree in Nutrition and Dietetics, the Nutrition for Health Professionals Certificate, and the Community Health Worker certificate are housed under the College for Health, Community and Policy. The Department of Criminology and Criminal Justice offers the Bachelor of Arts degree in Criminology and Criminal Justice and a Minor in Criminology and Criminal Justice. The Department of Kinesiology houses the Bachelor of Science (B.S.) degree in Kinesiology, with concentrations in athletic training, exercise physiology, kinesiology and health science, and physical education, and a certificate in Athletic Coaching. The Department of Psychology offers a Bachelor of Arts degree in Psychology and a Minor in Psychology. The Department of Public Administration offers a Bachelor of Arts degree in Public Administration and Policy, a Minor in Civic Engagement, a Minor in Public Administration and Policy, and a Minor in Nonprofit Management. The Department of Public Health houses the Bachelor of Science degree in Public Health, with concentrations in health services and health promotion, a Minor in Community Health, and a Minor in Wellness. The Department of Sociology and Demography offers a Bachelor of Arts degree in Sociology, a Bachelor of Science degree in Health, Aging and Society, a Minor in Sociology, and a Minor in Health, Aging and Society.

- Bachelor of Science Degree in Nutrition and Dietetics (p. 153)
- Bachelor of Science Degree in Nutrition and Health (p. 156)

### Coordinated Program in Dietetics Bachelor of Science Degree in Nutrition and Dietetics

The Bachelor of Science (B.S.) in Nutrition and Dietetics is part of the Coordinated Program in Dietetics (CPD), which is a three-year integrated degree that includes the Master of Dietetic Studies (MDS) with 1200 hours of supervised practice. The B.S. in Nutrition and Dietetics requires two years of junior and senior level coursework, while the third year offers masters level courses. Students admitted into the undergraduate program are not guaranteed placement into the MDS unless they maintain a 3.0 grade point average, have completed all support courses, degree core, and Texas core with a grade of "C-" or better, and met all program requirements. Upon successful completion of the three-year professional program, students will receive a verification statement that certifies their eligibility to take the Commission on Dietetics Registration

national examination to become a Registered Dietitian Nutritionist (RDN/RD).

Students enrolled in the Nutrition and Dietetics Program who are not eligible to transition to the Master of Dietetics Studies, may earn the Bachelor of Science degree in Nutrition and Dietetics if they meet the program and University graduation requirements, but are not eligible for the verification statement to take the national RDN/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

Admission to the Coordinated Program in Dietetics is competitive. The program has been approved for a limited number of students by the accrediting organization. Admission into the major as part of a cohort group occurs in the Fall Semester.

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 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.

To declare a major in Nutrition and Dietetics, the following minimum criteria must be met:

- 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, transcripts (unofficial), two completed reference forms (program specific) preferably by faculty members, a resume, volunteer summary, and a statement indicating personal career goals, knowledge of the profession, commitment, interests, and motivation.
- Must have a personal interview with the program review committee members (by invitation) and receive a decision letter indicating acceptance.
- Must obtain a criminal background check.

Transfer students must meet all the above criteria and meet all the UTSA undergraduate admission requirements. Students that hold a Bachelor in Dietetics or Nutrition related field must have a verification statement (or an equivalent baccalaureate degree in nutrition and dietetics from an accredited college or university in the United States or have proof of equivalent training at a foreign institution) and will be expected to complete select undergraduate courses/practicums to meet the program's requirements. Admission is contingent on accreditation requirements and the number of placements available for the advanced practicums. Students that hold a bachelor's degree in an unrelated field would be required to complete all prerequisite courses and all equivalent undergraduate courses/practicums in dietetics and nutrition. Official transcripts from all institutions attended must be submitted.

## Criminal Record Check

A criminal background check is required for admission and 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, community organizations, 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 1203 and BIO 1243 or BIO 1223 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
<b>Total Credit Hours</b>	<b>42</b>

## 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.

Code	Title	Credit Hours
NDT 3413	Advanced Human Nutrition	

## Degree Requirements

Code	Title	Credit Hours
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### A. Degree core requirements

NDT 3191	Applied Food Science Practicum <sup>1</sup>	1
NDT 3203	Introduction to Nutrition and Dietetics Careers	3
NDT 3292	Food Production Practicum <sup>1</sup>	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 <sup>1</sup>	1
NDT 4191	Nutrition Care Process Practicum <sup>1</sup>	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
<b>Total Credit Hours</b>		<b>84</b>

<sup>1</sup> 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.

## 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 1203	Contemporary Biology I (core) or Biosciences I for Science Majors	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 (core)	3
<b>Credit Hours</b>		<b>16</b>

#### Spring

BIO 1243 or BIO 1223	Contemporary Biology II (core) or Biosciences II for Science Majors	3
CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory	1
WRC 1023	Freshman Composition II (core)	3
American History (core)		3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>16</b>

#### Second Year

Fall		Credit Hours
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
<b>Credit Hours</b>		<b>16</b>

#### 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
<b>Credit Hours</b>		<b>16</b>

#### Third Year

Fall		Credit Hours
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
<b>Credit Hours</b>		<b>13</b>

#### Spring

NDT 3292	Food Production Practicum <sup>1</sup>	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
<b>Credit Hours</b>		<b>14</b>

#### Fourth Year

Fall		Credit Hours
NDT 4091	Community Service Practicum <sup>1</sup>	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
<b>Credit Hours</b>		<b>16</b>

#### Spring

NDT 4191	Nutrition Care Process Practicum <sup>1</sup>	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
<b>Credit Hours</b>		<b>13</b>
<b>Total Credit Hours</b>		<b>120</b>



<sup>1</sup> 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.

## Bachelor of Science Degree in Nutrition and Health

The Bachelor of Science (B.S.) degree in Nutrition and Health is a 120-credit-hour degree designed to prepare students for entry-level positions in public health nutrition at state health departments, schools, community organizations, non-profits, and the food industry. The degree is suited for students taking prerequisites for medical schools or graduate programs in nutrition, public health, allied health, and biomedical sciences. Students who are interested in applying to health profession programs are encouraged to meet with their academic advisor and consult with the UTSA Health Professions Office.

Courses in this program help students understand and implement health promotion and disease prevention, promote healthy lifestyles through nutritional and behavioral changes, and effectively communicate nutrition messages to individuals and the public. This program is **NOT** accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) and does not meet the requirements for students to become registered dietitian nutritionists (RDNs). However, students are encouraged to declare the B.S. in Nutrition and Health major while completing the prerequisite courses to apply for UTSA's Coordinated Program in Dietetics.

Students may apply for admission into one of the concentrations within the B.S. degree in Nutrition and Health if they wish to specialize in Maternal and Child Health & Nutrition (MCHN) or Sustainable Nutrition & Food Systems (SNFS). Students may also pursue the major without a concentration.

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. **All required Nutrition (NTR) and Nutrition and Dietetic (NDT) courses must be completed with a grade of "C-" or better.**

### B.S in Nutrition and Health with Maternal and Child Health & Nutrition (MCHN) or Sustainable Nutrition & Food Systems (SNFS) Concentration

The concentrations in MCHN or SNFS can prepare students for jobs in extension service, health and wellness non-profits, school nutrition programs, public health/government nutrition programs such as the Special Supplemental Nutrition Program for Women, Infants, and Children, food service management, and food agriculture and industry. After graduation, students are prepared to pursue courses and programs to become certified as lactation consultants or dietary managers. Only one concentration can be declared.

#### Concentration Admission Policy

The goal of admission requirements for one of the B.S. in Nutrition and Health concentrations 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 Maternal and Child Health & Nutrition (MCHN) or Sustainable Nutrition & Food Systems (SNFS).

All applicants for admission to a concentration will be initially admitted to the Nutrition and Health program without a concentration. For a student to declare a concentration, they must meet the following academic criteria:

- Completion of 30 hours of prerequisite and/or support courses with a grade of "C-" or better.
- Have a minimum 2.75 (on a 4.0 scale) cumulative (all completed coursework) GPA.

### Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. degree in Nutrition and Health must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements. 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 1203 should be used to satisfy one of the Life and Physical Sciences requirements, and BIO 1243 or BIO 1223 should be used to satisfy the other Life and Physical Sciences requirement. ANT 1013, 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
<b>Total Credit Hours</b>	<b>42</b>

### Degree Requirements

Code	Title	Credit Hours
<b>A. Required Courses</b>		
MMI 1053	Introductory Microbiology	3
MMI 1061	Introductory Microbiology Laboratory	1
BIO 2061	Human Anatomy and Physiology Laboratory II	1
BIO 2051	Human Anatomy and Physiology Laboratory I	1
BIO 2053	Human Anatomy and Physiology I	3
BIO 2063	Human Anatomy and Physiology II	3
CHE 1103	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory	1

MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
STA 1053	Basic Statistics	3

**B. Nutrition and Health Requirements**

NDT 2043	Introduction to Nutritional Sciences	3
NTR 2013	Introduction to Public Health Nutrition	3
NTR 3023	Fundamentals of Food Science and Safety	3
NTR 3012	Food Science Lab and Experimental Activities	2
NTR 4033	Personal Nutrition and Cooking Basics	3
NTR 4043	Nutrition, Chronic Disease and Health Behavior	3
NDT 3343	Nutrition in the Life Span	3
NTR 3043	Nutrition Education and Communication for Health Professionals	3
NTR 4013	Public Health Nutrition Program Management and Leadership	3
NTR 4023	Public Health Nutrition Policy Systems and Solutions	3
NTR 4053	Nutrition and Healthy Aging	3
NDT 4363	Current Issues in Nutrition	3

**C. Choose One of the Following Options** 9**Option 1: No Concentration**

Choose any three elective courses from section D below.

**Option 2: Maternal and Child Health & Nutrition**

NTR 3053	Foundations of Maternal and Child Health and Nutrition
NTR 4063	Nutrition for Pregnancy and Lactation
NTR 4073	Pediatric and Adolescent Nutrition

**Option 3: Sustainable Nutrition & Food Systems**

NTR 3073	Nutrition Matters: Food Systems from Farm to Fork
NDT 3353	Production and Foodservice System Management I
NDT 4313	Production and Food Service System Management II

**D. Electives** 12

NDT 3353	Production and Foodservice System Management I
NDT 3413	Advanced Human Nutrition
NDT 4313	Production and Food Service System Management II
NTR 3053	Foundations of Maternal and Child Health and Nutrition
NTR 3073	Nutrition Matters: Food Systems from Farm to Fork
NTR 4063	Nutrition for Pregnancy and Lactation
NTR 4083	Introduction to Translational Research Methods in Nutrition Research
NTR 4093	Personal Nutrition for Sport Performance and Health
NTR 4933	Internship in Public Health Nutrition
COM 3293	Introduction to Health Communication
ES 4153	Introduction to Sustainability
HTH 3543	Growth and Development

HTH 3713	Effective Messaging in Public Health
HTH 4053	Health Care System
HTH 4513	Consumer Health
KIN 4253	Exercise Nutrition
PAD 2013	Introduction to Public Policy
PAD 3033	Introduction to Nonprofit Agencies
PSY 4253	Psychology of Health
SPN 3053	Spanish for Healthcare Professionals

**Total Credit Hours** 78

**Course Sequence Guide for B.S. Degree in Nutrition and Health**

This course sequence guide is designed to assist students in completing their UTSA undergraduate Nutrition and Health degree requirements. *These are merely guides, 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 core and support courses during Summer terms to reduce course loads during long semesters.

**B.S. in Nutrition and Health – Recommended Four-Year Academic Plan****First Year**

		Credit Hours
<b>Fall</b>		
AIS 1263	AIS: Life and Health Sciences (core)	3
MAT 1073	Algebra for Scientists and Engineers (core)	3
BIO 1233 or BIO 1203	Contemporary Biology I (core) or Biosciences I for Science Majors	3
CHE 1103	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory	1
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>16</b>

**Spring**

BIO 1243 or BIO 1223	Contemporary Biology II (core) or Biosciences II for Science Majors	3
WRC 1023	Freshman Composition II (core)	3
American History (core 1)		3
Government-Political Science (core 1)		3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>15</b>

**Second Year**

<b>Fall</b>		
MMI 1053	Introductory Microbiology	3
MMI 1061	Introductory Microbiology Laboratory	1
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

American History (core 2)	3
<b>Credit Hours</b>	<b>14</b>

**Spring**

NDT 2043	Introduction to Nutritional Sciences	3
BIO 2063	Human Anatomy and Physiology II	3
BIO 2061	Human Anatomy and Physiology Laboratory II	1
PSY 1013 or SOC 1013 or ANT 1013	Introduction to Psychology (core) or Introduction to Sociology or Introduction to Anthropology	3
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
Government-Political Science (core 2)		3
<b>Credit Hours</b>		<b>16</b>

**Third Year****Fall**

NTR 2013	Introduction to Public Health Nutrition	3
NTR 3023	Fundamentals of Food Science and Safety	3
NTR 3012	Food Science Lab and Experimental Activities	2
NTR 3043	Nutrition Education and Communication for Health Professionals	3
Concentration or elective		3
<b>Credit Hours</b>		<b>14</b>

**Spring**

NTR 4043	Nutrition, Chronic Disease and Health Behavior	3
NTR 4033	Personal Nutrition and Cooking Basics	3
NDT 3343	Nutrition in the Life Span	3
Language, Philosophy, & Culture (core)		3
NTR 4053	Nutrition and Healthy Aging	3
<b>Credit Hours</b>		<b>15</b>

**Fourth Year****Fall**

NTR 4013	Public Health Nutrition Program Management and Leadership	3
Concentration or Elective		3
Concentration or Elective		3
Concentration or Elective		3
Concentration or Elective		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

NTR 4023	Public Health Nutrition Policy Systems and Solutions	3
NDT 4363	Current Issues in Nutrition	3
Concentration or Elective		3
Concentration or Elective		3

Elective (if needed to meet 120 hour minimum)	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

- Nutrition for Health Professionals Certificate (p. 158)
- Community Health Worker Certificate

**Nutrition for Health Professionals Certificate**

The Nutrition for Health Professionals Certificate covers nutrition among all stages of life, as it relates to prevention, management, and treatment strategies to promote optimal health. Nutrition education and communication strategies will be a central focus. Courses are taught by Registered, Licensed Dietitians.

The certificate program is open to all majors. Courses can be taken toward certificate completion or as stand-alone electives.

**A. Required Courses**<sup>1</sup>

NDT 3343	Nutrition in the Life Span	3
NDT 3363	Nutrition Education and Communication for Health Professionals	3

**B. Electives. 9 credit hours selected from the courses below:**<sup>2</sup>

NDT 2313	Introduction to Public Health Nutrition	
NDT 2323	Nutrition Matters: Food Systems from Farm to Fork	
NDT 3373	Foundations of Maternal and Child Health and Nutrition	
NDT 3413	Advanced Human Nutrition	
NDT 4363	Current Issues in Nutrition	
NDT 4943	Special Studies in Nutrition and Dietetics	
<b>Total Credit Hours</b>		<b>15</b>

<sup>1</sup> NDT 2043 Introduction to Nutritional Sciences, or an equivalent, is the prerequisite for other NDT courses.

<sup>2</sup> 3 credit hours of electives may be from any Health (HTH), Kinesiology (KIN), or other approved course.

**Community Health Worker Certificate**

This certificate is designed to provide community health worker training to community members as a stackable certificate that could be applied with the addition of one or more focus areas to qualify for a Multidisciplinary Study (MDST) bachelor's degree. Community health worker training is designed to help members of the community to provide health-related information to their fellow community members. This information can be disease-specific, treatment-related, or even facilitating access to care and insurance.

Code	Title	Credit Hours
<b>A. Required Courses</b>		
HTH 2413	Introduction to Community and Public Health	3
HTH 4953	Special Studies in Health	3
PAD 4963	Special Topics in Public Administration	3
SOC 4683	Health Disparities	3
<b>B. Electives</b>		
		3

Students will select 3 hours from the following courses:

BBL 2003	Language, Culture, and Society
COU 3203	Child Abuse and Domestic Violence
COM 3293	Introduction to Health Communication
COM 3493	Global Health Communication
DEM 4013	Geographic Information Systems for Population Analysis and Policy
DEM 4963	Social Demography and Public Policy
HTH 2623	Database Management in Community and Public Health
HTH 3003	Survey of Drugs and Health
HTH 3513	Community Health
HTH 3543	Growth and Development
HTH 3553	Emotional Wellness
HTH 4053	Health Care System
HTH 4513	Consumer Health
KIN 3453	Exercise Prescription
NDT 3343	Nutrition in the Life Span
NDT 4333	Community Nutrition
PAD 2073	Foundations of Civic Engagement
PAD 3033	Introduction to Nonprofit Agencies
PSY 4253	Psychology of Health
SOC 3193	The Sociology of Work and Occupations
SPN 3053	Spanish for Healthcare Professionals
TIS 3033	Interpreting in Medical Settings
TIS 3043	Advanced Practice in Healthcare Interpreting

Total Credit Hours

15

## Nutrition (NTR) Courses

### **NTR 2013. Introduction to Public Health Nutrition. (3-0) 3 Credit Hours.**

Prerequisite: NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) or equivalent. Introduces students to the principles of nutrition and public health. Considers the multiple levels of influence on diet intake, food choice, and related health outcomes. Examines nutrition prevention policy, programs, initiatives, and interventions. The course will also cover the role of the public health nutrition professional in the community. (Formerly NDT 2313 (<https://next.catalog.utsa.edu/search/?P=NDT%202313>)). Course Fee: LRHC \$10; STHC \$18.

### **NTR 3012. Food Science Lab and Experimental Activities. (0-6) 2 Credit Hours.**

Prerequisite: NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) Introduction of Nutritional Sciences. Learn the basic principles of food science and gain an enhanced understanding of the role of food science in the development of food products. Gain a better understanding of the importance of food safety, basic regulatory issues, and food science trends. Course Fee: LRHC \$10; STHC \$12; DNMF \$450.

### **NTR 3023. Fundamentals of Food Science and Safety. (3-0) 3 Credit Hours.**

Prerequisite: NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) Introduction of Nutritional Sciences. Theory and practical application of scientific principles of food purchasing and preparation, including food safety considerations, including regulatory agencies responsible for food safety. Course Fee: LRHC \$10; STHC \$18.

### **NTR 3043. Nutrition Education and Communication for Health Professionals. (3-0) 3 Credit Hours.**

Prerequisite: NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) or equivalent. Introduces students to the fundamentals of nutrition education, including traditional and developing models and theories of learning for promoting good nutrition and health. Students will develop a basic understanding of consumer trends in food, nutrition, and health and effective communication skills to promote a healthy lifestyle. (Formerly NDT 3363 (<https://next.catalog.utsa.edu/search/?P=NDT%203363>)). Course Fee: LRHC \$10; STHC \$18.

### **NTR 3053. Foundations of Maternal and Child Health and Nutrition. (3-0) 3 Credit Hours.**

Prerequisite: NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) or equivalent. This course is an introduction to the historical perspective of maternal and child health, emphasizing nutritional recommendations during preconception, pregnancy, lactation, early infancy, and childhood. Students will gain an understanding of the federal programs that support women, infants, and children and explore career opportunities. (Formerly NDT 3373 (<https://next.catalog.utsa.edu/search/?P=NDT%203373>)). Course Fee: LRHC \$10; STHC \$18.

### **NTR 3073. Nutrition Matters: Food Systems from Farm to Fork. (3-0) 3 Credit Hours.**

Prerequisite: NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) or equivalent. Students will gain a scientific foundation for understanding what we eat matters, farm to fork, and the tools and skills to make the healthy food choices to promote good health and prevent chronic disease. (Formerly NDT 2323 (<https://next.catalog.utsa.edu/search/?P=NDT%202323>)). Course Fee: LRHC \$10; STHC \$18.

### **NTR 4013. Public Health Nutrition Program Management and Leadership. (3-0) 3 Credit Hours.**

Prerequisite: NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) Introduction of Nutritional Sciences. This course focuses on enhancing an individual's abilities to become a skilled professional and a leader in the field of human nutrition. Qualities of leaders, efficient teams, effective communication, and transformational leadership will be applied in a wider perspective pertaining to public health nutrition programs. Course Fee: LRHC \$10; STHC \$18.

### **NTR 4023. Public Health Nutrition Policy Systems and Solutions. (3-0) 3 Credit Hours.**

Prerequisite: NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) Introduction of Nutritional Sciences. Familiarize and engage in the dynamics of policy making processes that address nutrition problems and issues. This course will discuss governmental and legislative decisions that address a nutrition or food problem or set of problems. Course Fee: LRHC \$10; STHC \$18.

### **NTR 4033. Personal Nutrition and Cooking Basics. (0-9) 3 Credit Hours.**

Prerequisite: NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) Introduction of Nutritional Sciences. This course is designed to evaluate social determinants of food choices and the meaning of food in the context of various cultures, as they contribute to the establishment of a cultural identity through the acquisition of basic food preparation skills. Course Fee: LRHC \$10; STHC \$18; DNMF \$675.

**NTR 4043. Nutrition, Chronic Disease and Health Behavior. (3-0) 3 Credit Hours.**

Prerequisite: NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) Introduction of Nutritional Sciences. This course is a survey of current nutrition science principles in disease prevention and health promotion. As a result of taking this course, you will gain nutritional science knowledge and analytical skills that can be used to evaluate primary research related to nutrition and specific disease states. Course Fee: LRHC \$10; STHC \$18.

**NTR 4053. Nutrition and Healthy Aging. (3-0) 3 Credit Hours.**

Prerequisite: NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) Introduction of Nutritional Sciences. This course reviews aging theories and the pathophysiology of aging while focusing on the nutritional needs of older adults. Nutritional status assessment and management of age-related diseases will be explored. Course Fee: LRHC \$10; STHC \$18.

**NTR 4063. Nutr Pregnancy and Lactation. (3-0) 3 Credit Hours.**

Prerequisite: NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) Introduction of Nutritional Sciences. Overview of nutrition issues affecting pregnant and postpartum women, females of reproductive age, infants, and toddlers through two years of age. The course will integrate public health practice and policy recommendations with evidence-based clinical practice guidelines to provide a comprehensive view of maternal and infant nutrition issues from a public health perspective. Course Fee: LRHC \$10; STHC \$18.

**NTR 4073. Pediatric and Adolescent Nutrition. (3-0) 3 Credit Hours.**

Prerequisite: NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) Introduction of Nutritional Sciences. Overview of nutritional needs of preschool-aged children in early childhood through adolescence. Relevant conditions, such as food allergies, obesity, and eating disorders, will be discussed as well as the influence of parents, schools, media, and the community will be examined. Course Fee: LRHC \$10; STHC \$18.

**NTR 4083. Introduction to Translational Research Methods In Nutrition. (3-0) 3 Credit Hours.**

Prerequisite: NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) Introduction of Nutritional Sciences. This course discusses the implication of translational research in the nutrition field. Students will be able to select appropriate methods of data collection and analysis for given nutrition-related problems. Critical evaluation of research and ethics in research will be required. Course Fee: LRHC \$10; STHC \$18.

**NTR 4093. Personal Nutrition for Sport Performance and Health. (3-0) 3 Credit Hours.**

Prerequisite: NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) Introduction of Nutritional Sciences. Increase student understanding of advanced concepts of human nutrition, including digestion, absorption, metabolism, and the function of nutrients as they relate to human health and physical performance while developing an understanding of nutritional genomics in relation to personalized nutrition as means of nutritional control of gene expression and functional genomic studies with relationships to nutrient intake and polymorphisms. Course Fee: LRHC \$10; STHC \$18.

**NTR 4933. Internship in Public Health Nutrition. (3-0) 3 Credit Hours.**

Prerequisite: 'A cumulative grade point average of 3.00 or greater and must be within 9 semester credit hours of graduation is required. NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) Introduction of Nutritional Sciences. The internship provides an opportunity to gain experience in a public health nutrition-related agency. Opportunities will be coordinated with a faculty advisor. Course Fee: LRHC \$10; STHC \$18; DNP \$60.

**Nutrition and Dietetics (NDT) Courses**

**NDT 2043. Introduction to Nutritional Sciences. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1233 (<https://next.catalog.utsa.edu/search/?P=BIO%201233>) or BIO 1203 (<https://next.catalog.utsa.edu/search/?P=BIO%201203>). 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. Generally offered: Fall, Spring. Course Fee: DL01 \$75; LRHC \$10; STHC \$18.

**NDT 2313. Introduction to Public Health Nutrition. (3-0) 3 Credit Hours.**

Prerequisite: NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) or equivalent. Introduces students to the principles of nutrition and public health. Considers the multiple levels of influence on diet intake, food choice, and related health outcomes. Examines nutrition prevention policy, programs, initiatives, and interventions. The course will also cover the role of the public health nutrition professional in the community. Course fees: LRHC \$10; STHC \$18.

**NDT 2323. Nutrition Matters: Food Systems from Farm to Fork. (3-0) 3 Credit Hours.**

Prerequisite: NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) or equivalent. Students will gain a scientific foundation for understanding what we eat matters, farm to fork, and the tools and skills to make the healthy food choices to promote good health and prevent chronic disease. Course fees: LRHC \$10; STHC \$18.

**NDT 3191. Applied Food Science Practicum. (0-3) 1 Credit Hour.**

Prerequisite: Dietetics majors only, BIO 1053, CHE 1103 (<https://next.catalog.utsa.edu/search/?P=CHE%201103>), CHE 1113 (<https://next.catalog.utsa.edu/search/?P=CHE%201113>), and NDT 2043 (<https://next.catalog.utsa.edu/search/?P=NDT%202043>) or equivalent. Corequisites: Concurrent enrollment in NDT 3313 (<https://next.catalog.utsa.edu/search/?P=NDT%203313>) 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 Fee: DNMF \$225; LRHC \$10; STHC \$6; DL01 \$25.

**NDT 3203. Introduction to Nutrition and Dietetics Careers. (3-0) 3 Credit Hours.**

Prerequisite: 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 Fee: DL01 \$75; LRHC \$10; STHC \$18.

**NDT 3292. Food Production Practicum. (0-6) 2 Credit Hours.**

Prerequisite: Dietetics majors only. Corequisites: Concurrent enrollment in NDT 3353 (<https://next.catalog.utsa.edu/search/?P=NDT%203353>) or permission of faculty advisor. Practicum related to the procurement, preparation, and delivery of food in large foodservice operations. Generally offered: Spring. Course Fee: DNP \$40; LRHC \$10; STHC \$12.

**NDT 3313. Applied Food Science. (3-0) 3 Credit Hours.**

Prerequisite: Dietetic majors only, BIO 1053, CHE 1103 (<https://next.catalog.utsa.edu/search/?P=CHE%201103>), CHE 1113 (<https://next.catalog.utsa.edu/search/?P=CHE%201113>)



## Department of Criminology and Criminal Justice

The Department of Criminology and Criminal Justice offers a Bachelor of Arts (B.A.) degree which provides the opportunity for comprehensive study of criminal justice, and a Minor in Criminology and 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 Criminology and 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. Criminology and 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 Criminology and 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
<b>Total Credit Hours</b>	<b>42</b>

#### Gateway Course

Students pursuing the B.A. degree in Criminology and 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.

Code	Title	Credit Hours
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 Criminology and Criminal Justice.

#### A. Criminology and Criminal Justice Core (18 semester credit hours)

Code	Title	Credit Hours
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##### 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 and Law (3 semester credit hours)		
CRJ 3643	Pretrial Diversion and Problem-Solving Courts	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 Criminology and Criminal Justice Coursework

18 credit hours semester credit hours of non-core criminology and criminal justice courses chosen from the following courses:

Code	Title	Credit Hours
CRJ 2213	Introduction to Policing	3
CRJ 2513	Introduction to Corrections	3
CRJ 2623	Substantive Criminal Law	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 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. Criminology and Criminal Justice Internship (3 semester credit hours)**

Code	Title	Credit Hours
CRJ 4933	Internship in Criminal Justice	3

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.

**Course Sequence Guide for Bachelor of Arts Degree in Criminology and Criminal Justice**

This course sequence guide is designed to assist students in completing their UTSA undergraduate Criminology and 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 Criminology and Criminal Justice – Recommended Four-Year Academic Plan**

First Year		Credit Hours
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
CRJ 1113	The American Criminal Justice System (core and major)	3
WRC 1013	Freshman Composition I (core)	3
University Core		3
University Core		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
WRC 1023	Freshman Composition II (core)	3
University Core		3
University Core		3
Non-Core CRJ		3
Elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Second Year</b>		
<b>Fall</b>		
CRJ 2153	Criminological Theory	3
University Core		3
University Core		3
University Core		3
Elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
CRJ 3013	Research Design and Analysis in Criminal Justice	3
University Core		3
University Core		3
Elective		3
Upper-division Elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Third Year</b>		
<b>Fall</b>		
University Core		3
Major Core		3
Non-Core CRJ		3
Elective		3
Upper-division Elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
Major Core		3
Non-Core CRJ		3
Elective		3
Elective		3
Upper-division Elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Fall</b>		
Major Core		3

## Department of Demography

Currently, degree programs are in effect at the graduate level only. (See the *UTSA Graduate Catalog* for further information.)

Non-Core CRJ	3
Elective	3
Elective	3
Upper-division Elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
CRJ 4933 Internship in Criminal Justice	3
Non-Core CRJ	3
Non-Core CRJ	3
Elective	3
Upper-division Elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

## Minor in Criminology and Criminal Justice

All students pursuing a Minor in Criminology and Criminal Justice must complete 21 semester credit hours (only available for non-Criminology and Criminal Justice majors).

Code	Title	Credit Hours
<b>A. Required Courses (15 semester credit hours)</b>		
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 and Law (3 semester credit hours)		
CRJ 2623	Substantive Criminal Law	
CRJ 2813	Introduction to Courts and the Legal System	
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>B. Elective Courses (6 semester credit hours)</b>		
6 semester credit hours of non-criminal justice core electives which must be upper-division (3000 and 4000 level) Criminology and Criminal Justice (CRJ) electives. These electives will be selected by the student to reflect his or her specific interests.		6
<b>Total Credit Hours</b>		<b>21</b>

To declare a Minor in Criminology and 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 Kinesiology

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. Prior to starting the practical teaching experience, a student must be accepted into the Teacher Certification Program. Please refer to the section on Teacher Certification Program in the catalog for more information.

## Department Honors

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

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

- B.S. degree in Kinesiology (p. 164)
  - Athletic Training Concentration (p. 166)
  - Exercise Physiology Concentration (p. 168)
  - Kinesiology and Health Science Concentration (p. 171)
  - Physical Education Concentration (p. 173)

## 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.

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
<b>Total Credit Hours</b>	<b>42</b>

## 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.

Code	Title	Credit Hours
KIN 2303	Foundations of Kinesiology	

## 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.

Code	Title	Credit Hours
<b>A. Required KIN courses</b>		
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>B. Support courses</b>		
BIO 1233	Contemporary Biology I (Life and Physical Sciences Core)	3
or BIO 1203	Biosciences I for Science Majors	

BIO 2043/HTH 3013/ KIN 4253	Nutrition	3
or NDT 2043	Introduction to Nutritional Sciences	
BIO 2053	Human Anatomy and Physiology I	3
BIO 2063	Human Anatomy and Physiology II	3
COM 1053	Business and Professional Speech	3
or COM 2113	Public Speaking	
KIN 3313	Anatomy and Physiology for Kinesiology	3
MAT 1023	College Algebra with Applications (Mathematics Core)	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 33 hours of free 24-33 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. Unless the student completes a minor, 24 hours must be taken from the list of designated electives listed below.

KIN 3013	Theory of Coaching	
KIN 3053	Fitness Instruction	
KIN 3073	Strength and Conditioning	
KIN 3223	Coaching Leadership	
KIN 3303	Care and Prevention of Athletic Injuries	
KIN 3321	Biomechanics Laboratory	
KIN 3413	Instruction of Sports Activities and Games	
KIN 3431	Exercise Physiology Laboratory	
KIN 3443 & KIN 3441	Health Related Fitness Assessment and Health Related Fitness Assessment Laboratory	
KIN 3453	Exercise Prescription	
KIN 3463	Musculoskeletal Anatomy	
KIN 4233	Advanced Exercise Physiology	
KIN 4253	Exercise Nutrition	
KIN 4343	Fundamental Motor Skills	
KIN 4401	Motor Learning Laboratory	
KIN 4413	Coaching Athletics	
KIN 4933	Practicum in Kinesiology Research	
KIN 4936	Internship in Kinesiology	
KIN 4943	Athletic Coaching Practicum	

**Total Credit Hours** **87**

## B.S. in Kinesiology – Recommended Four-Year Academic Plan

First Year		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
KIN 2303	Foundations of Kinesiology	3
WRC 1013	Freshman Composition I (core)	3
Life & Physical Sciences (core)		3
Mathematics (core)		3
<b>Credit Hours</b>		<b>15</b>



<b>Spring</b>			
BIO 1233 or BIO 1203	Contemporary Biology I (core and major) or Biosciences I for Science Majors	3	
KIN 2123	Fitness and Wellness Concepts	3	
WRC 1023	Freshman Composition II (core)	3	
	Elective or University core course	3	
	Elective or University core course	3	
<b>Credit Hours</b>		<b>15</b>	

**Second Year**

<b>Fall</b>			
BIO 2053	Human Anatomy and Physiology I	3	
STA 1053	Basic Statistics	3	
	Elective or University core course	3	
	Elective or University core course	3	
	Elective or University core course	3	
<b>Credit Hours</b>		<b>15</b>	

**Spring**

MAT 1073 or MAT 1023	Algebra for Scientists and Engineers (core) or College Algebra with Applications	3	
	Nutrition course (BIO 2043, HTH 3013, KIN 4253, or NDT 2043)	3	
BIO 2063	Human Anatomy and Physiology II	3	
KIN 3313	Anatomy and Physiology for Kinesiology	3	
	Elective or University core course	3	
<b>Credit Hours</b>		<b>15</b>	

**Third Year**

<b>Fall</b>			
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	
	Elective or University core course	3	
	Elective or University core course	3	
<b>Credit Hours</b>		<b>15</b>	

**Spring**

KIN 3323	Biomechanics	3	
KIN 3433	Exercise Physiology	3	
KIN 4123	Introduction to Sport Psychology	3	
	Elective or University core course	3	
	Elective or University core course	3	
<b>Credit Hours</b>		<b>15</b>	

**Fourth Year**

<b>Fall</b>			
KIN 4023	Exercise Psychology	3	
KIN 4113	Evaluation	3	
KIN 4403	Motor Learning	3	
	Elective or University core course	3	

Elective or University core course	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
Elective or University core course	3
Elective or University core course	3
Elective or University core course	3
Elective or University core course	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

## 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. 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:

Code	Title	Credit Hours
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	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.

Code	Title	Credit Hours
KIN 2303	Foundations of Kinesiology	

## 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.

Code	Title	Credit Hours
<b>A. Required HTH and KIN courses</b>		
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 3073	Strength and Conditioning	3
KIN 3303	Care and Prevention of Athletic Injuries	3
KIN 3323	Biomechanics	3
KIN 3433	Exercise Physiology	3
KIN 3453	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 (Life and Physical Sciences Core)	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 (Component Area Option Core)	3
or COM 1053	Business and Professional Speech	
MAT 1073	Algebra for Scientists and Engineers (Mathematics Core)	3
PHY 1603	Algebra-based Physics I	3
PSY 1013	Introduction to Psychology (Social and Behavioral Sciences Core)	3
or SOC 1013	Introduction to Sociology	
STA 1053	Basic Statistics (Mathematics Core)	3

### C. Designated electives

Select 11 semester credit hours from the following courses:		11
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	
or NDT 2043	Introduction to Nutritional Sciences	
HTH 4503	Epidemiology	
KIN 2123	Fitness and Wellness Concepts	
KIN 3013	Theory of Coaching	
KIN 3103	Motor Development	
KIN 3223	Coaching Leadership	
KIN 3313	Anatomy and Physiology for Kinesiology	
KIN 4023	Exercise Psychology	
KIN 4113	Evaluation	
KIN 4413	Coaching Athletics	
KIN 4943	Athletic Coaching Practicum	
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**

		<b>Credit Hours</b>
<b>Fall</b>		
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 (core)	3
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>15</b>

**Spring**

COM 2113 or COM 1053	Public Speaking (core) or Business and Professional Speech	3
KIN 2141	Medical Terminology	1
PSY 1013 or SOC 1013	Introduction to Psychology (core) or Introduction to Sociology	3
STA 1053	Basic Statistics (core and major)	3
WRC 1023	Freshman Composition II (core)	3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>16</b>

**Second Year**

<b>Fall</b>		
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
<b>Credit Hours</b>		<b>15</b>

**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
<b>Credit Hours</b>		<b>14</b>

**Third Year**

<b>Fall</b>		
KIN 3073	Strength and Conditioning	3
KIN 3433	Exercise Physiology	3
KIN 3463	Musculoskeletal Anatomy	3
KIN 4143	Evaluation of Athletic Injuries	3

KIN 4931	Clinical Applications of Athletic Injuries	1
Designated elective or University core course		3

**Credit Hours 16**

**Spring**

KIN 3323	Biomechanics	3
KIN 3453	Exercise Prescription	3
KIN 4043	Therapeutic Modalities	3
KIN 4243	Musculoskeletal Rehabilitation	3
KIN 4931	Clinical Applications of Athletic Injuries	1
Designated elective or University core course		3

**Credit Hours 16**

**Fourth Year**

**Fall**

KIN 4123	Introduction to Sport Psychology	3
HTH 3003	Survey of Drugs and Health	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		2

**Credit Hours 15**

**Spring**

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 or University core course		3

**Credit Hours 13**

**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. 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.

Code	Title	Credit Hours
BIO 1233 or BIO 1203	Contemporary Biology I Biosciences I for Science Majors	3
KIN 2303	Foundations of Kinesiology	3
MAT 1023 or MAT 1073	College Algebra with Applications Algebra for Scientists and Engineers	3
WRC 1013	Freshman Composition I	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 1203 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.

Code	Title	Credit Hours
KIN 2303	Foundations of Kinesiology	

## Degree Requirements

Code	Title	Credit Hours
<b>A. Required KIN courses</b>		
KIN 2211	First Aid and CPR	1
KIN 2303	Foundations of Kinesiology	3
KIN 2441	Management in Kinesiology	1
KIN 3053	Fitness Instruction	3
KIN 3073	Strength and Conditioning	3
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	Exercise Prescription	3
KIN 4023	Exercise Psychology	3
KIN 4233	Advanced Exercise Physiology	3
KIN 4253	Exercise Nutrition	3
KIN 4933	Practicum in Kinesiology Research (repeated twice)	6
or KIN 4936	Internship in Kinesiology	

**B. Support courses**

BIO 1233	Contemporary Biology I (Life and Physical Sciences Core)	3
or BIO 1203	Biosciences I for Science Majors	
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 (Component Area Option Core)	3
MAT 1023	College Algebra with Applications	3
STA 1053	Basic Statistics (Mathematics Core)	3

**C. Minor Required 18-21**

Student must choose from one of the four minors: Biology, Business, Community Health, or Wellness.

**D. Electives 7-10**

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.

**Total Credit Hours 89**

**B.S. in Kinesiology, Exercise Physiology Concentration – Recommended Four-Year Academic Plan**

**First Year**

		Credit Hours
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1233 or BIO 1203	Contemporary Biology I (core and major) or Biosciences I for Science Majors	3
KIN 2303	Foundations of Kinesiology	3
MAT 1023	College Algebra with Applications (core)	3
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>15</b>

**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 (core)	3

Life & Physical Sciences (core)	3
Elective or University core course	3
<b>Credit Hours</b>	<b>16</b>

**Second Year**

**Fall**

BIO 2063	Human Anatomy and Physiology II	3
BIO 2061	Human Anatomy and Physiology Laboratory II	1
KIN 2211	First Aid and CPR	1
Elective, minor, or university core course	3	
Elective, minor, or university core course	3	
Elective, minor, or university core course	3	
<b>Credit Hours</b>	<b>14</b>	

**Spring**

COM 2113	Public Speaking (core)	3
KIN 2441	Management in Kinesiology	1
KIN 3053	Fitness Instruction	3
Elective, minor, or university core course	3	
Elective, minor, or university core course	3	
Elective, minor, or university core course	3	
<b>Credit Hours</b>	<b>16</b>	

**Third Year**

**Fall**

KIN 3073	Strength and Conditioning	3
KIN 3323	Biomechanics	3
KIN 3321	Biomechanics Laboratory	1
KIN 3433	Exercise Physiology	3
KIN 3431	Exercise Physiology Laboratory	1
Elective, minor, or university core course	3	
<b>Credit Hours</b>	<b>14</b>	

**Spring**

KIN 3443	Health Related Fitness Assessment	3
KIN 3441	Health Related Fitness Assessment Laboratory	1
KIN 3453	Exercise Prescription	3
KIN 4023	Exercise Psychology	3
Elective, minor, or university core course	3	
Elective, minor, or university core course	3	
<b>Credit Hours</b>	<b>16</b>	

**Summer**

Elective course	2
<b>Credit Hours</b>	<b>2</b>

**Fourth Year**

**Fall**

KIN 4233	Advanced Exercise Physiology	3
KIN 4253	Exercise Nutrition	3
Elective, minor, or university core course	3	
Elective, minor, or university core course	3	
Elective, minor, or university core course	3	
<b>Credit Hours</b>	<b>15</b>	

**Spring**

KIN 4936	Internship in Kinesiology	6
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Elective, minor, or university core course	3
Elective, minor, or university core course	3
<b>Credit Hours</b>	<b>12</b>
<b>Total Credit Hours</b>	<b>120</b>

## 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.

### Accelerated advanced degree programs

Through UTSA's partnership with UT Health San Antonio, Kinesiology major students in the Kinesiology and Health Science Concentration are eligible to apply to the 3+2 M.S. in Respiratory Therapy Program and 3+3 Physical Therapy Early Acceptance Program (PREAP). The 3+2 M.S. in Respiratory Therapy Program allows students to complete B.S. in Kinesiology from UTSA and M.S. in Respiratory Therapy from UT Health San Antonio in 5 years. The 3+3 Physical Therapy Early Acceptance Program allows students to complete B.S. in Kinesiology from UTSA and Doctorate in Physical Therapy from UT Health San Antonio in 6 years. Students 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. 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.

Code	Title	Credit Hours
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors	4
KIN 2303	Foundations of Kinesiology	3
MAT 1073	Algebra for Scientists and Engineers	3
WRC 1013	Freshman Composition I	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 1203 and BIO 1223 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.

Code	Title	Credit Hours
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.

Code	Title	Credit Hours
<b>A. Required KIN courses</b>		
KIN 2141	Medical Terminology	1
KIN 2303	Foundations of Kinesiology	3
KIN 3073	Strength and Conditioning	3
KIN 3303	Care and Prevention of Athletic Injuries	3
KIN 3323	Biomechanics	3
KIN 3433	Exercise Physiology	3
KIN 3453	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>B. Support courses</b>		
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors (Life and Physical Sciences Core)	4

BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors (Life and Physical Sciences Core)	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 (Component Area Option Core) Public Speaking	3
MAT 1073	Algebra for Scientists and Engineers (Mathematics Core)	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 (Social and Behavioral Sciences Core)	3
SOC 1013	Introduction to Sociology (Social and Behavioral Sciences Core)	3
STA 1053	Basic Statistics (Mathematics Core)	3

<b>C. Electives</b>		
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.		3
<b>Total Credit Hours</b>		<b>87</b>

<b>B.S. in Kinesiology, Kinesiology and Health Science Concentration – Recommended Four-Year Academic Plan</b>		
<b>First Year</b>		
		<b>Credit Hours</b>
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
KIN 2303	Foundations of Kinesiology	3
MAT 1073	Algebra for Scientists and Engineers (core)	3
PSY 1013	Introduction to Psychology (core)	3
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors (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 (core)	3

Elective or University core course		2
<b>Credit Hours</b>		<b>16</b>
<b>Second Year</b>		
<b>Fall</b>		
BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors (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
Elective or University core course		3
<b>Credit Hours</b>		<b>16</b>
<b>Spring</b>		
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 or university core course		3
<b>Credit Hours</b>		<b>14</b>
<b>Third Year</b>		
<b>Fall</b>		
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 3073	Strength and Conditioning	3
KIN 3433	Exercise Physiology	3
Elective or university core course		3
<b>Credit Hours</b>		<b>16</b>
<b>Spring</b>		
KIN 3323	Biomechanics	3
KIN 3463	Musculoskeletal Anatomy	3
KIN 4143	Evaluation of Athletic Injuries	3
KIN 4253	Exercise Nutrition	3
Elective or University core course		3
<b>Credit Hours</b>		<b>15</b>
<b>Summer</b>		
Elective or University core course		3
<b>Credit Hours</b>		<b>3</b>
<b>Fourth Year</b>		
<b>Fall</b>		
COM 1053 or COM 2113	Business and Professional Speech or Public Speaking	3
KIN 3453	Exercise Prescription	3
KIN 4043	Therapeutic Modalities	3
KIN 4243	Musculoskeletal Rehabilitation	3
Elective or University core course		3
<b>Credit Hours</b>		<b>15</b>

<b>Spring</b>		
KIN 4403	Motor Learning	3
KIN 4936	Internship in Kinesiology (or two Electives or University core courses)	6
Elective or University core course		1
<b>Credit Hours</b>		<b>10</b>
<b>Total Credit Hours</b>		<b>120</b>

## 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. 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. Prior to starting the practical teaching experience, a student must be accepted into the Teacher Certification Program. The requirements for acceptance into the Teacher Certification Program include a 2.75 cumulative grade point average. Please refer to the section on Teacher Certification Program in the catalog for more information. All kinesiology degree core and support work must be completed with a grade of "C-" or better.

Academic advising for students seeking the Kinesiology degree is available in the 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 or MAT 1023 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.

Code	Title	Credit Hours
KIN 2303	Foundations of Kinesiology	
KIN 3313	Anatomy and Physiology for Kinesiology	

### Degree Requirements

Code	Title	Credit Hours
<b>A. Required KIN courses</b>		<b>27</b>
KIN 2303	Foundations of Kinesiology	
KIN 3103	Motor Development	
KIN 3313	Anatomy and Physiology for Kinesiology	
KIN 3323	Biomechanics	
KIN 3413	Instruction of Sports Activities and Games	
KIN 3433	Exercise Physiology	
KIN 4113	Evaluation	
KIN 4343	Fundamental Motor Skills	
KIN 4423	Developmental/Adapted Physical Activity	
<b>B. Support courses</b>		<b>6</b>
BIO 1233	Contemporary Biology I (Life and Physical Sciences core)	
STA 1053 or MAT 1023	Basic Statistics (Mathematics core) College Algebra with Applications	
<b>C. Second Teaching Field or Coaching Certificate</b>		<b>18</b>
<b>D. Teaching Certificate courses</b>		<b>33</b>
EED 2013	Introduction to Teaching and Learning 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	
BBL 3403	Cultural and Linguistic Equity for Schooling	
SPE 3603	Introduction to Special Education	
LTED 3773	Reading and Writing Across the Disciplines-Grades 7–12 <sup>1</sup>	
ESL 3073	Second Language Teaching and Learning for Grades 4-8	
CI 4273	Methods of Teaching Content in the Elementary School- Physical Education <sup>1</sup>	
CI 4313	Methods of Teaching Content in the Secondary School- Physical Education <sup>1</sup>	
CI 4713	Clinical Teaching: All Level EC-12 (Repeat for 6 semester credit hours) <sup>1</sup>	
<b>Total Credit Hours</b>		<b>84</b>

<sup>1</sup> 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		Credit Hours
<b>Fall</b>		
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 (core)	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
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
EED 2013	Introduction to Teaching and Learning 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 (core)	3
<b>Credit Hours</b>		<b>15</b>
<b>Summer</b>		
University core course		3
<b>Credit Hours</b>		<b>3</b>
<b>Second Year</b>		
<b>Fall</b>		
KIN 3103	Motor Development	3
KIN 3313	Anatomy and Physiology for Kinesiology	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
SOC 1013	Introduction to Sociology (core)	3
STA 1053 or MAT 1023	Basic Statistics (core and major) or College Algebra with Applications	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
EDP 3203	Learning and Development in the Secondary School Adolescent	3
KIN 3323	Biomechanics	3
KIN 3413	Instruction of Sports Activities and Games	3
KIN 4113	Evaluation	3
Second Teaching Field		3
<b>Credit Hours</b>		<b>15</b>

<b>Summer</b>		KIN 4943	Athletic Coaching Practicum	3
University core course				3
	<b>Credit Hours</b>			<b>3</b>
<b>Third Year</b>				
<b>Fall</b>				
BBL 3403	Cultural and Linguistic Equity for Schooling			3
CI 4313	Methods of Teaching Content in the Secondary School- Physical Education			3
KIN 4343	Fundamental Motor Skills			3
SPE 3603	Introduction to Special Education			3
Second Teaching Field				3
	<b>Credit Hours</b>			<b>15</b>
<b>Spring</b>				
CI 4273	Methods of Teaching Content in the Elementary School- Physical Education			3
ESL 3073	Second Language Teaching and Learning for Grades 4-8			3
KIN 4423	Developmental/Adapted Physical Activity			3
LTED 3773	Reading and Writing Across the Disciplines-Grades 7-12			3
Second Teaching Field				3
	<b>Credit Hours</b>			<b>15</b>
<b>Summer</b>				
University core course				3
KIN 3433	Exercise Physiology			3
	<b>Credit Hours</b>			<b>6</b>
<b>Fourth Year</b>				
<b>Fall</b>				
Second Teaching Field				3
Second Teaching Field				3
CI 4713	Clinical Teaching: All Level EC-12			3
	<b>Credit Hours</b>			<b>9</b>
<b>Spring</b>				
CI 4713	Clinical Teaching: All Level EC-12			3
Secondary Teaching Field				3
University core course				3
	<b>Credit Hours</b>			<b>9</b>
	<b>Total Credit Hours</b>			<b>120</b>

## Certificate in Athletic Coaching

All students pursuing a Certificate in Athletic Coaching must complete the following 15 semester credit hours:

Code	Title	Credit Hours
KIN 3013	Theory of Coaching	3
KIN 3223	Coaching Leadership	3
KIN 4123	Introduction to Sport Psychology	3
KIN 4413	Coaching Athletics	3



## Department of Psychology

The Department of Psychology offers a Bachelor of Arts (B.A.) degree in Psychology and a Minor in Psychology. The Bachelor of Arts 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. It also provides excellent preparation for post-graduate study in a wide range of health professions and for careers in business and industry.

### 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 Department of Psychology offers a Bachelor of Arts in Psychology. Students interested in studying human behavior with a humanities and social science-oriented supporting curriculum would pursue a B.A. degree. The B.A. can successfully prepare students interested in graduate and professional programs that stress a humanities and social science framework (e.g., counseling, social work, educational psychology, school psychology, business, law) as well as students interested in employment in business, social services, or applied 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 for Health, Community and Policy 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 or Honors thesis 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 and Honors thesis 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
<b>Total Credit Hours</b>	<b>42</b>

### 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.

Code	Title	Credit Hours
PSY 1013	Introduction to Psychology	3
PSY 2073	Statistics for Psychology	3

### Degree Requirements

Code	Title	Credit Hours
<b>A. Psychology major courses</b>		
1. Lower-division courses		
a. Introduction to Psychology		
PSY 1013	Introduction to Psychology	3
b. Select three of the following courses:		
PSY 2503	Developmental Psychology	9

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 PSY 1013. 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 (PSY 3403 must be completed with a minimum grade of "C-")	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>B. Electives</b>		<b>45</b>
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.		
<b>Total Credit Hours</b>		<b>78</b>

## 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 or STA 1053	College Algebra with Applications (core) or Algebra for Scientists and Engineers or Basic Statistics	3
PSY 1013	Introduction to Psychology (core and major)	3
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
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 (core)	3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Second Year</b>		
<b>Fall</b>		
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
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
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
<b>Credit Hours</b>		<b>15</b>
<b>Third Year</b>		
<b>Fall</b>		
Free elective		3
Free elective		3
Upper-division PSY elective		3
Upper-division PSY elective		3

Creative Arts (core)	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
Free elective	3
Upper division free elective	3
Upper-division free elective	3
Upper-division PSY elective	3
Upper-division PSY elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Fourth Year</b>	
<b>Fall</b>	
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
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
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
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

Select 6 additional upper-division credit hours of psychology courses. 6  
 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** **21**

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

## Minor in Psychology

All students pursuing a Minor in Psychology must complete 21 semester credit hours.

Code	Title	Credit Hours
<b>A. Required courses</b>		
PSY 1013	Introduction to Psychology (This course may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences.)	3
PSY 2073	Statistics for Psychology (must be completed with a minimum grade of "C-")	3
PSY 3403	Experimental Psychology (must be completed with a minimum grade of "C-")	3
<b>B. Select two of the following:</b>		<b>6</b>
PSY 2503	Developmental Psychology	
PSY 2513	Abnormal Psychology	
PSY 2533	Social Psychology	
PSY 2563	Cognitive Psychology	
<b>C. Upper-division psychology courses</b>		

## Department of Public Administration

The Department of Public Administration offers a Bachelor of Arts in Public Administration and Policy degree which provides the opportunity for the comprehensive study of public administration, a Minor in Civic Engagement, a Minor in Public Administration and Policy, and a Minor in Nonprofit Management. Students completing the Bachelor of Arts in Public Administration and Policy 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 Arts Degree in Public Administration and Policy

A Bachelor of Arts in Public Administration and Policy 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 Arts in Public Administration and Policy 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
<b>Total Credit Hours</b>	<b>42</b>

#### Gateway Course

Students pursuing the Bachelor of Arts in Public Administration and Policy 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.

Code	Title	Credit Hours
PAD 1113	Public Administration and Policy in American Society	

#### Degree Requirements

Code	Title	Credit Hours
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##### A. Core Public Administration & Policy coursework

18 semester credit hours of core Public Administration & Policy coursework:	18
PAD 1113	Public Administration and Policy in American Society
PAD 2013	Introduction to Public Policy
PAD 2073	Foundations of Civic Engagement
PAD 3163	Quantitative Analysis for Public Administration and Policy
PAD 4853	Essential Skills for a Career in Public Service (Research Capstone)
DEM 4963	Social Demography and Public Policy

##### B. Prescribed courses

18 semester credit hours selected from the courses listed below:	18
DEM 4013	Geographic Information Systems for Population Analysis and Policy
GES 3334	Advanced Geographic Information Systems
GES 3314	Introduction to Geographic Information Systems
ECO 2013	Introductory Macroeconomics
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 3063	Public Sector Economics
PAD 3073	Civic Leadership Seminar
PAD 3083	Project Management for the Public Sector
PAD 3113	Managing Nonprofit Organizations
PAD 3133	Politics and Policies of San Antonio and South Texas
PAD 3153	Administrative Law and Policy
URP 3153	Comparative Urban and Regional Development
URP 4123	Sustainable Community Development
URP 4213	Urban Planning and Public Health
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)	
<b>C. Upper-division support work</b>		
18 semester credit hours of upper-division support work, chosen in consultation with an academic advisor		18
<b>D. Free electives</b>		
24 semester hours of free electives (some may need to be upper division in order to meet the 39 hour University requirement)		24
<b>Total Credit Hours</b>		<b>78</b>

### Course Sequence Guide for Bachelor of Arts in Public Administration and Policy Degree

This course sequence guide is designed to assist students in completing their UTSA undergraduate Public Administration and Policy 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 Public Administration and Policy – 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 and Policy in American Society	3
POL 1013	Introduction to American Politics (core)	3
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>15</b>

##### 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 (core)	3
Mathematics (core)		3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>15</b>

##### Second Year

###### Fall

PAD 3163	Quantitative Analysis for Public Administration and Policy	3
Elective		3
Elective		3
Language, Philosophy & Culture (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

###### 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
<b>Credit Hours</b>		<b>15</b>

##### 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
<b>Credit Hours</b>		<b>15</b>

###### Spring

Elective		3
Elective		3
Prescribed course (see degree requirement B)		3
Upper-division support work		3
Upper-division support work		3
<b>Credit Hours</b>		<b>15</b>

##### Fourth Year

###### Fall

Elective		3
Elective		3
Prescribed course (see degree requirement B)		3
Upper-division support work		3
Upper-division support work		3
<b>Credit Hours</b>		<b>15</b>

###### Spring

PAD 4853	Essential Skills for a Career in Public Service (Research Capstone)	3
Elective		3
Elective		3
Prescribed course (see degree requirement B)		3
Upper-division support work		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120</b>



- Minor in Civic Engagement (p. 181)
- Minor in Nonprofit Management (p. 182)
- Minor in Public Administration and Policy (p. 182)

## Minor in Civic Engagement

Through the Minor in Civic Engagement students learn about community challenges and prepare to play a leadership role in affecting social change. In the required courses students actively participate in the local community through service learning projects. The elective courses allow students to explore the diversity of our communities and the systems that affect communities. This interdisciplinary minor is open to all majors in the University.

All students seeking the Minor in Civic Engagement must complete 18 semester credit hours.

Code	Title	Credit Hours
<b>A. Required courses:</b>		<b>6</b>
PAD 2073	Foundations of Civic Engagement	
PAD 3073	Civic Leadership Seminar	
<b>B. Electives:</b>		
Students must complete 12 hours of electives.		12
AAS 3013	Black Communities and Culture	
AAS 3113	Doing Black Studies Research	
AAS 3123	Civil Rights Movement and African American Education	
AAS 3133	African Americans in Higher Education	
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 3733	Political and Legal Anthropology	
ANT 3823	Applied Anthropology	
ANT 3873	Food, Culture, and Society	
ARC 4183	Environmental Systems	
ASC 3013	Air Force Leadership Studies I	
ASC 3023	Air Force Leadership Studies II	
BBL 3033	Mexican Americans in the Southwest	
BBL 3123	Mexican American Culture	
BIO 3283	Principles of Ecology	
BIO 3333	Plants and Society	
BIO 4033	Conservation Biology	
BIO 4053	Wildlife Ecology	
CE 4633	Water and Wastewater Treatment	
COM 3293	Introduction to Health Communication	
COM 3493	Global Health Communication	
COM 3553	Intercultural Communication	
COM 3593	Health Communication Campaigns	
COM 4893	Health Communication Practicum	
CRJ 3213	Managing Criminal Justice Organizations	
CRJ 3533	Community Corrections	
CRJ 3563	Juvenile Justice	
CRJ 3573	Restorative Justice	
CRJ 4403	Race, Ethnicity, and Criminal Justice	

DEM 4963	Social Demography and Public Policy
ECO 3233	Health Economics and Policy
ECO 3253	Economics of Public and Social Issues
ECO 4303	Development Economics
ES 3053	Environmental Remediation
ES 3143	Watershed Processes
ES 3203	Environmental Law
ES 3213	Biology of Flowering Plants
ES 4133	Natural Resource Policy and Administration
ES 4153	Introduction to Sustainability
ES 4163	Renewable Energy
ES 4233	Restoration Ecology
ES 4243	Wildlife Management
GES 3153	Geography of Texas
GES 3213	Cultural Geography
GES 3314	Introduction to Geographic Information Systems
GES 3453	Population Geography
GES 3513	Urban Geography
GES 3533	Geography of Local Economic Activity
GES 3613	Conservation of Resources
GES 3643	Political Geography
GES 3653	Gender and Cities: An Introduction to Feminist Geography
GES 3753	Climate Change
HIS 3493	History of San Antonio
HIS 3623	History of the Civil Rights Movement
HON 3103	Honors Service
HON 3233	Honors Seminar in Arts & Humanities
HON 3263	Honors Professional Development
HON 3401	Honors Cultural Exploration
HON 3403	Honors Cultural Exploration
HON 3513	Archer: Policy-Making Process
HON 3523	Archer: Politics of National Memory
HON 3533	Archer: Advocacy and Politics
HON 4403	Citymester: City Sites
HTH 3003	Survey of Drugs and Health
HTH 3503	Theories of Health Behavior
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
MSC 3013	Training Management and the Warfighting Functions
MSC 3023	Applied Leadership in Small Unit Operations
PAD 2013	Introduction to Public Policy
PAD 3003	Fundraising in Nonprofit Agencies
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 3023	Introduction to Urban Management and Policy
PAD 4933	Internship in Public Administration
PAD 4936	Internship in Public Administration
PAL 3113	Minorities and the Law
PAL 4013	Issues in Law and Society
POL 3183	Women in Politics
POL 3293	Political Movements
POL 3413	Urban Development: Politics Planning, and Power
PSY 3053	Multicultural Psychology
PSY 4103	Social Psychology of Prejudice
SOC 3013	Social Stratification
SOC 3043	Race and Ethnic Relations
SOC 3083	Social Change and Development
SOC 3093	Religion and Society
SOC 3163	Families in Society
SOC 3203	Gerontology
SOC 3223	Population Dynamics and Demographic Techniques
SOC 3263	Latinas in U.S. Society
SOC 3293	Sociology of Gender
SOC 3413	Sociology of the Mexican American Community
SOC 4433	Culture and Society
SOC 4683	Health Disparities
URP 3123	Introduction to Community and Regional Planning and Urban Design
URP 3153	Comparative Urban and Regional Development
URP 4123	Sustainable Community Development
URP 4213	Urban Planning and Public Health
WGSS 4623	Feminist Theories
WGSS 4863	Transnational Feminisms

**Total Credit Hours** **18**

To declare a Minor in Civic Engagement, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult with their academic advisor.

## 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.

Code	Title	Credit Hours
<b>A. Required courses:</b>		<b>6</b>
PAD 3003	Fundraising in Nonprofit Agencies	
PAD 3033	Introduction to Nonprofit Agencies	
<b>B. 12 semester credit hours selected from the courses listed below:</b>		<b>12</b>
PAD 2013	Introduction to Public Policy	
PAD 2073	Foundations of Civic Engagement	
MGT 3013	Introduction to Organization Theory, Behavior, and Management	
PAD 3023	Introduction to Urban Management and Policy	
PAD 3043	Public and Nonprofit Financial Management	
PAD 3053	Urban Economic Development	
PAD 3083	Project Management for the Public Sector	
PAD 3073	Civic Leadership Seminar	
PAD 3113	Managing Nonprofit Organizations	
PAD 3133	Politics and Policies of San Antonio and South Texas	
PAD 3153	Administrative Law and Policy	
MGT 3613	Managing Human Resources	
ENT 4623	Tools and Objectives of the Social Enterprise	
SOC 4683	Health Disparities	
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	
<b>Total Credit Hours</b>		<b>18</b>

Students should not take PAD 4933 Internship in Public Administration, 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 and Policy

The Minor in Public Administration and Policy 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 and Policy 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.

Code	Title	Credit Hours
<b>A. Required courses:</b>		<b>9</b>
PAD 1113	Public Administration and Policy in American Society	
PAD 2013	Introduction to Public Policy	
PAD 2073	Foundations of Civic Engagement	
<b>B. 9 upper-division semester credit hours selected from the courses listed below:</b>		<b>9</b>
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 3063	Public Sector Economics	
PAD 3073	Civic Leadership Seminar	
PAD 3083	Project Management for the Public Sector	
PAD 3113	Managing Nonprofit Organizations	
PAD 3133	Politics and Policies of San Antonio and South Texas	
PAD 3153	Administrative Law and Policy	
PAD 3163	Quantitative Analysis for Public Administration 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)	
HON 3513	Archer: Policy-Making Process	
HON 3533	Archer: Advocacy and Politics	
DEM 4963	Social Demography and Public Policy	
<b>Total Credit Hours</b>		<b>18</b>

To declare a Minor in Public Administration and Policy, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult with their academic advisor.

## Certificate in Public Policy and Data Analysis

This certificate program prepares students to address policy challenges and to lead in data-driven decision-making in the private, public and nonprofit sectors. Sound public policy requires a thorough analysis of the root causes of problems and the drivers of meaningful change. Students in this certificate program will learn to use data to define, understand, and solve problems in our community. Students will be able to effectively communicate and influence decision-making using evidence-based policy

proposals. By learning evaluation techniques, students will be better equipped to improve program and service delivery.

This is an interdisciplinary program administered by the Department of Public Administration. The certificate includes courses currently offered in Public Administration, Criminology and Criminal Justice, Demography, Political Science, Public Health, and Sociology.

This certificate program is open to all majors in the University. Courses taken in the certificate program may be applied to a B.S. or B.A. degree, depending on program requirements and with approval of the undergraduate advisor of record of the degree program. Students not currently enrolled in any UTSA degree program can apply as a non-degree-seeking special student at the undergraduate level to pursue this certificate.

Students pursuing the Certificate in Public Policy and Data Analysis must complete 15 semester credit hours as follows:

Code	Title	Credit Hours
<b>A. Required courses:</b>		<b>6</b>
PAD 2013	Introduction to Public Policy	
PAD 3163	Quantitative Analysis for Public Administration and Policy	
<b>B. Public Policy courses:</b>		<b>3</b>
Select one course from the following list:		
HON 3513	Archer: Policy-Making Process	
HON 3533	Archer: Advocacy and Politics	
PAD 3023	Introduction to Urban Management and Policy	
PAD 3133	Politics and Policies of San Antonio and South Texas	
PAD 3153	Administrative Law and Policy	
POL 3173	Justice and Social Policy	
POL 3373	The Legislative Process	
<b>C. Data Analysis courses:</b>		<b>6</b>
Select two courses from the following list:		
DEM 4013	Geographic Information Systems for Population Analysis and Policy	
DEM 4963	Social Demography and Public Policy	
GES 3314	Introduction to Geographic Information Systems	
GES 3334	Advanced Geographic Information Systems	
HTH 2623	Database Management in Community and Public Health	
SOC 3223	Population Dynamics and Demographic Techniques	
SOC 3373	Qualitative Research Methods	
<b>Total Credit Hours</b>		<b>15</b>

## Department of Public Health

The Department of Public Health offers a Bachelor of Science (B.S.) degree in Public Health, as well as minors in Community Health and Wellness.

The B.S. degree in Public Health with concentrations in Health Promotion and Health Services provides students the opportunity to prepare for health careers in city, county, state and national government health agencies; non-profit organization and other health agencies. The degrees require both academic coursework and practical experience via an internship. Additionally this program prepares students for admission to graduate programs in public health, community health, and health promotion. The Health Services concentration may also allow students to meet prerequisites for health profession programs. Students interested in pursuing a major in public health or one of two minors offered (community health and wellness) are required to consult with their academic advisor.

## Department Honors

The Department of Public Health 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.

## Bachelor of Science Degree in Public Health

The Bachelor of Science (B.S.) degree in Public Health is offered for students who are interested in gaining knowledge and developing skills needed in a variety of health and public health related areas, including environmental health, administration, epidemiology, and health behavior. The degree requirements consist of the University Core Curriculum, major core requirements, elective courses in areas of interest, a foreign language, and an internship. The major core introduces students to the fundamental subjects and the essential knowledge necessary for working in any field related to public health. The degree program is offered in two concentrations: (1) Health Services and (2) Health Promotion.

The degree program prepares students for health 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. For students in the Health Services concentration, it can provide 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 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.

## 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 public health activities carried out in a health-oriented organization or research center. 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 met the following criteria:

- Have a minimum grade point average (GPA) of 2.5.
- Have completed HTH 2413, HTH 3503, HTH 3663, and HTH 3713.
- Are within 30 credits of completing the BS in Public Health degree.

Additionally, students must follow the guidelines outlined in the internship manual for the Department of Public Health. Students are responsible for reviewing the Department of Public Health's internship website for specific processes the semester before they plan to complete 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.

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 materials for the internship are 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 materials, available from the internship coordinator, with written documentation. Prior work experience is defined as a minimum of one year of public health work experience. Written documentation submitted with the materials includes: 1) a letter from the student detailing the work experience, how it fits into one's degree plan and career goals; 2) the student's resume; and 3) letter(s) from work supervisor(s) verifying employment and stating the extent of their job responsibilities and the relationship to the degree. Work appeals must be submitted by the deadline specified for that semester on the Department of Public Health's internship website. The internship coordinator will make a recommendation to the Department Chair regarding acceptance of the work appeal. All decisions by the Department Chair are final.

## Core Curriculum requirements (42 semester credit hours)

Students seeking the B.S. degree in Public Health must fulfill University Core Curriculum requirements in the same manner as other students.

The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree.

STA 1053 may be used to satisfy the core requirement in Mathematics as well as a major requirement. BIO 1203 and BIO 1223 OR BIO 1233 and BIO 1243 may be used to satisfy the core requirement in Life and Physical Sciences as well as major requirements. HTH 2413 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
<b>Total Credit Hours</b>	<b>42</b>

### Gateway Courses

Students pursuing the B.S. degree in Public 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 their major.

Code	Title	Credit Hours
HTH 2413	Introduction to Community and Public Health	3
HTH 3503	Theories of Health Behavior	3

### Degree Requirements

All candidates for the B.S. degree in Public Health must complete the following 90 semester credit hours, which includes 12 -14 semester credit hours of Core Curriculum requirements.

Code	Title	Credit Hours
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#### A. Public Health Foundation courses

All candidates for this degree must complete the following 42 semester credit hours of coursework:

HTH 2413	Introduction to Community and Public Health	3
HTH 2623	Database Management in Community and Public Health	3
HTH 2713	Human Disease Etiology, Prevention and Treatment	3
HTH 3503	Theories of Health Behavior	3
HTH 3663	Program Planning and Evaluation	3
HTH 3713	Effective Messaging in Public Health	3

or COM 3293	Introduction to Health Communication	
HTH 4043	Global Health	3
HTH 4053	Health Care System	3
HTH 4503	Epidemiology	3
HTH 4543	Environmental Health and Safety	3
HTH 4563	Health Policy, Law and Ethics	3
SOC 3223	Population Dynamics and Demographic Techniques	3
SOC 4683	Health Disparities	3
STA 1053	Basic Statistics	3

**B. Public Health Concentrations. All candidates for the degree in Public Health must complete the requirements for one of the following concentrations:**

#### Health Services Concentration

All candidates for the degree in Public Health with a Health Services Concentration must complete the following 18 semester credit hours of coursework:

BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors	
BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors	
HTH 2601	Field-Based Skills in Community Health and Preventive Services	

Select at least 9 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 3413	General Physiology	
BIO 3422	Physiology Laboratory	
BIO 3433	Neurobiology	
BIO 3713	Microbiology	
BIO 3722	Microbiology Laboratory	
BIO 4813	Brain and Behavior	
GES 3443	Medical Geography	
SOC 3213	Medical Sociology	

All candidates for the degree in Public Health with a Health Promotion Concentration must complete the following 18 semester credit hours of coursework:

#### Health Promotion Concentration

BIO 1233	Contemporary Biology I	
BIO 1243	Contemporary Biology II	
HTH 3513	Community Health	

Select at least 9 semester credit hours from the following list of courses:

HTH 3043	Principles of Weight Management	
HTH 3303	Physical Activity and Health	
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 4023	Exercise Psychology	
MGT 3013	Introduction to Organization Theory, Behavior, and Management	
PSY 4253	Psychology of Health	
SOC 3213	Medical Sociology	

**C. Advanced Public Health Requirement**

All candidates for this degree must complete 6 semester credit hours of an internship in public health and a 1 semester credit hour Capstone course.

HTH 4936	Internship in Health	6
HTH 4921	Capstone for Public Health	1

**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 17 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. 17

**Total Credit Hours 90**

**Course Sequence Guides for B.S. Degree in Public Health**

These course sequence guides are designed to assist students in completing the requirements for their UTSA undergraduate Public Health degree. *These are merely guides and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within these guides 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 Services – Four-Year Academic Plan**

**First Year**

		Credit Hours
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
HTH 2413	Introduction to Community and Public Health (core and major)	3
STA 1053	Basic Statistics (core and major)	3
WRC 1013	Freshman Composition I (core)	3
Language, Philosophy & Culture (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors (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 (core)	3

HTH 2713	Human Disease Etiology, Prevention and Treatment	3
Free elective		3

**Credit Hours 16**

**Second Year**

**Fall**

BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors (core and major)	4
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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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HTH 3503	Theories of Health Behavior	3
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HTH 2623	Database Management in Community and Public Health	3
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Free elective		3
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**Credit Hours 16**

**Spring**

HTH 2601	Field-Based Skills in Community Health and Preventive Services	1
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HTH 3663	Program Planning and Evaluation	3
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HTH 3713	Effective Messaging in Public Health	3
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SOC 3223	Population Dynamics and Demographic Techniques	3
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Component Area Option (core)		3
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Creative Arts (core)		3
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**Credit Hours 16**

**Third Year**

**Fall**

POL 1013	Introduction to American Politics (core)	3
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Free elective		3
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HTH 4043	Global Health	3
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Free elective		3
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Foreign language (semester I)		3
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**Credit Hours 15**

**Spring**

HTH 4503	Epidemiology	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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HTH 4053	Health Care System	3
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HTH 4563	Health Policy, Law and Ethics	3
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Foreign language (semester II)		3
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**Credit Hours 15**

**Fourth Year**

**Fall**

HTH 4543	Environmental Health and Safety	3
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SOC 4683	Health Disparities	3
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Concentration course (upper-division)		3
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Concentration course		3
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Concentration course		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
HTH 4936	Internship in Health	6
HTH 4921	Capstone for Public Health	1
Free elective		3
Free elective (to meet 120 hour minimum)		2
<b>Credit Hours</b>		<b>12</b>
<b>Total Credit Hours</b>		<b>120</b>

### B.S. in Public Health, Health Promotion Concentration – Four-Year Academic Plan

#### First Year

<b>Fall</b>		<b>Credit Hours</b>
AIS 1203	Academic Inquiry and Scholarship (core)	3
HTH 2413	Introduction to Community and Public Health (core and major)	3
STA 1053	Basic Statistics (core and major)	3
WRC 1013	Freshman Composition I (core)	3
Language, Philosophy & Culture (core)		3
<b>Credit Hours</b>		<b>15</b>

#### Spring

BIO 1233	Contemporary Biology I (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 1023	Freshman Composition II (core)	3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

#### Second Year

<b>Fall</b>		
BIO 1243	Contemporary Biology II (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
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
<b>Credit Hours</b>		<b>15</b>

#### Spring

HTH 2623	Database Management in Community and Public Health	3
HTH 3663	Program Planning and Evaluation	3

SOC 3223	Population Dynamics and Demographic Techniques	3
HTH 2713	Human Disease Etiology, Prevention and Treatment	3
Component Area Option (core)		3

**Credit Hours** **15**

#### Third Year

##### Fall

HTH 3713	Effective Messaging in Public Health	3
HTH 4043	Global Health	3
HTH 3513	Community Health	3
Free elective		3
Foreign language (semester I)		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

HTH 4503	Epidemiology	3
HTH 4543	Environmental Health and Safety	3
HTH 4053	Health Care System	3
Free elective		3
Foreign language (semester II)		3
<b>Credit Hours</b>		<b>15</b>

#### Fourth Year

##### Fall

HTH 4563	Health Policy, Law and Ethics	3
SOC 4683	Health Disparities	3
Concentration course (upper division)		3
Concentration course		3
Concentration course		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

HTH 4936	Internship in Health	6
HTH 4921	Capstone for Public Health	1
Free elective		3
Free elective		3
Free elective (to meet 120 hour minimum)		2
<b>Credit Hours</b>		<b>15</b>

**Total Credit Hours** **120**

## Accelerated 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 Accelerated Master of Public Health (MPH) 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 Accelerated MPH Program between The University of Texas at San Antonio (UTSA) and UTHealth Houston - School of Public Health (UTHealth Houston 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 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 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 Accelerated MPH program during their third full year of study. Students who are accepted into the Accelerated MPH 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.

- Minor in Community Health (p. 188)
- Minor in Wellness (p. 188)

### Minor in Community Health

All students pursuing the Minor in Community Health must complete the following 18 semester credit hours:

Code	Title	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
One additional course selected from the following:		3
HTH 3003	Survey of Drugs and Health	
HTH 3013	Survey of Human Nutrition	
HTH 3023	Survey of Human Sexuality	
<b>Total Credit Hours</b>		<b>18</b>

### Minor in Wellness

All students pursuing the Minor in Wellness must complete the following 18 semester credit hours:

Code	Title	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
Two additional courses selected from the following:		6
KIN 2123	Fitness and Wellness Concepts	
HTH 2513	Personal Health	
HTH 3043	Principles of Weight Management	
HTH 3543	Growth and Development	
HTH 4513	Consumer Health	
<b>Total Credit Hours</b>		<b>18</b>

To declare a Minor in Community Health or Wellness or to obtain advice, students should consult their academic advisor.

## Department of Social Work

The Department of Social Work offers the Bachelor of Social Work degree, preparing and developing generalist social workers for culturally competent, transformative practice that promotes equity, social justice and well-being within a local-global context.

### Bachelor of Social Work

A Bachelor of Social Work (BSW) degree will equip students for immediate professional practice and effective service delivery with individuals, families, groups, organizations, and communities in a wide range of health and human service practice settings. Once accreditation for the program is finalized, students will be eligible to apply for state licensure and be prepared to pursue graduate social work (MSW) studies.

Any admitted UTSA students may select social work as their major.

### BSW Practice Sequence Application Requirements

Students who have successfully completed at least 42 hours of coursework, including the majority of their Texas Core Curriculum, may apply for formal admission to the BSW Upper Level Practice Sequence. Only students formally admitted to the BSW Practice Sequence will be eligible to continue on to take upper-division Social Work Core Curriculum courses.

To be formally admitted to the BSW Practice Sequence, students must, at minimum, meet the following criteria:

- Complete at least 42 semester credit hours of coursework, including the majority of the Texas Core Curriculum
- Attend a BSW Program Information Session
- Submit a completed application for admission to the UTSA BSW program
- Have an overall cumulative grade point average (GPA) of 2.5 or higher
- Complete SWK 1013 with a "C-" or better
- Complete SWK 2013 with a "C-" or better either prior to admission or during the student's first semester in the BSW Program
- Complete STA 1053 Basic Statistics with a "C-" or better
- Submit two Professional or Academic References

- Submit a Résumé
- Submit a 2–4-page Application Essay

Applications will be evaluated by the BSW Committee using a standard evaluation rubric to determine admission status. Students are notified of their admissions decision via email from the BSW Program Director or their designee. A social work major not accepted to the formal BSW Practice Sequence may apply a second time at the next available opportunity. If they are not accepted after the second attempt, they will be required to change their major.

## Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor's of Social Work 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, students may need to take an additional course to meet the minimum number of semester credit hours required for this degree.

STA 1053 Basic Statistics should be used to satisfy the core requirement in Mathematics.

### 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
<b>Total Credit Hours</b>	<b>42</b>

## Gateway Course

Students pursuing the Bachelor of Social Work 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 their major.

Code	Title	Credit Hours
SWK 1013	Introduction to Social Work	3

## Degree Requirements

Code	Title	Credit Hours
<b>A. Required courses for Social Work Core</b>		
<b>Introductory Course</b>		<b>3</b>
SWK 1013	Introduction to Social Work	
<b>Diversity and Social Justice</b>		<b>3</b>
SWK 2013	Diversity and Social Justice in San Antonio and Beyond	
<b>Policy</b>		<b>3</b>

SWK 2103	Social Welfare Policy Analysis	
<b>Human Behavior</b>		<b>6</b>
SWK 3013	Human Behavior and the Social Environment I	
SWK 3023	Human Behavior and the Social Environment II	
<b>Research</b>		<b>3</b>
SWK 3203	Applied Social Work Research	
<b>Practice Courses</b>		<b>15</b>
SWK 3403	Ethics and Professionalism in Social Work	
SWL 3413	Generalist Social Work Practice	
SWK 3423	Practice Skills: Interviewing and Documentation	
SWK 4103	Methods I	
SWK 4113	Methods II	
<b>Integrative Practice Seminar courses concurrent with practicum placement</b>		<b>6</b>
SWK 4203	Integrative Field Seminar I	
SWK 4213	Integrative Field Seminar II	
<b>Field Practicum</b>		<b>6</b>
SWK 4303	Field Practicum I	
SWK 4313	Field Practicum II	
<b>B. Support Electives</b>		
<b>1. SWK electives</b>		<b>6</b>
Select two SWK elective courses: At least 3 of 6 SCH must be upper division.		
<b>2. Cultural competence, diversity, and anti-racism electives</b>		<b>6</b>
Select two courses from the list below:		
AAS 2113	African American Culture, Leadership and Social Issues	
AAS 4013	Topics in African American Studies	
ANT 2053	Introduction to Cultural Anthropology	
ANT 3203	Native North Americans	
BBL 2003	Language, Culture, and Society	
CRJ 4403	Race, Ethnicity, and Criminal Justice	
CRJ 4463	Gender and Crime	
HUM 2093	World Religions	
MAS 2013	Introduction to Chicano(a) Studies	
MAS 2033	Multiculturalism in the Southwest	
MHU 3013	Inequality, Intersectionality, and Healthcare	
PSY 3053	Multicultural Psychology	
REGS 2003	Intersectional Approaches to Social Justice	
SOC 3043	Race and Ethnic Relations	
SOC 3203	Gerontology	
SOC 3413	Sociology of the Mexican American Community	
WGSS 2013	Introduction to Women's Studies	
WGSS 2023	Introduction to LGBTQ Studies	
Additional courses not listed may be accepted with advisor approval.		
<b>3. Local-Global thinking electives</b>		<b>6</b>
Select two courses from the list below:		
GES 3003	Global Sustainability	

GES 3663	Urban Sustainability in Global Context
GLA 1013	US in Global Context
GLA 2603	Introduction to Global Politics
GLA 3043	International Human Rights
HTH 4043	Global Health
LAS 2013	Latin American Foundations
PAD 2073	Foundations of Civic Engagement
SPN 3053	Spanish for Healthcare Professionals
TIS 3003	Introduction to Translation and Interpreting
WGSS 4863	Transnational Feminisms
Any modern language course at the 2000 level and above.	
Additional courses not listed may be accepted with advisor approval.	
Study abroad opportunities are encouraged, with advisor approval.	
<b>4. Transformative thinking electives</b>	<b>6</b>
Select two courses from the list below:	
ANT 3803	Media, Power, and Public Culture
ANT 3823	Applied Anthropology
CRJ 2153	Criminological Theory
CRJ 3573	Restorative Justice
CRJ 3643	Pretrial Diversion and Problem-Solving Courts
COM 3293	Introduction to Health Communication
COM 3893	Organizational Communication
EDL 3003	Introduction to Leadership
HTH 2623	Database Management in Community and Public Health
MAS 4013	Si se puede! Latino Leadership, Activism and Organizing
NDT 3343	Nutrition in the Life Span
PAD 3073	Civic Leadership Seminar
PAD 4853	Essential Skills for a Career in Public Service (Research Capstone)
PHI 1043	Critical Thinking
PHI 2123	Contemporary Moral Issues
PHI 3213	Ethics
PSY 2533	Social Psychology
SOC 3083	Social Change and Development
Additional courses not listed may be accepted with advisor approval.	
<b>C. Free electives in related disciplines</b>	<b>9</b>
<b>Total Credit Hours</b>	<b>78</b>

## Course Sequence Guides for Bachelor of Social Work

These course sequence guides are designed to assist students in completing the requirements for their UTSA undergraduate Social Work degree. *These are merely guides. Students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within these guides 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 Social Work – Four-Year Academic Plan

First Year		Credit Hours
<b>Fall</b>		
AIS 1273	AIS: Social Sciences and Public Policy (core)	3
STA 1053	Basic Statistics (core)	3
WRC 1013	Freshman Composition I (core)	3
American History core		3
Life & Physical Sciences core		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
SWK 1013	Introduction to Social Work	3
WRC 1023	Freshman Composition II (core)	3
Government-Political Science core		3
Life & Physical Sciences core		3
Social & Behavioral Sciences core		3
<b>Credit Hours</b>		<b>15</b>
<b>Second Year</b>		
<b>Fall</b>		
SWK 2013	Diversity and Social Justice in San Antonio and Beyond	3
American History core		3
Component Area Option core		3
Elective		3
Elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
SWK 2103	Social Welfare Policy Analysis	3
Creative Arts core		3
Government-Political Science core		3
Language, Philosophy, & Culture core		3
Elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Third Year</b>		
<b>Fall</b>		
SWK 3013	Human Behavior and the Social Environment I	3
SWK 3403	Ethics and Professionalism in Social Work	3
SWK 3413	Generalist Social Work Practice	3
Elective		3
Elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
SWK 3023	Human Behavior and the Social Environment II	3
SWK 3203	Applied Social Work Research	3
SWK 3423	Practice Skills: Interviewing and Documentation	3
Elective		3
Elective		3
<b>Credit Hours</b>		<b>15</b>



**Fourth Year****Fall**

SWK 4103	Methods I	3
SWK 4203	Integrative Field Seminar I	3
SWK 4303	Field Practicum I	3
Elective		3
Elective		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

SWK 4113	Methods II	3
SWK 4213	Integrative Field Seminar II	3
SWK 4313	Field Practicum II	3
Elective		3
Elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120</b>

## Department of Sociology and Demography

The Department of Sociology and Demography offers a Bachelor of Arts degree in Sociology and a Bachelor of Science degree in Health, Aging and Society. The Department also offers a Minor in Sociology and a Minor in Health, Aging and Society. At least 42 semester credit hours of sociology coursework are required to fulfill a Sociology major. The 42-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. At least 36 semester credit hours of Health, Aging, and Society coursework are required to fulfill the Health, Aging, and Society (HAS) major. The 36-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.

### Capstone Experience

The Department Sociology and Demography encourages its students to participate in an integrative capstone experience during their Junior or Senior year. These experiences might include the Senior Seminar capstone course, an internship, an Honor's project, or other undergraduate research opportunity. The Senior Seminar is a hands-on research-based course in which students work individually or in groups on a semester-long research project. A sociology internship entails a supervised experience, usually within selected organizations in the San Antonio area. The majors are asked to find their internship placements, which are then approved by the Sociology Department internship coordinator. Further information can be obtained from the internship coordinator.

### Department Honors

The Department of Sociology and Demography 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 and Demography 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. 191)
- B.S. degree in Health, Aging and Society (p. 193)

### 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
<b>Total Credit Hours</b>	<b>42</b>

### 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.

Code	Title	Credit Hours
SOC 1013	Introduction to Sociology	

### Degree Requirements

Code	Title	Credit Hours
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#### 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 30 additional semester credit hours of Sociology electives as approved by the student's advisor, at least 18 semester credit hours of which must be upper-division. Students are encouraged to take a broad variety of courses.

#### B. Electives

Select 36 semester credit hours of electives; 12 hours in upper-division courses.

**Total Credit Hours** **78**

### 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		Credit Hours
<b>Fall</b>		
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 (core)	3
Mathematics core		3
<b>Credit Hours</b>		<b>15</b>

<b>Spring</b>		
WRC 1023	Freshman Composition II (core)	3
American History (HIS) core		3
Social and Behavioral Science core		3
Free elective		3
Life & Physical Sciences core		3
<b>Credit Hours</b>		<b>15</b>

<b>Second Year</b>		
<b>Fall</b>		
SOC 3353	Sociological Theory	3
Creative Arts core		3
Component Area Option core		3
Life & Physical Sciences core		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

<b>Spring</b>		
SOC 3323	Introduction to Social Research	3
Free elective		3
Free elective		3
Free elective		3
Language, Philosophy, & Culture core		3
<b>Credit Hours</b>		<b>15</b>

**Third Year****Fall**

POL 1013	Introduction to American Politics (core)	3
SOC 3373 or SOC 3393	Qualitative Research Methods or Quantitative Research Methods	3
SOC elective		3
SOC elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Upper-division free elective		3
Upper-division SOC elective		3
Upper-division SOC elective		3
Upper-division SOC elective		3
<b>Credit Hours</b>		<b>15</b>

**Fourth Year****Fall**

Upper-division SOC elective		3
Upper-division SOC elective		3
Upper-division free elective		3
Upper-division free elective		3
Free Elective		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

Free elective		3
Upper-division free elective		3
Upper-division SOC elective		3
SOC elective		3
SOC elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120</b>

## Bachelor of Science Degree in Health, Aging and Society

The minimum number of semester credit hours required for the Bachelors of Science (B.S.) degree in Health, Aging, and Society, 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 36 semester credit hours of Health, Aging, and Society coursework are required to fulfill the Health, Aging, and Society (HAS) major. The 36-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.

The HAS program of study has four core areas. Foundational courses introduce students to the health professions and requires coursework in public administration and business management to prepare students for careers like medical and health services managers, social and community service managers, and human resources managers. The Data Analytics area introduces students to methods of social research and quantitative/

qualitative data analysis to train students to value and understand the processes of data collection and analysis. The Interdisciplinary Perspectives area introduces students to medical sociology, sociological social epidemiology, and the sociology of aging and the life course and emphasizes the social, cultural, institutional, and structural dimensions health, health care, and aging. The fourth core area allows students to choose elective courses.

### Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. degree in Health, Aging and Society 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

#### 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
<b>Total Credit Hours</b>	<b>42</b>

### Degree Requirements

Code	Title	Credit Hours
<b>A. HAS Foundation Courses</b>		
All Candidates for this degree must complete the following 24 semester credit hours of coursework		24

SOC 2033	Introduction to Health and Social Services Professions	
SOC 3203	Gerontology	
SOC 3213	Medical Sociology	
SOC 3323	Introduction to Social Research	
SOC 3443	Health in Adolescence and the Transition to Adulthood	
SOC 4683	Health Disparities	
MGT 3013	Introduction to Organization Theory, Behavior, and Management	
PAD 1113	Public Administration and Policy in American Society	

#### B. Data Analytics

Select at least 3 semester credit hours from the following list of courses:		3
HTH 2623	Database Management in Community and Public Health	
SOC 3373	Qualitative Research Methods	
SOC 3393	Quantitative Research Methods	

STA 1053	Basic Statistics
<b>C. Interdisciplinary Perspectives</b>	
Select at least 9 semester credit hours from the following list of courses:	9
ANT 3523	Medical Anthropology
ANT 3563	Anthropology of Complementary and Alternative Medicine
ANT 3883	Death and Dying
ANT 4413	Genes, Health, and Ancestry
COM 3293	Introduction to Health Communication
ECO 3233	Health Economics and Policy
GES 3443	Medical Geography
HTH 2413	Introduction to Community and Public Health
HTH 3003	Survey of Drugs and Health
HTH 3023	Survey of Human Sexuality
HTH 3513	Community Health
HTH 3553	Emotional Wellness
HTH 4043	Global Health
HTH 4053	Health Care System
HTH 4543	Environmental Health and Safety
MGT 3023	Understanding People and Organizations
MGT 4103	Introduction to Healthcare Management
PAD 2013	Introduction to Public Policy
PAD 3033	Introduction to Nonprofit Agencies
PSY 2503	Developmental Psychology
PSY 4253	Psychology of Health
SOC 2013	Social Problems
SOC 2023	Social Context of Drug Use
SOC 3193	The Sociology of Work and Occupations
SOC 3223	Population Dynamics and Demographic Techniques
SOC 3283	Poverty
SOC 3553	Health Care Fraud and Compliance Investigation
SOC 4023	Violence and Society
SOC 4133	Religion, Spirituality, and Health
SOC 4933	Internship in Sociology
SOC 4936	Internship in Sociology

**D. Free Electives**  
 Candidates must complete 42 semester credit hours of electives. 42  
 Depending on the courses taken under areas B and C, 9-21 credit hours must be at the upper-division level. It is highly encouraged that students complete a minimum of 18 semester credit hours within HCAP disciplines.

**Total Credit Hours** 78

### Course Sequence Guide for B.A. Degree in Health, Aging and Society

This course sequence guide is designed to assist students in completing their UTSA undergraduate Health, Aging and Society 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 Health, Aging and Society– Four-Year Academic Plan

<b>First Year</b>		<b>Credit Hours</b>
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
WRC 1013	Freshman Composition I (core)	3
Mathematics core		3
American History (HIS) core		3
Social and Behavioral Science core		3
<b>Credit Hours</b>		<b>15</b>

<b>Spring</b>		
WRC 1023	Freshman Composition II (core)	3
American History (HIS) core		3
Life & Physical Sciences core		3
Component Area Option core		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

<b>Second Year</b>		
<b>Fall</b>		
SOC 3323	Introduction to Social Research	3
Life & Physical Sciences core		3
Language, Philosophy & Culture core		3
Free Elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

<b>Spring</b>		
SOC 3213	Medical Sociology	3
PAD 1113	Public Administration and Policy in American Society	3
POL 1013	Introduction to American Politics (core)	3
Creative Arts core		3
Data Analytics Area (see section B)		3
<b>Credit Hours</b>		<b>15</b>

<b>Third Year</b>		
<b>Fall</b>		
MGT 3013	Introduction to Organization Theory, Behavior, and Management	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Interdisciplinary Perspective Area course (see section C)		3
Free elective		3
Free Elective		3
<b>Credit Hours</b>		<b>15</b>

<b>Spring</b>		
SOC 3203	Gerontology	3
Interdisciplinary Perspective Area course (see section C)		3
Free Elective		3
Free Elective		3

Free Elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Fall</b>		
SOC 2033	Introduction to Health and Social Services Professions	3
SOC 3443	Health in Adolescence and the Transition to Adulthood	3
Interdisciplinary Perspective Area Course (see section C)		3
Free Elective		3
Free Elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
SOC 4683	Health Disparities	3
Free elective		3
Upper-division free elective		3
Upper-division free elective		3
Upper-division free elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120</b>

- Minor in Sociology (p. 195)
- Minor in Health, Aging and Society (p. 195)

## 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.

Code	Title	Credit Hours
<b>A. Required courses</b>		
SOC 1013	Introduction to Sociology	3
SOC 3323	Introduction to Social Research	3
SOC 3353	Sociological Theory	3
<b>B. Electives</b>		
Select 12 semester credit hours of Sociology electives		12
<b>Total Credit Hours</b>		<b>21</b>

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

## Minor in Health, Aging and Society

The Minor in Health, Aging and Society (HAS) prepares students and provides an attractive credential for graduate school and numerous career pathways. All students pursuing a HAS minor must complete 21 semester credit hours.

Code	Title	Credit Hours
<b>A. Required courses</b>		
SOC 3203	Gerontology	3
SOC 3213	Medical Sociology	3
SOC 4683	Health Disparities	3

SOC 3443	Health in Adolescence and the Transition to Adulthood	3
SOC 2033	Introduction to Health and Social Services Professions	3
SOC 3323	Introduction to Social Research	3
<b>B. Elective (select one)</b>		<b>3</b>
SOC 3373	Qualitative Research Methods	
SOC 3393	Quantitative Research Methods	
<b>Total Credit Hours</b>		<b>21</b>

To declare a Minor in Health, Aging and Society, obtain advice, or seek approval of substitutions for course requirements, students should consult their academic advisor.



# 8. COLLEGE OF LIBERAL AND FINE ARTS

## Vision Statement

UTSA's College of Liberal and Fine Arts will become an internationally recognized college 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 9 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 18 major degree programs, 33 minors, and two certificate programs. 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.

## 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 three 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; and the Pre-Advanced Practice Provider Concentration.

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
<b>Total Credit Hours</b>	<b>42</b>

## 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

Code	Title	Credit Hours
<b>A. Required courses in science and mathematics</b>		<b>47</b>
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors (satisfies one of the Life and Physical Sciences Core Curriculum requirements)	
BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors (satisfies one of the Life and Physical Sciences Core Curriculum requirements)	
BIO 2313	Genetics	
BIO 3513	Biochemistry	
BIO 3713 or BIO 3813	Microbiology 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)	
or PSY 2073	Statistics for Psychology	
<b>B. Required courses in medical humanities</b>		<b>6</b>
MHU 2013	Introduction to Medical Humanities	
MHU 4813	Seminar in Medical Humanities	
<b>C. Social and behavioral sciences electives</b>		
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:		15
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 3563	Anthropology of Complementary and Alternative Medicine	
ANT 3883	Death and Dying	
ANT 4413	Genes, Health, and Ancestry	
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 3683	Behavior Analytic Assessment and Evaluation	
EDP 3693	Behavior Analytic Intervention and Treatment	
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)	
HTH 4043	Global Health	
HTH 4053	Health Care System	
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 2503	Developmental Psychology	
PSY 3023	Social Psychology of Small Groups	
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 2023	Social Context of Drug Use (may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)	
SOC 3203	Gerontology	
SOC 3213	Medical Sociology	
SOC 4683	Health Disparities	
<b>D. Arts and humanities electives</b>		
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:		15
AHC 1113	Art History I (may be used to satisfy the Core Curriculum requirement in Creative Arts)	
AHC 1123	Art History II (may be used to satisfy the Core Curriculum requirement in Creative Arts)	
AHC 4333	Topics in Art History and Criticism	
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 2043	The Greek and Latin Roots of Scientific Terms	
CLA 3123	Cultural Issues in Mediterranean Antiquity	
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	
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 3333	Gender, Sexuality, and Film
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 3083	Philosophy of Mind
PHI 3203	Biomedical Ethics
PHI 3213	Ethics
POL 3303	Race and American Politics
SOC 3043	Race and Ethnic Relations
SPN 3053	Spanish for Healthcare Professionals
TIS 3003	Introduction to Translation and Interpreting
TIS 3013	Translation and Interpreting for the Language Specialist
TIS 3033	Interpreting in Medical Settings
TIS 3043	Advanced Practice in Healthcare Interpreting

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

**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**

Code	Title	Credit Hours
<b>A. Required courses in science and mathematics</b>		<b>25</b>
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors (satisfies one of the Life and Physical Sciences Core Curriculum requirements)	
BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors (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)	
or PSY 2073	Statistics for Psychology	
<b>B. Required courses in medical humanities</b>		<b>6</b>
MHU 2013	Introduction to Medical Humanities	
MHU 4813	Seminar in Medical Humanities	
<b>C. Social and behavioral sciences electives</b>		<b>21</b>
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 3563	Anthropology of Complementary and Alternative Medicine	
ANT 3883	Death and Dying	
ANT 4413	Genes, Health, and Ancestry	
BIO 1033	Drugs and Society (may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)	
EDP 3683	Behavior Analytic Assessment and Evaluation	
EDP 3693	Behavior Analytic Intervention and Treatment	
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)
HTH 4043	Global Health
HTH 4053	Health Care System
PSY 1013	Introduction to Psychology (may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)
PSY 2503	Developmental Psychology
PSY 3023	Social Psychology of Small Groups
PSY 3113	Motivation and Emotion
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 2023	Social Context of Drug Use (may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)
SOC 3203	Gerontology
SOC 3213	Medical Sociology
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	Art History I (may be used to satisfy the Core Curriculum requirement in Creative Arts)
AHC 1123	Art History II (may be used to satisfy the Core Curriculum requirement in Creative Arts)
AHC 4333	Topics in Art History and Criticism
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 2043	The Greek and Latin Roots of Scientific Terms
CLA 3123	Cultural Issues in Mediterranean Antiquity
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
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
HUM 3333	Gender, Sexuality, and Film
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 3083	Philosophy of Mind
PHI 3203	Biomedical Ethics
PHI 3213	Ethics
PHI 3223	Approaches to Knowledge and Reality
PHI 3033	Philosophy of Science
POL 3303	Race and American Politics
SOC 3043	Race and Ethnic Relations
SPN 3053	Spanish for Healthcare Professionals
TIS 3003	Introduction to Translation and Interpreting
TIS 3013	Translation and Interpreting for the Language Specialist
TIS 3033	Interpreting in Medical Settings
TIS 3043	Advanced Practice in Healthcare Interpreting

**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.

## Bachelor of Arts Degree in Medical Humanities with a Pre-Advanced Practice Provider 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**

Code	Title	Credit Hours
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**A. Required courses in science and mathematics 12-13**

BIO 1233	Contemporary Biology I (either course satisfies one of the Life and Physical Sciences Core Curriculum requirements)	
or BIO 1203	Biosciences I for Science Majors	
STA 1053	Basic Statistics (may be used to satisfy the Core Curriculum requirement in Mathematics)	
MHU 2013	Introduction to Medical Humanities	
MHU 4813	Seminar in Medical Humanities	

**B. Science and math electives 24**

24 semester credit hours chosen from the following:

BIO 1053 & BIO 1061	Introductory Microbiology and Introductory Microbiology Laboratory	
BIO 1203	Biosciences I for Science Majors	
BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors (satisfies one of the Life and Physical Sciences Core Curriculum requirements)	
BIO 2043	Nutrition	
BIO 2053 & BIO 2051	Human Anatomy and Physiology I and Human Anatomy and Physiology Laboratory I	
BIO 2063 & BIO 2061	Human Anatomy and Physiology II and Human Anatomy and Physiology Laboratory II	
BIO 2313	Genetics	
CHE 1004	Chemistry for Allied Health Sciences	
CHE 1014	Elementary Organic and Biochemistry	
CHE 1073	Basic Chemistry	
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	
MAT 1023	College Algebra with Applications	
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	

Some of the courses listed in this section require other courses in this section as prerequisites.

**C. Social and behavioral sciences electives 18**

18 semester credit hours, 12 of which must be upper-division, chosen from the following:

ANT 2033	Introduction to Biological Anthropology	
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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 3563	Anthropology of Complementary and Alternative Medicine	
ANT 3883	Death and Dying	
BIO 1033	Drugs and Society (maybe used to satisfy the Core Curriculum requirement in Social and Behavior Sciences)	
EDP 3673	Introduction to Behavior Analysis	
EDP 4683	Advanced Behavior Analysis	
GES 3443	Medical Geography	
HTH 2413	Introduction to Community and Public Health (maybe 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)	
HTH 4043	Global Health	
HTH 4053	Health Care System	
PSY 1013	Introduction to Psychology (may be used to satisfy the Core Curriculum requirement Social and Behavioral Sciences)	
PSY 2073	Statistics for Psychology	
PSY 2503	Developmental Psychology	
PSY 3023	Social Psychology of Small Groups	
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 2023	Social Context of Drug Use (may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences)	
SOC 3203	Gerontology	
SOC 3213	Medical Sociology	
SOC 4683	Health Disparities	
<b>D. Arts and humanities electives 18</b>		
18 semester credit hours, 12 of which must be upper-division, chosen from the following:		
AHC 1113	Art History I (may be used to satisfy the Core Curriculum requirement in Creative Arts)	
AHC 1123	Art History II (may be used to satisfy the Core Curriculum requirement in Creative Arts)	
AHC 4333	Topics in Art History and Criticism	



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 2043	The Greek and Latin Roots of Scientific Terms
CLA 3123	Cultural Issues in Mediterranean Antiquity
COM 3293	Introduction to Health Communication
COM 3383	Interpersonal Communication
COM 3493	Global Health Communication
COM 3593	Health Communication Campaigns
COM 3693	Interpersonal Health Communication
COM 4893	Health Communication Practicum
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
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 3333	Gender, Sexuality, and Film
MUS 2273	Introduction to Music and Art Nonprofit Organizations
PHI 1043	Critical Thinking (may be used to satisfy the Core Curriculum requirement in Language, Philosophy and Culture)
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 3083	Philosophy of Mind
PHI 3213	Ethics
POL 3303	Race and American Politics
SOC 3043	Race and Ethnic Relations
TIS 3043	Advanced Practice in Healthcare Interpreting

Internship and Independent Study courses in the participating disciplines may also be used 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.

<b>E. Free electives</b>	<b>17-18</b>
<b>Total Credit Hours</b>	<b>90</b>

## 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 1223	AIS: Arts and Humanities (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 (core)	3
Free elective (CHE 1073 if needed)		3
<b>Credit Hours</b>		<b>15</b>

#### Spring

BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors (core and major)	4
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
WRC 1023	Freshman Composition II (core)	3
American History (core)		3
Creative Arts (core) (Arts & Humanities elective)		3
<b>Credit Hours</b>		<b>17</b>

#### Second Year

##### Fall

BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors (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
<b>Credit Hours</b>		<b>17</b>

##### 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
<b>Credit Hours</b>		<b>14</b>

**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

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**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

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**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

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**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

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**Credit Hours** **13**


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**Total Credit Hours** **120**
**B.A. in Medical Humanities with a Health Careers Concentration – Four-Year Academic Plan****First Year****Fall**

AIS 1223	AIS: Arts and Humanities (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 (core)	3
Free elective (CHE 1073 if needed)		3

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**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 (core)	3
American History (core)		3
Creative Arts core (Arts & Humanities elective)		3

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**Credit Hours** **16**
**Second Year****Fall**

BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors (core and major)	4
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MHU 2013	Introduction to Medical Humanities	3
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Foreign language (semester I)		3-4
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Social and Behavioral Sciences core (Social & Behavioral Sciences elective)		3
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**Credit Hours** **13-14**
**Spring**

BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors (core and major)	4
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American History (core)		3
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Foreign language (semester II)		3-4
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Social & Behavioral Sciences elective		3
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Upper-division Arts & Humanities elective		3
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**Credit Hours** **16-17**
**Third Year****Fall**

BIO 2313	Genetics	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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Social & Behavioral Sciences elective		3
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Upper-division Social & Behavioral Sciences elective		3
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Upper-division free elective		3
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**Credit Hours** **15**
**Spring**

PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory	4
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Arts & Humanities elective		3
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Language, Philosophy and Culture (core)		3
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Upper-division Social & Behavioral Sciences elective		3
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Upper-division free elective		3
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**Credit Hours** **16**
**Fourth Year****Fall**

Upper-division Arts & Humanities elective		3
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Upper-division Arts & Humanities elective		3
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Upper-division Social & Behavioral Sciences elective		3
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Upper-division Social & Behavioral Sciences elective		3
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Upper-division free elective		3
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**Credit Hours** **15**
**Spring**

MHU 4813	Seminar in Medical Humanities	3
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Arts & Humanities elective		3
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Upper-division Arts & Humanities elective	3
Upper-division free elective	3
Free elective (to meet 120 hour minimum)	0-2
<b>Credit Hours</b>	<b>14-12</b>
<b>Total Credit Hours</b>	<b>120</b>

### B.A. in Medical Humanities with a Pre-Advanced Practice Provider Concentration – Four-Year Academic Plan

#### First Year

Fall		Credit Hours
AIS 1223	AIS: Arts and Humanities (core)	3
STA 1053	Basic Statistics (core and major)	3
MAT 1073	Algebra for Scientists and Engineers (core and major)	3
MHU 2013	Introduction to Medical Humanities	3
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>15</b>

#### Spring

BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors (core and major)	4
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
PSY 1013	Introduction to Psychology (core and major - Social & Behavioral Sciences elective)	3
WRC 1023	Freshman Composition II (core)	3
Free elective		3
<b>Credit Hours</b>		<b>17</b>

#### Second Year

Fall		Credit Hours
BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors (core and major)	4
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	4
American History (core)		3
Language, Philosophy, and Culture (core)		3
<b>Credit Hours</b>		<b>14</b>

#### Spring

BIO 2313	Genetics	3
CHE 2603 & CHE 2612	Organic Chemistry I and Organic Chemistry I Laboratory	5
POL 1013	Introduction to American Politics (core)	3
Arts & Humanities elective		3
<b>Credit Hours</b>		<b>14</b>

#### Third Year

Fall		Credit Hours
BIO 3713 & BIO 3722	Microbiology and Microbiology Laboratory	5
BIO 2053 & BIO 2051	Human Anatomy and Physiology I and Human Anatomy and Physiology Laboratory I	4

POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>15</b>

#### Spring

BIO 2063 & BIO 2061	Human Anatomy and Physiology II and Human Anatomy and Physiology Laboratory II	4
American History (core)		3
Arts & Humanities elective		3
Social & Behavioral Sciences elective		
Upper-division free elective		3
<b>Credit Hours</b>		<b>13</b>

#### Fourth Year

##### Fall

MHU 4813	Seminar in Medical Humanities	3
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
<b>Credit Hours</b>		<b>15</b>

##### Spring

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
Upper-division free elective (to meet 120 hour minimum)		2
<b>Credit Hours</b>		<b>17</b>
<b>Total Credit Hours</b>		<b>120</b>

- Minor in Film Studies (p. 203)
- Minor in Latin American Studies (p. 204)
- Minor in Museum Studies (p. 205)

## 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:

Code	Title	Credit Hours
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 2043	Basics of Screenwriting	3
HUM 2053	History of Film	3
HUM 3103	American Film	3
HUM 3203	Film Genres	3
HUM 3303	Major Filmmaker	3

HUM 3323	Race, Ethnicity, and Film	3
HUM 3333	Gender, Sexuality, and Film	3
HUM 3343	Antiquity on Film	3
HUM 3353	Film and Medicine	3
HUM 3403	Literature into Film	3
HUM 4013	Screenwriting Workshop	3
HUM 4811	Internship in Film/Media	1
HUM 4812	Internship in Film/Media	2
HUM 4813	Internship in Film/Media	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
ENG 2023	Literature and Film	3

The following topics courses may also be applied toward the 18-hour requirement when they examine film or cinema:

Code	Title	Credit Hours
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
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.

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.

Code	Title	Credit Hours
<b>Anthropology</b>		
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 3403	Field Course in Archaeology (when topic includes Latin American content)	3
<b>Art/Art History</b>		
AHC 4333	Topics in Art History and Criticism (topics with Latin American content are offered every semester)	3
AHC 4423	Arts of Ancient Mesoamerica	3
AHC 4523	Latin American Art	3
<b>Geography/Global Affairs/Political Science</b>		
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	
<b>History</b>		
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
HIS 4953	Special Studies in History (when topic includes Latin American content)	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
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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:

Code	Title	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:

Code	Title	Credit Hours
Elective Courses:		
AHC 4113	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 Project	3
CLA 3063	Ancient Mediterranean Art and Archaeology	3
CLA 3123	Cultural Issues in Mediterranean 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 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 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
<b>Total Credit Hours</b>	<b>42</b>

## Degree Requirements

Code	Title	Credit Hours
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### A. 36 semester credit hours in the major, 21 of which must be at the upper-division level

1. Required courses:		
ANT 1013	Introduction to Anthropology	3
or ANT 1513	Anthropology Matters	
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
Cultural Anthropology	3
Biological Anthropology	3

### 3. Additional semester credit hours of anthropology electives chosen in consultation with the student's advisor, which must be upper division. 12

### B. 42 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.	42
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<b>Total Credit Hours</b>	<b>78</b>
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## 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 1513	Anthropology Matters	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 (core)	3
Life and Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

### Spring

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 1023	Freshman Composition II (core)	3
Creative Arts (core)		3
Mathematics (core)		3
<b>Credit Hours</b>		<b>15</b>

### Second Year

#### Fall

ANT 2033	Introduction to Biological Anthropology (core and major)	3
ANT 2053	Introduction to Cultural Anthropology	3
POL 1013	Introduction to American Politics (core)	3
Component Area Option (core)		3
Upper-division Archaeology course		3
<b>Credit Hours</b>		<b>15</b>

#### 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
<b>Credit Hours</b>		<b>15</b>

### 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
<b>Credit Hours</b>	<b>15</b>

#### Spring

Upper-division ANT elective	3
Upper-division ANT elective	3
Free elective	3
Free elective	3
Upper-division support work	3
<b>Credit Hours</b>	<b>15</b>

### Fourth Year

#### Fall

Free elective	3
Free elective	3
Upper-division ANT elective	3
Upper-division ANT elective	3
Upper-division support work	3
<b>Credit Hours</b>	<b>15</b>

#### Spring

Free elective	3
Free elective	3
Upper-division ANT elective	3
Upper-division free elective	3
Upper-division free elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

- Minor in Anthropology (p. 207)
- Minor in American Indian Studies (p. 208)
- Minor in Archaeological Practice (p. 208)

## Minor in Anthropology

All students pursuing a Minor in Anthropology must complete 18 semester credit hours.

Code	Title	Credit Hours
A. Select two of the following courses:		6
ANT 2033	Introduction to Biological Anthropology	
ANT 2043	Introduction to Archaeology	
ANT 2053	Introduction to Cultural Anthropology	
ANT 2063	Language, Thought, and Culture	
B. Additional semester credit hours of anthropology electives, at least 9 semester credit hours of which must be upper division and must include one course from each of the following subfields:		12
Archaeology upper-division course		
Cultural Anthropology upper-division course		
Biological Anthropology upper-division course		
<b>Total Credit Hours</b>		<b>18</b>

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:

Code	Title	Credit Hours
AHC 4423	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 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.

Code	Title	Credit Hours
A. Required introductory course:		3
ANT 2043	Introduction to Archaeology	
B. Required methods-intensive, hands-on learning experience. Select one course from the following:		3
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 from the following:		12
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 3573	Digital Archaeology
ANT 3663	Hunters and Gatherers - Past and Present
ANT 3713	Anthropology of Material Culture
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
ANT 4173	Politics of the Past
ANT 4953	Special Studies in Anthropology (when content is focused on archaeology)
CLA 3063	Ancient Mediterranean Art and Archaeology (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.

## School of Art

The School of Art 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 Project, 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. 209)
- B.F.A. degree in Art (p. 211)
- B.A. degree in Art History and Criticism (p. 213)

## 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 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 or AHC 1123 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
<b>Total Credit Hours</b>	<b>42</b>

### 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.

Code	Title	Credit Hours
ART 1003	Foundations I <sup>1</sup>	
ART 1013	Foundations II <sup>1</sup>	
ART 1023	Foundations III <sup>1</sup>	
ART 1213	Drawing I <sup>1</sup>	

### Major Requirements

Code	Title	Credit Hours
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#### A. Required lower-division art and art history and criticism foundation courses:

AHC 1113	Art History I <sup>1</sup>	3
AHC 1123	Art History II <sup>1</sup>	3
ART 1003	Foundations I <sup>1</sup>	3
ART 1013	Foundations II <sup>1</sup>	3
ART 1023	Foundations III <sup>1</sup>	3
ART 1213	Drawing I <sup>1</sup>	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: 12

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. 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.

#### D. Upper-division art history and criticism course electives:

AHC 4353	Topics in Art History and Criticism	3
(take with an aligned content ART 3033 Interdisciplinary Contemporary Studio Art course, to be counted in section C)		

Select 3 additional semester credit hours of upper-division AHC course electives. The AHC course prefix must precede course numbers for all classes used to fulfill these degree requirements.

**E. Required upper-division courses:**

ART 3033	Interdisciplinary Contemporary Studio Topics (take with an aligned content AHC 4353 of the same topic, to be counted in section D)	3
ART 4973	B.A. Senior Seminar (to be taken in student's final semester prior to graduation)	3

**F. Free Electives: 27**

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, and 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 78**

<sup>1</sup> 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**

		Credit Hours
<b>Fall</b>		
AHC 1113	Art History I (core and major) <sup>1</sup>	3
AIS 1203	Academic Inquiry and Scholarship (core)	3
ART 1003	Foundations I <sup>1</sup>	3
ART 1213	Drawing I <sup>1</sup>	3
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>15</b>

**Spring**

AHC 1123	Art History II <sup>1</sup>	3
ART 1013	Foundations II <sup>1</sup>	3

ART 1023	Foundations III <sup>1</sup>	3
WRC 1023	Freshman Composition II (core)	3
Mathematics core		3

**Credit Hours 15**

**Second Year**

**Fall**

POL 1013	Introduction to American Politics (core)	3
Foreign Language (semester I)		3-4
Lower-division Studio ART Basic (choose one 2000-level ART course)		3
Lower-division Studio ART Basic (choose one 2000-level ART 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 ART course)		3
Life & Physical Sciences core		3

**Credit Hours 15-16**

**Third Year**

**Fall**

ART 3033	Interdisciplinary Contemporary Studio Topics (choose topic of interest- must take with aligned topic AHC 4353)	3
AHC 4353	Topics in Art History and Criticism (choose topic of interest- must take with aligned topic ART 3033)	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
Component Area Option core		3
Upper-division free elective		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**

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 the 120 hour minimum)	1-3
<b>Credit Hours</b>	<b>15-13</b>

**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
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

<sup>1</sup> 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 the choice of a single specialization track or an interdisciplinary track. For the single specialization track, students choose one area of study from the following concentrations: Ceramics, Drawing, New Media, Painting, Photography, Printmaking, or Sculpture. This track is supported by the student taking additional studio art electives. Alternately, students may choose to pursue an interdisciplinary specialization by combining two concentration areas. 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 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 66 semester credit hours of art (ART) and 15 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 or AHC 1123 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
<b>Total Credit Hours</b>	<b>42</b>

### 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.

Code	Title	Credit Hours
ART 1003	Foundations I <sup>1</sup>	
ART 1013	Foundations II <sup>1</sup>	
ART 1023	Foundations III <sup>1</sup>	
ART 1213	Drawing I <sup>1</sup>	

## Major Requirements

Code	Title	Credit Hours
<b>A. Required lower-division studio art and art history foundation courses completed as part of the first 60 hours of the curriculum:</b>		
AHC 1113	Art History I <sup>1</sup>	3
AHC 1123	Art History II <sup>1</sup>	3
ART 1003	Foundations I <sup>1</sup>	3
ART 1013	Foundations II <sup>1</sup>	3
ART 1023	Foundations III <sup>1</sup>	3
ART 1213	Drawing I <sup>1</sup>	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>B. Upper-division art courses including:</b>		
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	Interdisciplinary Contemporary Studio Topics (must be repeated for credit, take with an aligned content AHC 4353 of the same topic)	6
ART 3933	Studio Seminar: Professionalism	3
ART 4833	Internship in the Visual Arts	3
ART 4983	B.F.A. Senior Seminar and Project	3
ART 4993	B.F.A. Senior Seminar and Exhibition	3
<b>C. Upper-division art courses in one selected area of studio specialization:</b>		
Complete 9 hours (3 courses) of upper-division coursework from one of the following specialized areas of study: ceramics, drawing, new media, painting, photography, printmaking, or sculpture.		
<b>D. Upper-division art history and criticism courses:</b>		
AHC 4353	Topics in Art History and Criticism (must be repeated for credit, take with an aligned content ART 3033 of the same topic)	6
Select 3 additional semester credit hours of upper-division AHC coursework. This course must include the AHC prefix to fulfill this degree requirement.		
<b>E. Art course electives:</b>		
Students who choose the interdisciplinary track will take all 9 credits in their secondary area of emphasis.		
Select 9 additional semester credit hours of upper-division ART coursework unless approved by chair. The ART course prefix must precede course numbers for all classes used to fulfill these degree requirements.		
Note: ART 1223 Drawing II is a required course for B.F.A. majors specializing in drawing and painting, and thus will take the place of one 3-hour lower upper-division art elective. Chair approval for this substitution must be obtained prior to enrollment.		
<b>Total Credit Hours</b>		<b>81</b>

<sup>1</sup> 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	Art History I (core and major) <sup>1</sup>	3
AIS 1203	Academic Inquiry and Scholarship (core)	3
ART 1003	Foundations I <sup>1</sup>	3
ART 1213	Drawing I <sup>1</sup>	3
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>15</b>

#### Spring

AHC 1123	Art History II <sup>1</sup>	3
ART 1013	Foundations II <sup>1</sup>	3
ART 1023	Foundations III <sup>1</sup>	3
WRC 1023	Freshman Composition II (core)	3
Lower-division Studio ART Basic (choose one 2000-level studio course)		3
<b>Credit Hours</b>		<b>15</b>

#### Second Year

##### Fall

Lower-division Studio ART Basic (choose one 2000-level studio course not previously taken)		3
Lower-division Studio ART Basic (choose one 2000-level studio course not previously taken)		3
Lower-division Studio ART Basic (choose one 2000-level studio course not previously taken)		3
Life & Physical Sciences core		3
Mathematics core		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

Lower-division Studio ART Basic (choose one 2000-level studio course not previously taken)		3
Lower-division Studio ART Basic (choose one 2000-level studio course not previously taken)		3
ART 3033	Interdisciplinary Contemporary Studio Topics (choose topic of interest- must take with aligned topic AHC 4353)	3

AHC 4353	Topics in Art History and Criticism (choose topic of interest- must take with aligned topic ART 3033)	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

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**Credit Hours** 15

**Third Year****Fall**

ART 3033	Interdisciplinary Contemporary Studio Topics (choose topic of interest- must take with aligned topic AHC 4353)	3
ART 3933	Studio Seminar: Professionalism	3
AHC 4353	Topics in Art History and Criticism (choose topic of interest- must take with aligned topic ART 3033)	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

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**Credit Hours** 15

**Spring**

AHC 4333	Topics in Art History and Criticism	3
ART 4833	Internship in the Visual Arts	3
Upper-division ART specialization (choose one 3000- or 4000 level course)		3
Upper-division ART studio - secondary specialization or elective (choose one 3000- or 4000-level course)		3
Language, Philosophy & Culture core		3

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**Credit Hours** 15

**Fourth Year****Fall**

ART 4983	B.F.A. Senior Seminar and Project	3
Upper-division ART specialization (choose one 4000-level course)		3
Upper-division ART studio- secondary specialization or elective (choose one 4000-level course)		3
Life and Physical Sciences core		3
Social and Behavioral Sciences core		3

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**Credit Hours** 15

**Spring**

ART 4993	B.F.A. Senior Seminar and Exhibition	3
Upper-division ART specialization (choose one 4000-level course)		3
Upper-division ART studio- secondary specialization or elective (choose one 4000-level course)		3
Government-Political Sciences core		3

Component Area core	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

<sup>1</sup> 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 or AHC 1123 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
<b>Total Credit Hours</b>	<b>42</b>

### 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.

Code	Title	Credit Hours
AHC 1113	Art History I	
AHC 1123	Art History II	

### Major Requirements

Code	Title	Credit Hours
<b>A. Lower-division art history and criticism foundation courses:</b>		
AHC 1113	Art History I <sup>1</sup>	3
AHC 1123	Art History II <sup>1</sup>	3
<b>B. Lower-division art courses:</b>		
ART 1003	Foundations I	3
ART 1013	Foundations II	3
ART 1023	Foundations III	3
<b>C. Required Upper-division courses:</b>		
AHC 4933	Art Gallery and Museum Internship	3
<b>D. Choose two from the following Upper-division art history and criticism required courses:</b>		
AHC 4423	Arts of Ancient Mesoamerica	
AHC 4523	Latin American Art	
AHC 4113	Contemporary Art	
<b>E. Upper-division art history and criticism courses:</b>		
AHC 4333	Topics in Art History and Criticism	9
Select 6 additional semester credit hours of upper-division AHC coursework. AHC 4113 listed in section D above may count towards section E if all three courses are taken.		
<b>F. Upper-division art course:</b>		
ART 4973	B.A. Senior Seminar	3
<b>G. Additional coursework options:</b>		
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.		
<b>H. Electives:</b>		
Select 36 semester credit hours of electives, at least 18 of which must be upper-division, and including a minimum of six credit hours of a language other than English.		36
<b>Total Credit Hours</b>		<b>78</b>

<sup>1</sup> 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	Art History I (core and major) <sup>1</sup>	3
AIS 1203	Academic Inquiry and Scholarship (core)	3
ART 1003	Foundations I <sup>1</sup>	3
ART 1023	Foundations III <sup>1</sup>	3
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>15</b>
Spring		
AHC 1123	Art History II <sup>1</sup>	3
ART 1013	Foundations II <sup>1</sup>	3
WRC 1023	Freshman Composition II (core)	3
Language (semester I)		3-4
Mathematics core		3
<b>Credit Hours</b>		<b>15-16</b>
Second Year		
Fall		Credit Hours
AHC 4933	Art Gallery and Museum Internship	3
Language (semester II)		3-4
Language, Philosophy & Culture core		3
Life & Physical Sciences core		3
Upper-division elective		3
<b>Credit Hours</b>		<b>15-16</b>
Spring		
POL 1013	Introduction to American Politics (core)	3
Social and Behavioral Sciences core		3
Life & Physical Sciences core		3
COLFA elective		
Upper-division AHC (choose one 3000- or 4000-level course)		3
<b>Credit Hours</b>		<b>12</b>
Third Year		
Fall		Credit Hours
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Upper-division elective		3
COLFA elective		
Upper-division AHC (choose one 4000-level course)		3
Component Area Option core		3
<b>Credit Hours</b>		<b>12</b>

<b>Spring</b>			AHC 4933	Art Gallery and Museum Internship
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	MSM 3003	Fundamentals of Museum Studies
<b>Total Credit Hours</b>				<b>18</b>
AHC 4333	Topics in Art History and Criticism	3		
Upper-division elective		3		
Upper-division free elective		3		
Upper-division free elective		3		
<b>Credit Hours</b>		<b>15</b>		
<b>Fourth Year</b>				
<b>Fall</b>				
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 4000-level course)		3		
Upper-division elective		3		
Upper-division elective		3		
Upper-division elective		3		
<b>Credit Hours</b>		<b>15</b>		
<b>Spring</b>				
ART 4973	B.A. Senior Seminar	3		
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		
<b>Credit Hours</b>		<b>15-13</b>		
<b>Total Credit Hours</b>		<b>114</b>		

<sup>1</sup> 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.

Code	Title	Credit Hours
<b>A. Minor requirements:</b>		
Select two of the following:		6
AHC 1113	Art History I	
AHC 1123	Art History II	
<b>B. Additional courses:</b>		
Select four of the following:		12
AHC 4113	Contemporary Art	
AHC 4423	Arts of Ancient Mesoamerica	
AHC 4523	Latin American Art	
AHC 4333	Topics in Art History and Criticism	



## 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, they also may choose to concentrate their coursework in either Public Relations, Digital Communication, or Health Communication.

The B.A. degree in Communication is also offered in a 100 percent online format (<https://online.utsa.edu/>). Please note, only the Digital Communication concentration is available to students enrolled in the 100 percent online format.

### 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. 216)
  - Public Relations Concentration (p. 217)
  - Digital Communication Concentration (p. 218)
  - Health Communication Concentration (p. 218)
- B.A. degree in Communication Online (p. 216)
  - Digital Communication Concentration (p. 218)

### 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.

The B.A. in Communication is also offered in a 100 percent online format. Students pursuing the 100 percent online format must fulfill all degree requirements in the same manner as residential students. However, only the Digital Communication concentration is offered in the 100 percent online format. Online students must select the online option and may also select the Digital Communication concentration.

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.

#### 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
<b>Total Credit Hours</b>	<b>42</b>

#### 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.

Code	Title	Credit Hours
COM 3023	Foundations of Communication	
COM 3073	Conduct of Communication Inquiry	
COM 3083	Language and Communication Theory	

#### Degree Requirements

Code	Title	Credit Hours
<b>A. Communication Gateway Courses</b>		
COM 3023	Foundations of Communication	3
COM 3073	Conduct of Communication Inquiry	3
COM 3083	Language and Communication Theory	3
<b>B. Communication Core</b>		
COM 2113	Public Speaking	3
COM 3553 or COM 3563	Intercultural Communication International Communication	3
<b>Total Credit Hours</b>		<b>15</b>

#### B.A. in Communication (no concentration)

All candidates seeking this degree must fulfill the Core Curriculum requirements, the degree requirements listed above, and the following:

Code	Title	Credit Hours
<b>A. Additional Communication courses</b>		
	Select 18 additional semester credit hours in Communication, at least 15 at the upper-division level	18

**B. Capstone course**

COM 4813	Theory and Practice of Social Interaction	3
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**C. Electives**

42 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** 63

## 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**

<b>Fall</b>		<b>Credit Hours</b>
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 (core)	3
Mathematics (core)		3
Language, Philosophy and Culture (core)		3
<b>Credit Hours</b>		<b>15</b>

**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 (core)	3
Life & Physical Sciences (core)		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

**Second Year**

<b>Fall</b>		
COM 3023	Foundations of Communication <sup>1</sup>	3
COM 3083	Language and Communication Theory <sup>1</sup>	3
POL 1013	Introduction to American Politics (core)	3
Life & Physical Sciences (core)		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

COM 3073	Conduct of Communication Inquiry <sup>1</sup>	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
<b>Credit Hours</b>		<b>15</b>

**Third Year**

<b>Fall</b>		
Creative Arts core (or free elective)		3
Free elective		3
Free elective		3
COM elective		3
Upper-division COM elective		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

Free elective (or Creative Arts core)		3
Free elective		3
Free elective		3
Upper-division COM elective		3
Upper-division COM elective		3
<b>Credit Hours</b>		<b>15</b>

**Fourth Year**

<b>Fall</b>		
Free elective		3
Free elective		3
Free elective		3
Free elective		3
Upper-division COM elective		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

COM 4813	Theory and Practice of Social Interaction	3
Free elective		3
Free elective		3
Free elective (to meet 120 hour minimum)		3
Upper-division COM elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120</b>

<sup>1</sup> 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. Please note, this concentration is not available to 100% online students.

Code	Title	Credit Hours
<b>A. Public Relations Concentration courses</b>		
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>B. Additional Communication courses</b>		
Select 9 additional semester credit hours in Communication, at least one course at the upper-division level		9
<b>C. Electives</b>		
39 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.		39
<b>Total Credit Hours</b>		<b>63</b>

### 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. Please note, this concentration is available to both residential and 100% online students.

Code	Title	Credit Hours
<b>A. Digital Communication Concentration courses</b>		
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>B. Additional Communication courses</b>		
Select 9 additional semester credit hours in Communication at the upper-division level.		9
<b>C. Electives</b>		
39 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.		39
<b>Total Credit Hours</b>		<b>63</b>

### 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. Please note, this concentration is not available to 100% online students.

Code	Title	Credit Hours
<b>A. Health Communication Concentration courses</b>		
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>B. Additional Communication courses</b>		
Select 9 additional semester credit hours in Communication, at least one course at the upper-division level		9
<b>C. Electives</b>		
39 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.		39
<b>Total Credit Hours</b>		<b>63</b>

### 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. Please note, only the Digital Communication concentration courses are available to 100% online students.

#### 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 (core)	3
Mathematics (core)		3
Language, Philosophy and Culture (core)		3
<b>Credit Hours</b>		<b>15</b>
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 (core)	3
Life & Physical Sciences (core)		3

Free elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Second Year</b>		
<b>Fall</b>		
COM 3023	Foundations of Communication <sup>1</sup>	3
COM 3083	Language and Communication Theory <sup>1</sup>	3
POL 1013	Introduction to American Politics (core)	3
Life & Physical Sciences (core)		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
COM 3073	Conduct of Communication Inquiry <sup>1</sup>	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
<b>Credit Hours</b>		<b>15</b>
<b>Third Year</b>		
<b>Fall</b>		
Creative Arts core (or free elective)		3
Free elective		3
Free elective		3
Upper-division COM elective		3
Concentration Course (from list A)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
Free elective (or Creative Arts core)		3
Free elective		3
Free elective		3
Concentration Course (from list A)		3
Concentration Course (from list A)		3
<b>Credit Hours</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Fall</b>		
Free elective		3
Free elective		3
Free elective		3
Free elective		3
Concentration Course (from list A)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
Free elective		3
Free elective (to meet 120 hour minimum)		3
Upper-division COM elective		3
Upper-division COM elective		3

Concentration Course (from list A)	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

<sup>1</sup> Must be completed with a grade of "C-" or better.

## 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, English Language Arts and Reading, and Black, Indigenous, and Latinx Literature, 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. 220)
  - Professional Writing Concentration (p. 222)
  - Creative Writing Concentration (p. 223)
  - English Language Arts and Reading Concentration (p. 224)
  - Black, Indigenous, Latinx Literature Concentration (p. 226)

### 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.

#### 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
<b>Total Credit Hours</b>	<b>42</b>

### Degree Requirements

Code	Title	Credit Hours
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#### A. English major courses

1. Required courses in English:		
ENG 2213	Literary Criticism and Analysis	3
ENG 2243	Literatures in English (Premodern to Present)	3
ENG 2253	Literatures of the Americas (Premodern to Present)	3
ENG 2523	Postcolonial Decolonial Literature and Theory	3
ENG 2773	Borders, Race, and Literature	3
ENG 4973	Seminar for English Majors	3

#### 2. Foundation courses:

a. Rhetoric and Composition (choose one)		3
ENG 2443	Persuasion and Rhetoric	
ENG 3303	Theory and Practice of Composition	
ENG 3313	Advanced Composition	
ENG 3363	Topics in Rhetoric and Composition	
ENG 3383	Writing in Public and Professional Contexts	
ENG 3413	Specialized Technical & Professional Writing	
b. English Language (choose one)		3
ENG 3323	History of the English Language	
ENG 3333	Introduction to the Structure of English	
ENG 3343	Principles of English Linguistics	



3. Historical periods; select one upper division ENG course from each period. Selections must range across geocultural areas.

a. Prior to 1500 (courses include, but are not limited to ENG 3213, ENG 4063, ENG 4213; other courses may be used to satisfy this period requirement, depending on their content) 3

b. 1500-1700 (courses include, but are not limited to ENG 3223, ENG 3233, ENG 4113, ENG 4223; other courses may be used to satisfy this period requirement, depending on their content) 3

c. 1700-1900 (courses include, but are not limited to ENG 4013, ENG 4023, ENG 4143, ENG 4233; other courses may be used to satisfy this period requirement, depending on their content) 3

d. Post 1900 (courses include, but are not limited to ENG 3033, ENG 3123, ENG 4053, ENG 4243; other courses may be used to satisfy this period requirement, depending on their content) 3

#### 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 (Including enough upper-division courses to reach the minimum 39 upper-division hours required for the degree program) 36

Students may pursue English concentrations and certificates (see advice sheets for suggested pathways).

**Total Credit Hours 78**

## 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 (core)	3
Mathematics (core)		3
American History (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

#### Spring

WRC 1023	Freshman Composition II (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
Social & Behavioral Sciences (core)		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

#### Second Year

##### Fall

ENG 2213	Literary Criticism and Analysis (core and major)	3
Component Area Option (core)		3
Foreign language (semester I)		3-4
Government-Political Science (core)		3
Free elective		3
<b>Credit Hours</b>		<b>15-16</b>

##### Spring

ENG 2243	Literatures in English (Premodern to Present)	3
ENG 2253	Literatures of the Americas (Premodern to Present)	3
Foreign language (semester II)		3-4
Creative Arts (core)		3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15-16</b>

#### Third Year

##### Fall

ENG 2523	Postcolonial Decolonial Literature and Theory	3
Foundation Course (from A. 2. a or b)		3
Historical Periods (from A. 3. a, b, c, or d)		3
Upper-division free elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

ENG 2773	Borders, Race, and Literature	3
Foundation Course (from A. 2. a or b)		3
Historical Periods (from A. 3. a, b, c, or d)		3
Upper-division free elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

#### Fourth Year

##### Fall

Historical Periods (from A. 3. a, b, c, or d)		3
Upper-division free elective		3
Upper-division free elective		3
Upper-division free elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

ENG 4973	Seminar for English Majors	3
Historical Periods (from A. 3. a, b, c, or d)		3
Upper-division free elective		3
Free Elective		3
Free elective (to meet 120 hour minimum)		1-3
<b>Credit Hours</b>		<b>15-13</b>

**Total Credit Hours 120**

## 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:

Code	Title	Credit Hours
<b>A. Courses for the major</b>		
1. Required courses in English:		
ENG 2213	Literary Criticism and Analysis	3
ENG 2243	Literatures in English (Premodern to Present)	3
ENG 2253	Literatures of the Americas (Premodern to Present)	3
ENG 2523	Postcolonial Decolonial Literature and Theory	3
ENG 2773	Borders, Race, and Literature	3
ENG 4973	Seminar for English Majors	3
2. Required courses in Professional Writing and Rhetoric		
ENG 2413	Technical Writing (if not already taken to fulfill Core Curriculum component area option)	3
ENG 3363	Topics in Rhetoric and Composition	3
ENG 3413	Specialized Technical & Professional Writing	3
ENG 4433	Advanced Professional Writing	3
ENG 4933	Internship	3
3. Prescribed electives (choose one)		
ENG 2433	Editing	3
ENG 2443	Persuasion and Rhetoric	3
ENG 3303	Theory and Practice of Composition	3
ENG 3313	Advanced Composition	3
ENG 3383	Writing in Public and Professional Contexts	3
4. Upper-division literature (choose two)		
ENG 3513	Mexican American Literature	6
ENG 3613	African American Literature	6
ENG 3713	Topics in Multiethnic Literatures of the United States	6
ENG 3813	Topics in Native American Literature	6
ENG 3913	Race, Gender, and Global Literature	6
ENG 4593	Topics in Race, Gender, and Global Literature	6
ENG 4813	Indigenous Culture, Literature, and History	6
<b>B. Single language other than English</b>		
Select 6 semester credit hours in a single language other than English		6
<b>C. Electives</b>		
Select 30 semester credit hours of electives (Including enough upper-division courses to reach the minimum 39 upper-division hours required for the degree program)		30
<b>Total Credit Hours</b>		<b>78</b>

## 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		Credit Hours
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
WRC 1013	Freshman Composition I (core)	3
Mathematics (core)		3
American History (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
WRC 1023	Freshman Composition II (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
Social & Behavioral Sciences (core)		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Second Year</b>		
<b>Fall</b>		
ENG 2213	Literary Criticism and Analysis (core and major)	3
ENG 2413	Technical Writing (core and concentration)	3
Foreign language (semester I)		3-4
Government-Political Science (core)		3
Free elective		3
<b>Credit Hours</b>		<b>15-16</b>
<b>Spring</b>		
ENG 2243	Literatures in English (Premodern to Present)	3
ENG 2253	Literatures of the Americas (Premodern to Present)	3
Creative Arts (core)		3
Foreign language (semester II)		3-4
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15-16</b>
<b>Third Year</b>		
<b>Fall</b>		
ENG 2523	Postcolonial Decolonial Literature and Theory	3
ENG 3363	Topics in Rhetoric and Composition	3
Prescribed elective (from A. 3.)		3

Upper-division free elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
ENG 2773	Borders, Race, and Literature	3
ENG 3413	Specialized Technical & Professional Writing	3
Upper-division Literature (from A. 4.)		3
Upper-division free elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Fall</b>		
ENG 4433	Advanced Professional Writing	3
ENG 4933	Internship	3
Upper-division literature (from A. 4.)		3
Upper-division free elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
ENG 4973	Seminar for English Majors	3
Upper-division free elective		3
Upper-division free elective		3
Upper-division free elective		3
Free elective (to meet 120 hour minimum)		1-3
<b>Credit Hours</b>		<b>15-13</b>
<b>Total Credit Hours</b>		<b>120</b>

## 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:

Code	Title	Credit Hours
<b>A. English courses</b>		
1. Required courses in English:		
ENG 2213	Literary Criticism and Analysis	3
ENG 2243	Literatures in English (Premodern to Present)	3
ENG 2253	Literatures of the Americas (Premodern to Present)	3
ENG 2523	Postcolonial Decolonial Literature and Theory	3
ENG 2773	Borders, Race, and Literature	3
ENG 4973	Seminar for English Majors	3
2. Foundation courses:		

a. Rhetoric and Composition (choose one)		3
ENG 2443	Persuasion and Rhetoric	
ENG 3303	Theory and Practice of Composition	
ENG 3313	Advanced Composition	
ENG 3363	Topics in Rhetoric and Composition	
ENG 3383	Writing in Public and Professional Contexts	
ENG 3413	Specialized Technical & Professional Writing	
b. English Language (choose one)		3
ENG 3323	History of the English Language	
ENG 3333	Introduction to the Structure of English	
ENG 3343	Principles of English Linguistics	
3. Historical Periods; select one upper-division ENG course from each period. Selections must range across geocultural areas.		
a. Prior to 1500 (courses include, but are not limited to ENG 3213, ENG 4063, ENG 4213; other courses may be used to satisfy this period requirement, depending on their content)		3
b. 1500-1700 (courses include, but are not limited to ENG 3223, ENG 3233, ENG 4113, ENG 4223; other courses may be used to satisfy this period requirement, depending on their content)		3
c. 1700-1900 (courses include, but are not limited to ENG 4013, ENG 4023, ENG 4113, ENG 4233; other courses may be used to satisfy this period requirement, depending on their content)		3
d. Post 1900 (courses include, but are not limited to ENG 3033, ENG 3123, ENG 4053, ENG 4243; other courses may be used to satisfy this period requirement, depending on their content)		3
4. Creative Writing courses		
a. Lower-Division Workshops (choose two)		6
ENG 2323	Creative Writing: Fiction	
ENG 2333	Creative Writing: Poetry	
ENG 2343	Creative Writing: Nonfiction	
b. Upper-division workshops in at least two different genres (These courses may be repeated for credit, but at least 6 hours must be taken 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>B. Single language other than English</b>		
Select 6 semester credit hours in a single language other than English		6
<b>C. Electives</b>		
Select 21 semester credit hours of electives. Students are encouraged to repeat upper-level workshops, and to include ENG 2433 in their electives.		21
<b>Total Credit Hours</b>		<b>78</b>

## 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
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
WRC 1013	Freshman Composition I (core)	3
American History (core)		3
Life & Physical Sciences (core)		3
Mathematics (core)		3
<b>Credit Hours</b>		<b>15</b>

#### Spring

WRC 1023	Freshman Composition II (core)	3
American History (core)		3
Creative Arts (core)		3
Life & Physical Sciences (core)		3
Social & Behavioral Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

#### Second Year

##### Fall

ENG 2213	Literary Criticism and Analysis (core and major)	3
Foreign language (semester I)		3-4
Component Area Option core (ENG 2413 recommended)		3
Government-Political Science (core)		3
Free Elective		3
<b>Credit Hours</b>		<b>15-16</b>

##### Spring

ENG 2243	Literatures in English (Premodern to Present)	3
ENG 2253	Literatures of the Americas (Premodern to Present)	3
ENG 2323 or ENG 2333 or ENG 2343	Creative Writing: Fiction or Creative Writing: Poetry or Creative Writing: Nonfiction	3
Foreign language (semester II)		3-4
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15-16</b>

#### Third Year

##### Fall

ENG 2523	Postcolonial Decolonial Literature and Theory	3
ENG 2773	Borders, Race, and Literature	3
ENG 2323 or ENG 2333 or ENG 2343	Creative Writing: Fiction or Creative Writing: Poetry or Creative Writing: Nonfiction	3
Historical Periods (from A. 3. a, b, c, or d)		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

ENG 3423 or ENG 4523 or ENG 4533	Topics in Creative Writing or Writer's Workshop: Advanced Fiction Writing or Writer's Workshop: Advanced Poetry Writing	3
Foundation course (from A. 2. a or b)		3
Historical Periods (from A. 3. a, b, c, or d)		3
Upper-division free elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

#### Fourth Year

##### Fall

ENG 4523 or ENG 4533	Writer's Workshop: Advanced Fiction Writing or Writer's Workshop: Advanced Poetry Writing	3
Foundation course (from A. 2. a or b)		3
Historical Periods (from A. 3. a, b, c, or d)		3
Upper-division free elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

ENG 4523 or ENG 4533	Writer's Workshop: Advanced Fiction Writing or Writer's Workshop: Advanced Poetry Writing	3
ENG 4973	Seminar for English Majors	3
Historical Periods (from A. 3. a, b, c, or d)		3
Upper-division free elective		3
Free elective (to meet 120 hour minimum)		1-3
<b>Credit Hours</b>		<b>15-13</b>
<b>Total Credit Hours</b>		<b>120</b>

## 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. It includes preparation for teaching populations who speak English as a Second Language.

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

Code	Title	Credit Hours
<b>A. Courses in English</b>		
1. Required courses in English:		
ENG 2213	Literary Criticism and Analysis	3
ENG 2243	Literatures in English (Premodern to Present)	3
ENG 2253	Literatures of the Americas (Premodern to Present)	3
ENG 2523	Postcolonial Decolonial Literature and Theory	3
ENG 2773	Borders, Race, and Literature	3
ENG 4973	Seminar for English Majors	3
2. Upper-division literature (choose one)		
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 3913	Race, Gender, and Global Literature	
ENG 4593	Topics in Race, Gender, and Global Literature	
ENG 4813	Indigenous Culture, Literature, and History	
3. English Language Arts and Reading concentration		
ENG 3223 or ENG 3233	Shakespeare: The Early Plays Shakespeare: The Later Plays	3
ENG 3303	Theory and Practice of Composition	3
ENG 3333	Introduction to the Structure of English	3
ENG 3323 or ENG 3313 or ENG 3343 or ENG 4433	History of the English Language Advanced Composition Principles of English Linguistics Advanced Professional Writing	3
<b>B. Professional Education and Reading Coursework</b>		
BBL 3403	Cultural and Linguistic Equity for Schooling	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 3033	Foundations of English as a Second Language	3
ESL 3053	Literacy in a Second Language	3
ESL 3083	Second Language Teaching and Learning for Grades 7-12	3
CI 4253	Secondary English Language Arts & Reading Methods	3
EED 2013	Introduction to Teaching and Learning in a Culturally Diverse Society (Introduction to Learning and Teaching in a Culturally Diverse Society)	3
LTED 3673	Reading Development, Processes, and Instruction 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

CI 4646 or CI 4643	Clinical Teaching: Grades 7–12 Clinical Teaching: Grades 7-12	6
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### D. Single language other than English

Select 6 semester credit hours in a single language other than English	6
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**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 (core)	3
Foreign language (semester I)	3-4	
Life & Physical Sciences (core)	3	
Mathematics (core)	3	
<b>Credit Hours</b>	<b>15</b>	

#### Spring

WRC 1023	Freshman Composition II (core)	3
Foreign language (semester II)	3-4	
American History (core)	3	
Life & Physical Sciences (core)	3	
Social & Behavioral Sciences (core)	3	
<b>Credit Hours</b>	<b>15</b>	

#### Second Year

##### Fall

ENG 2213	Literary Criticism and Analysis (core and major)	3
ENG 2243	Literatures in English (Premodern to Present)	3
American History (core)	3	
Creative Arts (core)	3	
Government-Political Science (core)	3	
<b>Credit Hours</b>	<b>15</b>	

##### Spring

ENG 2253	Literatures of the Americas (Premodern to Present)	3
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ENG 2523	Postcolonial Decolonial Literature and Theory	3
ENG 3303	Theory and Practice of Composition	3
EED 2013	Introduction to Teaching and Learning in a Culturally Diverse Society (Introduction to Learning and Teaching in a Culturally Diverse Society)	3
Government-Political Science (core)		3
Component Area Option core (ENG 2413 recommended)		3
<b>Credit Hours</b>		<b>18</b>

**Third Year**

**Fall**

ENG 2773	Borders, Race, and Literature	3
ENG 3223 or ENG 3233	Shakespeare: The Early Plays or Shakespeare: The Later Plays	3
ENG 3333	Introduction to the Structure of English	3
BBL 3403	Cultural and Linguistic Equity for Schooling	3
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
SPE 3603	Introduction to Special Education	3
<b>Credit Hours</b>		<b>18</b>

**Spring**

ENG 3323 or ENG 3313 or ENG 3343 or ENG 4433	History of the English Language or Advanced Composition or Principles of English Linguistics or Advanced Professional Writing	3
EDP 3203	Learning and Development in the Secondary School Adolescent	3
ESL 3033	Foundations of English as a Second Language	3
ESL 3083	Second Language Teaching and Learning for Grades 7-12	3
LTED 3673	Reading Development, Processes, and Instruction Grades 7-12	3
Select one of the following:		3
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 3913	Race, Gender, and Global Literature	
ENG 4593	Topics in Race, Gender, and Global Literature	
ENG 4813	Indigenous Culture, Literature, and History	
<b>Credit Hours</b>		<b>18</b>

**Fourth Year**

**Fall**

CI 4643	Clinical Teaching: Grades 7-12	3
EDP 4203	Assessment and Evaluation	3

ENG 4973	Seminar for English Majors	3
ESL 3053	Literacy in a Second Language	3
LTED 3683	Writing Development, Processes, and Instruction-Grades 7-12	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
CI 4253	Secondary English Language Arts & Reading Methods	3
CI 4643	Clinical Teaching: Grades 7-12	3
<b>Credit Hours</b>		<b>6</b>
<b>Total Credit Hours</b>		<b>120</b>

## Bachelor of Arts Degree in English with a Black, Indigenous, Latinx Literature Concentration

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

### Degree Requirements

All candidates for the B.A. degree in English with a Black, Indigenous, and Latinx Literature concentration must complete:

Code	Title	Credit Hours
<b>A. English Courses</b>		
1. Required courses in English:		
ENG 2213	Literary Criticism and Analysis	3
ENG 2243	Literatures in English (Premodern to Present)	3
ENG 2253	Literatures of the Americas (Premodern to Present)	3
ENG 2523	Postcolonial Decolonial Literature and Theory	3
ENG 2773	Borders, Race, and Literature	3
ENG 4973	Seminar for English Majors	3
2. Foundation courses:		
a. Rhetoric and Composition (choose one)		
ENG 2443	Persuasion and Rhetoric	
ENG 3303	Theory and Practice of Composition	
ENG 3313	Advanced Composition	
ENG 3363	Topics in Rhetoric and Composition	
ENG 3383	Writing in Public and Professional Contexts	
ENG 3413	Specialized Technical & Professional Writing	
b. English Language (choose one)		
ENG 3323	History of the English Language	
ENG 3333	Introduction to the Structure of English	
ENG 3343	Principles of English Linguistics	
3. Historical Periods; select one upper-division ENG course from each period. Selections must range across geocultural areas.		
a. Prior to 1500 (courses include, but are not limited to ENG 3213, ENG 4063, ENG 4213; other courses may be used to satisfy this period requirement depending on their varying content)		

b. 1500-1700 (courses include, but are not limited to ENG 3223, ENG 3233, ENG 4113, ENG 4223; other courses may be used to satisfy this period requirement depending on their varying content)	3
c. 1700-1900 (courses include, but are not limited to ENG 4013, ENG 4023, ENG 4113, ENG 4233; other courses may be used to satisfy this period requirement depending on their varying content)	3
d. Post 1900 (courses include, but are not limited to ENG 3033, ENG 3123, ENG 4053, ENG 4243; other courses may be used to satisfy this period requirement depending on their varying content)	3
<b>4. Upper-division Literature (choose five)</b>	<b>15</b>
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 3913 Race, Gender, and Global Literature	
ENG 4593 Topics in Race, Gender, and Global Literature	
ENG 4613 Topics in Mexican American Literature	
ENG 4713 Topics in African American Literature	
ENG 4813 Indigenous Culture, Literature, and History	
<b>B. Single language other than English</b>	<b>6</b>
Select 6 semester credit hours in a single language other than English	
<b>C. Free Electives</b>	<b>21</b>
(Including enough upper-division courses to reach the minimum 39 upper-division hours required for the degree program)	
<b>Total Credit Hours</b>	<b>78</b>

## Course Sequence Guide for B.A. Degree in English with a Concentration in Black, Indigenous, and Latinx Literature

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 Black, Indigenous, and Latinx Literature - Four-Year Academic Plan

#### First Year

Fall	Credit Hours
AIS 1203 Academic Inquiry and Scholarship (core)	3
WRC 1013 Freshman Composition I (core)	3
American History (core)	3
Life & Physical Sciences (core)	3
Mathematics (core)	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
WRC 1023 Freshman Composition II (core)	3
American History (core)	3

Creative Arts (core)	3
Life & Physical Science (core)	3
Social & Behavioral Science (core)	3
<b>Credit Hours</b>	<b>15</b>
<b>Second Year</b>	
<b>Fall</b>	
ENG 2213 Literary Criticism and Analysis (core & major)	3
Foreign Language (semester I)	3-4
Component Area Option (ENG 2413 recommended)	3
Government-Political Science (core)	3
Free Elective	3
<b>Credit Hours</b>	<b>15-16</b>
<b>Spring</b>	
ENG 2243 Literatures in English (Premodern to Present)	3
ENG 2253 Literatures of the Americas (Premodern to Present)	3
ENG 2523 Postcolonial Decolonial Literature and Theory	3
Foreign Language (semester II)	3-4
Government-Political Science (core)	3
<b>Credit Hours</b>	<b>15-16</b>
<b>Third Year</b>	
<b>Fall</b>	
ENG 2773 Borders, Race, and Literature	3
Historical Periods (from section A. 3. a, b, c, or d)	3
Upper-division literature (from section A. 4.)	3
Foundation course (from section A. 2. a or b)	3
Free elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
Upper-division literature (from section A. 4.)	3
Upper-division literature (from section A. 4.)	3
Historical Periods (from section A. 3. a, b, c, or d)	3
Foundation course (from section A. 2. a or b)	3
Free elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Fourth Year</b>	
<b>Fall</b>	
Upper-division literature (from section A. 4.)	3
Historical Periods (from section A. 3. a, b, c, or d)	3
Upper-division free elective	3
Free elective	3
Free elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
Upper-division literature (from section A. 4.)	3
ENG 4973 Seminar for English Majors	3
Historical Periods (from section A. 3. a, b, c, or d)	3
Free elective	3

Free elective (to meet 120 hour minimum)	1-3
<b>Credit Hours</b>	<b>15-13</b>
<b>Total Credit Hours</b>	<b>120</b>

- Minor in English Literature (p. 228)
- Minor in Professional Writing (p. 228)

## Minor in English Literature

All students pursuing the Minor in English Literature must complete 21 semester credit hours of English and American literature.

Code	Title	Credit Hours
<b>A. Required courses</b>		
ENG 2243	Literatures in English (Premodern to Present)	3
ENG 2253	Literatures of the Americas (Premodern to Present)	3
ENG 2523	Postcolonial Decolonial Literature and Theory	3
ENG 2773	Borders, Race, and Literature	3
<b>B. Select two from the following, at least one of which must be before 1700:</b>		<b>6</b>
a. Prior to 1500 (courses include, but are not limited to ENG 3213, ENG 4063, ENG 4213; other courses may be used to satisfy this period requirement, depending on their content)		
b. 1500-1700 (courses include, but are not limited to ENG 3223, ENG 3233, ENG 4113, ENG 4223; other courses may be used to satisfy this period requirement, depending on their content)		
c. 1700-1900 (courses include, but are not limited to ENG 4013, ENG 4023, ENG 4143, ENG 4233; other courses may be used to satisfy this period requirement, depending on their content)		
d. Post 1900 (courses include, but are not limited to ENG 3033, ENG 3123, ENG 4053, ENG 4243; other courses may be used to satisfy this period requirement, depending on their content)		
<b>C. Select one upper-division course in literature in English</b>		<b>3</b>
<b>Total Credit Hours</b>		<b>21</b>

## Minor in Professional Writing

All students pursuing the Minor in Professional Writing must complete 18 semester credit hours of professional writing.

Code	Title	Credit Hours
<b>A. Required courses</b>		
ENG 2413	Technical Writing	3
ENG 3363	Topics in Rhetoric and Composition <sup>1</sup>	3
ENG 3413	Specialized Technical & Professional Writing <sup>1</sup>	3
ENG 4433	Advanced Professional Writing	3
<b>B. Select two from the following:</b>		<b>6</b>
ENG 2033	Science, Technology, and Society	
ENG 2443	Persuasion and Rhetoric	
ENG 3303	Theory and Practice of Composition	
ENG 3313	Advanced Composition	
ENG 3363	Topics in Rhetoric and Composition <sup>1</sup>	

ENG 3383	Writing in Public and Professional Contexts <sup>1</sup>
ENG 4933	Internship
<b>Total Credit Hours</b>	<b>18</b>

<sup>1</sup> 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:

Code	Title	Credit Hours
<b>A. 6 semester credit hours of required courses:</b>		<b>6</b>
ENG 2413	Technical Writing	
ENG 4433	Advanced Professional Writing	
<b>B. 9 additional semester credit hours from the following courses, at least 6 of which must be upper division:</b>		<b>9</b>
ENG 2033	Science, Technology, and Society	
or BBL 2003	Language, Culture, and Society	
or COM 1053	Business and Professional Speech	
or COM 3243	Persuasion	
or EGR 1403	Technical Communication	
or ES 2013	Introduction to Environmental Science I	
or ES 2023	Introduction to Environmental Science II	
or HTH 2413	Introduction to Community and Public Health	
or HUM 2033	Introduction to the Humanities II	
or PHI 1043	Critical Thinking	
or SOC 2013	Social Problems	
ENG 2433	Editing	
ENG 2443	Persuasion and 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 Technical & Professional Writing	
<b>Total Credit Hours</b>		<b>15</b>

## Department of History

The Department of History offers a Bachelor of Arts (B.A.) degree in History. Students majoring in History and interested in teaching certification may also select a concentration in Social Studies. The department also offers minors in American Studies and History.

### Signature Experiences

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 or Study Abroad. 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 faculty member serving as Undergraduate Advisor of Record of the Department of History oversees placement. Department faculty members provide supervision and grade internship performance.

### Department Honors

Students whose grade point average in the History major 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 3 hours of the honors thesis course (HIS 4993) and must complete a substantial original research project approved by the History Department and two other History 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 Honors Thesis course (HIS 4993) and complete this work satisfactorily **do not** need to enroll in HIS 4973 Seminar in History.

- B.A. degree in History (p. 229)
  - Concentration in Social Studies (p. 231)

### 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):

Code	Title	Credit Hours
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
<b>Total Credit Hours</b>	<b>42</b>

### 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.

Code	Title	Credit Hours
HIS 3013	Historical Research Methods	

### Degree Requirements

Code	Title	Credit Hours
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#### A. History major courses

36 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 3013	Historical Research Methods	3
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2. Select three courses from the sophomore-level civilization courses, including the following:

HIS 2123	Introduction to World Civilization to the Fifteenth Century	
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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 21 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. 21

4. Seminar or Honors Thesis

HIS 4973	Seminar in History (HIS 3013 Historical Research 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 written component. Conversational language training does not fulfill this requirement. 6

**C. Electives**

Select 36 semester credit hours of electives. In fulfillment of this requirement, History majors are encouraged to take at least 12 semester credit hours of upper-division coursework in disciplines that support the study of History. 36

**Total Credit Hours** 78

**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**

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 (core)	3
Mathematics (core)		3
<b>Credit Hours</b>		<b>15</b>

**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 (core)	3
Free elective		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

**Second Year**

**Fall**

HIS 3013	Historical Research Methods	3
Foreign language (semester I)		3-4
Language, Philosophy & Culture (core)		3
Social and Behavioral Sciences (core)		3
Component Area Option (core)		3
<b>Credit Hours</b>		<b>15-16</b>

**Spring**

Civilization course		3
Foreign language (semester II)		3-4
Free elective		3
Free elective		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15-16</b>

**Third Year**

**Fall**

Civilization course		3
Free elective		3
Upper-division free elective		3
Upper-division U.S. HIS		3
Upper-division free elective		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

Civilization course		3
Free elective		3
Upper-division European HIS		3
Upper-division HIS elective		3
Upper-division free elective		3
<b>Credit Hours</b>		<b>15</b>

**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
<b>Credit Hours</b>		<b>15</b>

**Spring**

HIS 4973	Seminar in History	3
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Upper-division HIS elective	3
Upper-division HIS elective	3
Free elective	3
Free elective (to meet 120 hour minimum)	1-3
<b>Credit Hours</b>	<b>15-13</b>
<b>Total Credit Hours</b>	<b>120</b>

## 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
<b>Total Credit Hours</b>	<b>42</b>

### 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.

Code	Title	Credit Hours
HIS 3013	Historical Research Methods	

### Degree Requirements

Code	Title	Credit Hours
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#### A. Required courses

ECO 2003	Economic Principles and Issues	3
GES 1013	Fundamentals of Geography	3
GES 1023	World Regions & Global Change	3
GES 2613	Intro to 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
HIS 3013	Historical Research Methods	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	
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

#### D. Additional courses

Select two of the following:		6
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
CI 4203	Teaching and Learning in the Secondary Classroom	3
CI 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 3083	Second Language Teaching and Learning for Grades 7-12	3
EED 2013	Introduction to Teaching and Learning 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**

		<b>Credit Hours</b>
<b>Fall</b>		
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 (core)	3
Mathematics (core)		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

AIS 1203	Academic Inquiry and Scholarship (core)	3
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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 (core)	3
Life & Physical Sciences (core)		3

**Credit Hours** **15**

**Second Year**

**Fall**

GES 1013	Fundamentals of Geography (core and major)	3
HIS 2053	Texas History	3
HIS 2123	Introduction to World Civilization to the Fifteenth Century (core and major) <sup>1</sup>	3
HIS 3013	Historical Research Methods	3
EED 2013	Introduction to Teaching and Learning 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	Intro to Physical Geography (core and major)	3
HIS 2133	Introduction to World Civilization since the Fifteenth Century <sup>1</sup>	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 3083	Second Language Teaching and Learning for Grades 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 Regions & Global Change	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**

CI 4203	Teaching and Learning in the Secondary Classroom	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
	<b>Credit Hours</b>	<b>18</b>

**Spring**

CI 4646	Clinical Teaching: Grades 7–12	6
	<b>Credit Hours</b>	<b>6</b>
	<b>Total Credit Hours</b>	<b>123</b>

HIS 3013	Historical Research Methods	3
Select one of the following:		3
HIS 2533	Introduction to Latin American Civilization	
HIS 2543	Introduction to Islamic Civilization	
HIS 2553	Introduction to East Asian Civilization	
HIS 2563	Introduction to European Civilization	
HIS 2573	Introduction to African Civilization	
HIS 2583	Introduction to South Asian Civilization	
<b>B. Upper-division history electives</b>		
Electives		9
<b>Total Credit Hours</b>		<b>18</b>

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

<sup>1</sup> 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. 233)
- Minor in History (p. 233)

## Minor in American Studies

All students pursuing a Minor in American Studies must complete 21 semester credit hours.

Code	Title	Credit Hours
<b>A. Required courses</b>		
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>B. Select two of the following:</b>		<b>6</b>
AMS 3013	Early American Culture	
AMS 3023	Modern American Culture	
AMS 4823	Topics in American Culture	
<b>Total Credit Hours</b>		<b>21</b>

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.

Code	Title	Credit Hours
<b>A. Required courses</b>		
HIS 2123	Introduction to World Civilization to the Fifteenth Century	3
or HIS 2133	Introduction to World Civilization since the Fifteenth Century	

# 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. Minors in French, German, Russian, Spanish, Comparative Literature, East Asian Studies, Foreign Languages (Chinese, Italian, Korean), 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 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. 234)
- B.A. degree in Modern Language Studies (p. 235)

## 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 forty-five 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.

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 or SPN 2333 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
<b>Total Credit Hours</b>	<b>42</b>

## Degree Requirements

Code	Title	Credit Hours
<b>A. Courses within the major</b>		
1. 6 semester credit hours of required courses		6
SPN 3043	Introduction to Literature	
SPN 3063	Grammar and Composition	
2. 9 semester credit hours of required content areas, of which 3 semester credit hours must be taken from each category:		9
<b>a. Spanish Linguistics</b>		
SPN 3013	Spanish Phonetics and Phonology	
SPN 3113	Linguistic Structures of Spanish	
SPN 4113	Topics in Spanish Linguistics	
<b>b. Spanish Translation and Interpreting</b>		
TIS 3003	Introduction to Translation and Interpreting	
TIS 3013	Translation and Interpreting for the Language Specialist	
TIS 3023	Interpreting in Legal Settings	
TIS 3033	Interpreting in Medical Settings	
TIS 3043	Advanced Practice in Healthcare Interpreting	
TIS 4013	Topics in Translation and Interpreting Studies	
<b>c. Hispanic Cultures and Literatures</b>		
SPN 3413	The Literature of Spain from the Middle Ages to 1700	
SPN 3423	The Literature of Spain from 1700 to the Present	
SPN 3463	Latin American Literature to Modernism	
SPN 3473	Latin American Literature since Modernism	

SPN 3613	Spanish Culture and Civilization	
SPN 3623	Latin American Culture and Civilization	
3. 15 additional semester credit hours of upper-division Spanish coursework, of which 9 hours must be at the 4000 level (a maximum of 3 credit hours may be taken in English (e.g. LNG)		15
<b>B. Free Electives</b>		<b>48</b>
Select 48 semester credit hours of electives.		
<b>Total Credit Hours</b>		<b>78</b>

## 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 or free elective (core and major/free elective)		3-4
WRC 1013	Freshman Composition I (core)	3
Mathematics (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15-16</b>
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
SPN 1024 or free elective (core and major/free elective)		3-4
WRC 1023	Freshman Composition II (core)	3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15-16</b>

#### 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
<b>Credit Hours</b>		<b>15</b>

#### 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
<b>Credit Hours</b>		<b>15</b>

#### Third Year

Fall		
SPN 3043	Introduction to Literature	3
SPN 3063	Grammar and Composition	3
Free elective		3
Free elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

#### Spring

Spanish Linguistics course		3
Spanish Translation and Interpreting course		3
Hispanic Literatures and Cultures course		3
Free elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

#### Fourth Year

Fall		
Upper-division SPN elective		3
Upper-division SPN elective		3
4000-level SPN elective		3
Free elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

#### Spring

4000-level SPN elective		3
4000-level SPN elective		3
Free elective		3
Free elective		3
Free elective (to meet the 120 hour minimum)		1-3
<b>Credit Hours</b>		<b>15-13</b>
<b>Total Credit Hours</b>		<b>120</b>

## 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 single 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 languages which offer upper-division courses at UTSA. For students of Spanish, these needs are met by the Bachelor of Arts degree in Spanish.

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 elective 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.

Elementary Language I course number 1014, 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
<b>Total Credit Hours</b>	<b>42</b>

### Degree Requirements

Code	Title	Credit Hours
<b>A. Courses within the major</b>		
1.	10 semester credit hours of basic language courses in a single discipline (other than SPN)	10
	Elementary Language II course number 1024	
	Intermediate Language I course number 2013	
	Intermediate Language II course number 2023	
2.	6 semester credit hours of upper-division language courses.	6
3.	18 credit hours of area-specific courses in language, linguistics, literature, and culture in the college, 12 of which must be at the upper-division level.	18
<b>B. Electives</b>		
	Select 44 semester credit hours of free electives	44
Students are encouraged to consider a double major in areas such as global studies, or take courses in additional foreign languages or other internationally focused topics. Study Abroad and Languages Across the Curriculum courses are strongly recommended.		
<b>Total Credit Hours</b>		<b>78</b>

### 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		Credit Hours
<b>Fall</b>		
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 (core)	3
	Elementary Language I course number 1014 (core and major)	4
	Life & Physical Sciences (core)	3
<b>Credit Hours</b>		<b>16</b>
<b>Spring</b>		
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 (core)	3
	Language 1024	4

Life & Physical Sciences (core)	3
Mathematics (core)	3
<b>Credit Hours</b>	<b>16</b>
<b>Second Year</b>	
<b>Fall</b>	
POL 1013 Introduction to American Politics (core)	3
Free elective	3
Intermediate Language I course number 2013	3
Lower-division area studies course	3
Social and Behavioral Sciences (core)	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
POL 1133 Texas Politics and Society (core) or POL 1213 or Civil Rights in Texas and America	3
Free elective	3
Intermediate Language II course number 2023	3
Creative Arts (core)	3
Lower-division area studies (Component Area Option core)	3
<b>Credit Hours</b>	<b>15</b>
<b>Third Year</b>	
<b>Fall</b>	
LNG 3813 Introduction to Linguistics	3
Upper-division language, literature, culture	3
Upper-division language, literature, culture	3
Free elective	3
Free elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
Upper-division language, literature, culture	3
Upper-division language, literature, culture	3
Free upper-division elective	3
Free elective	3
Free elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Fourth Year</b>	
<b>Fall</b>	
Upper-division language, literature, culture	3
Free upper-division elective	3
Free upper-division elective	3
Free upper-division elective	3
Free upper-division elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
Upper-division language, literature, culture	3
Free elective (to meet 120 hour minimum)	1
Free upper-division elective	3
Free upper-division elective	3
Free elective	3
<b>Credit Hours</b>	<b>13</b>
<b>Total Credit Hours</b>	<b>120</b>

- Minor in Comparative Literature (p. 237)
- Minor in East Asian Studies (p. 237)
- Minor in Foreign Languages (p. 238)
- Minor in French (p. 238)
- Minor in German (p. 238)
- Minor in Linguistics (p. 238)
- Minor in Russian (p. 238)
- Minor in Spanish (p. 239)
- Minor in Translation and Interpreting Studies (p. 239)

## 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.

Code	Title	Credit Hours
<b>A. Upper-division literature courses</b>		
Select 12 semester credit hours from at least two of the following disciplines: Classics, English, French, German, Italian, Russian, or Spanish		12
<b>B. Upper-division in comparative studies in the humanities</b>		
1. Comparative Literature		
CSH 3023	Studies in Comparative Literature	3
2. One course of an additional upper-division CSH course		3
<b>Total Credit Hours</b>		<b>18</b>

## Minor in East Asian Studies

All students pursuing the Minor in East Asian Studies must complete 19 semester credit hours.

Code	Title	Credit Hours
<b>A. Required Courses</b>		
CHN 1024 or JPN 1024 or KOR 1024	Elementary Chinese II Elementary Japanese II Elementary Korean II	4
CSH 4003	Colloquium in East Asian Culture	3
<b>B. 12 semester credit hours of elective courses</b>		
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 Electives	Any East Asia focused courses, including additional language courses at the 2000-level or above, or a Study Abroad, chosen in consultation with the student's advisor.	
<b>Total Credit Hours</b>		<b>19</b>

## 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 with all language skill courses at the 2000 level and above.

Code	Title	Credit Hours
<b>A. Language skill courses in the same language at the 2000 level or above</b>		
Language skill courses		6
<b>B. Language, Culture, and Linguistics courses, including FL and CSH</b>		
Select 12 semester credit hours in the department, 9 hours of which must be at the upper-division level		12
<b>Total Credit Hours</b>		<b>18</b>

## Minor in French

All students pursuing the Minor in French must complete 18 semester credit hours at the 2000 level and above.

Code	Title	Credit Hours
<b>A. Required language skill courses</b>		
FRN 2013	Intermediate French I	3
FRN 2023	Intermediate French II	3
FRN 3023	Advanced Language Skills	3
<b>B. Additional courses in French or French-related topics, including CSH and FL</b>		
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
<b>Total Credit Hours</b>		<b>18</b>

## Minor in German

All students pursuing the Minor in German must complete 18 semester credit hours at the 2000 level and above.

Code	Title	Credit Hours
<b>A. Required language skill course</b>		
GER 2013	Intermediate German I	3
GER 2023	Intermediate German II	3

GER 3023	Advanced Language Skills	3
<b>B. Additional German or German-related courses, including CSH and FL</b>		
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
<b>Total Credit Hours</b>		<b>18</b>

## 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.

Code	Title	Credit Hours
<b>A. Minor courses</b>		
ENG 3343	Principles of English Linguistics	3
or LNG 3813	Introduction to Linguistics	
<b>B. Linguistics of a particular language</b>		
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	
<b>C. Additional courses</b>		
Select two of the following in psycholinguistics, anthropological linguistics, sociolinguistics, or historical linguistics:		6
ANT 2053	Introduction to Cultural Anthropology	
ANT 2063	Language, Thought, and Culture	
BBL 3013	Language Analysis and Bilingualism	
BBL 3133	Language Development in Bilinguals	
BBL 3403	Cultural and Linguistic Equity for Schooling	
LNG 3833	Sociolinguistics	
LNG 3873	Forensic Linguistics	
LNG 4013	Topics in Linguistics	
<b>D. Two additional courses chosen in consultation with an advisor</b>		
Select two courses in one or more of the following approved areas: anthropology, bicultural-bilingual studies, English, foreign languages, and linguistics		6
<b>Total Credit Hours</b>		<b>18</b>

## Minor in Russian

All students pursuing the Minor in Russian must complete 18 semester credit hours at the 2000 level and above.

Code	Title	Credit Hours
<b>A. Required Language skill courses</b>		
RUS 2013	Intermediate Russian I	3
RUS 2023	Intermediate Russian II	3
<b>B. Additional Russian or Russian-related courses, including CSH and FL</b>		
Select 12 additional semester credit hours, 9 hours must be at the upper-division level		12
<b>Total Credit Hours</b>		<b>18</b>

## Minor in Spanish

All students pursuing the Minor in Spanish must complete 18 semester credit hours.

Code	Title	Credit Hours
<b>A. Required courses</b>		
SPN 3043	Introduction to Literature	3
SPN 3063	Grammar and Composition	3
<b>B. Upper-division Spanish courses</b>		
Select 12 semester credit hours of other upper-division Spanish courses chosen in consultation with the advisor		12
<b>Total Credit Hours</b>		<b>18</b>

## Minor in Translation and Interpreting Studies

The minor in Translation and Interpreting Studies (TIS) is intended for students with an interest in translation and interpreting between English and Spanish. The minor provides students with an opportunity to develop awareness of both the theory and the practice of language mediation in various settings, including healthcare and legal settings. The minor will provide a coherent program of study for students with intermediate-high to advanced proficiency in Spanish who are attracted to learning how to leverage their language skills in professional settings, and it will be of special interest to students interested in working in the fields of education, medicine, social work, criminal justice, and law. Coursework in the minor is supported and enhanced by existing coursework in advanced-level Spanish language as well as linguistics.

All students pursuing the Minor in Translation and Interpreting Studies must complete 18 semester credit hours.

Code	Title	Credit Hours
<b>A. Spanish courses</b>		
Select two from the following:		6
SPN 3003	Oral and Written Expression	
SPN 3033	Oral Communication Skills	
SPN 3053	Spanish for Healthcare Professionals	
SPN 3063	Grammar and Composition	
SPN 4003	Advanced Language Skills	
<b>B. Translation and Interpreting Studies courses</b>		
Select three from the following:		9
TIS 3003	Introduction to Translation and Interpreting	

TIS 3013	Translation and Interpreting for the Language Specialist	
TIS 3023	Interpreting in Legal Settings	
TIS 3033	Interpreting in Medical Settings	
TIS 3043	Advanced Practice in Healthcare Interpreting	
TIS 4013	Topics in Translation and Interpreting Studies	
<b>C. Linguistics courses</b>		
Select one from the following:		3
LNG 3813	Introduction to Linguistics	
LNG 3873	Forensic Linguistics	
SPN 3113	Linguistic Structures of Spanish	
SPN 4113	Topics in Spanish Linguistics	
SPN 4123	The Spanish of the United States	
<b>Total Credit Hours</b>		<b>18</b>

## Certificate in Healthcare Interpreting

The Certificate in Healthcare Interpreting designed to leverage the bilingual skills of Spanish- and English-speaking students who are pursuing undergraduate degrees in the biological sciences, social work, Medical Humanities, public health, or other health professions. The Certificate focuses specifically on basic concepts in translation and interpreting studies, Spanish-language training for healthcare contexts, and the theory and practice of medical interpreting. It will constitute a value-added, formal recognition of students' abilities to function accurately, compassionately and effectively in professional clinical environments in both Spanish and English.

All students pursuing the Certificate in Healthcare Interpreting (Spanish/English must complete 15 credit hours of 3000-level of coursework in SPN (Spanish for the Professions) and TIS (Translation and Interpreting Studies).

Code	Title	Credit Hours
<b>A. Spanish for the Professions (SPN) required courses</b>		
SPN 3053	Spanish for Healthcare Professionals	3
<b>B. Translation and Interpreting Studies (TIS) foundations: select two of the following</b>		
TIS 3003	Introduction to Translation and Interpreting	
TIS 3013	Translation and Interpreting for the Language Specialist	
TIS 3023	Interpreting in Legal Settings	
TIS 4013	Topics in Translation and Interpreting Studies	
<b>C. Translation and Interpreting (TIS) required healthcare courses</b>		
TIS 3033	Interpreting in Medical Settings	6
TIS 3043	Advanced Practice in Healthcare Interpreting	
TIS 5973	Topics in Translation and Interpreting Studies	
<b>Total Credit Hours</b>		<b>15</b>

## School of Music

The School 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 Education (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 School of Music is currently accredited by the National Association of Schools of Music.

### Admission to the School 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> (<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 School 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 School 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 Education:** Student Teaching (CI 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. 240)
  - Music Education Concentration (p. 241)
  - Composition Emphasis (p. 245)
  - Music Performance Emphasis (p. 246)
  - Music Marketing Emphasis (p. 252)
- B.A. degree in Music (p. 254)

### 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 Education 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 (31 semester credit hours), and the course requirements for the chosen concentration or emphasis (60 semester credit hours for Music Education and 57 credit hours for Composition, Music Performance, and Music Marketing).

All Bachelor of Music students must complete the Concert Attendance requirement. That requirement is fulfilled by earning credit for 7 semesters of MUS 2000: Music Convocation.

### 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 two of the following courses to satisfy the core requirements in Language, Philosophy and Culture and in Component Area Option: FRN 1014, GER 1014, or ITL 1014

#### 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
<b>Total Credit Hours</b>	<b>42</b>

### 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.

Code	Title	Credit Hours
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 31 semester credit hours of required music courses.

Code	Title	Credit Hours
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 <sup>1</sup>	1
MUS 1621	Class Piano 2 <sup>1</sup>	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 (core) <sup>2</sup>	3
MUS 2402	Conducting I	2
MUS 2421	Class Piano 3 <sup>1</sup>	1
MUS 2521	Class Piano 4 <sup>1</sup>	1
MUS 3213	Music in Civilization I	3
MUS 3223	Music in Civilization II	3
MUS 3413	Music Perception and Cognition	3
<b>Total Credit Hours</b>		<b>31</b>

<sup>1</sup> Keyboard principals must replace Class Piano 1-4 with MUS 1552 Functional Piano for Keyboard Principals and 2 credits of MUS 1511 Secondary Private Instruction. 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 Secondary Private Instruction.

<sup>2</sup> MUS 2243 World Music in Society should also be used to satisfy the Core Curriculum requirement in Creative Arts. The credit hours will count in that category of the degree.

## Music Education Concentration (with all-level teacher certification)

All candidates for the Music Education concentration must fulfill the Music Core Requirements as outlined above (31 semester credit hours), as well as the following course requirements necessary for this concentration (60 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.

Code	Title	Credit Hours
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### A. Principal Instrument Private Lessons 12

MUS 1512	Private Instruction	
MUS 1542	Private Instruction	
MUS 2542	Private Instruction (repeated for a total of 4 credit hours)	
MUS 3532	Private Instruction (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 Private Instruction.

### B. Performance Ensembles 6

As a special degree requirement, all students in the Music Education concentration are required to enroll in an assigned ensemble every semester except the semester of CI 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 also enroll in at least two semesters of MUS 4581 Chamber Music.

#### 1. Students pursuing the All-Level Instrumental track

MUS 3831	Principal Ensemble	
String principals must enroll in UTSA Orchestra.		
Wind and percussion principals must enroll in Wind Ensemble, Symphonic Band, or University Band (as assigned by audition).		
Guitar and keyboard principals must enroll in UTSA Orchestra, Wind Ensemble, Symphonic Band, or University Band (as assigned by audition).		

#### 2. Students pursuing the All-Level Choral Track

MUS 3831	Principal Ensemble	
Voice, guitar, and keyboard principals must enroll in Chamber Singers, Concert Choir, Women’s Choir, or Men’s Glee Club (as assigned by audition).		

### C. Concert Attendance 0

MUS 2000	Music Convocation (repeated for 7 semesters)	
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### D. Music Education Requirements 18

#### 1. Students pursuing the All-Level Instrumental track

MUS 1511	Secondary Private Instruction (two semesters) <sup>1</sup>	
or MUS 4452	Marching Band Techniques	
MUS 3153	Conducting II (Instrumental)	
MUS 3232	Wind and Percussion Literature <sup>2</sup>	
or MUS 3242	String Literature	
MUS 3311	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 <sup>2</sup>
<b>2. Students pursuing the All-Level Choral track</b>	
MUS 2601	Diction Survey
MUS 3153	Conducting II (Choral)
MUS 3272	Choral Literature
MUS 3311	Music Technology for Music Educators
MUS 3372	Choral Arranging <sup>3</sup>
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

**E. Professional Education Requirements 24**

EED 2013	Introduction to Teaching and Learning 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
CI 4213	Music Methods <sup>4</sup>
CI 4263	Secondary Music Methods
CI 4716	Clinical Teaching: All Level EC–12
LTED 3773	Reading and Writing Across the Disciplines-Grades 7–12

**F. In order to continue in the Music Education concentration at the upper-level, students must successfully complete a pre-certification interview with members of the Music Education Committee.**

**G. Students pursuing the Music Education concentration must successfully complete competency tests to receive certification as specified by the Texas State Board for Educator Certification.**

**Total Credit Hours 60**

<sup>1</sup> String principals should enroll in two semesters of MUS 1511 Secondary Private Instruction (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 Secondary Private Instruction, 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.

<sup>2</sup> Guitar and keyboard principals should select the literature and pedagogy courses that correspond with their desired public school teaching position.

<sup>3</sup> Guitar principals should substitute two semesters of MUS 1511 Secondary Private Instruction (voice).

<sup>4</sup> With music advisor approval, string, wind, and percussion students who are interested in teaching elementary general music may take CI 4213 Music Methods (elementary) instead of CI 4213 Music Methods (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 Education 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 Education (Instrumental) – Five-Year Academic Plan**

**First Year**

Fall		Credit Hours
AIS 1223 or AIS 1203	AIS: Arts and Humanities (core) or Academic Inquiry and Scholarship	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Private Instruction	2
MUS 1521	Class Piano 1 <sup>1</sup>	1
MUS 2000	Music Convocation	0
MUS 3831	Principal Ensemble	1
MUS 3801	UTSA Athletic Band (only required of wind and percussion principals) <sup>2</sup>	1
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>14</b>

**Spring**

EED 2013	Introduction to Teaching and Learning in a Culturally Diverse Society	3
MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Private Instruction	2
MUS 1621	Class Piano 2 <sup>1</sup>	1
MUS 2000	Music Convocation	0
MUS 3831	Principal Ensemble	1
WRC 1023	Freshman Composition II (core)	3
Mathematics (core)		3
<b>Credit Hours</b>		<b>17</b>

**Summer**

University core course		3
University core course		3
<b>Credit Hours</b>		<b>6</b>

**Second Year**

Fall		Credit Hours
MUS 2000	Music Convocation	0
MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2421	Class Piano 3	1
MUS 2542	Private Instruction	2
MUS 3431	Woodwind Instruments	1
MUS 3453	Teaching Elementary Music	3

MUS 3831	Principal Ensemble	1
MUS 3801	UTSA Athletic Band (only required of wind and percussion principals) <sup>2</sup>	1
University core course		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
MUS 1511	Secondary Private Instruction <sup>3</sup>	1
MUS 2000	Music Convocation	0
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	Private Instruction	2
MUS 3471	String Instruments	1
MUS 3831	Principal Ensemble	1
<b>Credit Hours</b>		<b>15</b>
<b>Summer</b>		
University core course		3
<b>Credit Hours</b>		<b>3</b>
<b>Third Year</b>		
<b>Fall</b>		
EDP 3203	Learning and Development in the Secondary School Adolescent	3
MUS 2000	Music Convocation	0
MUS 2402	Conducting I	2
MUS 2542	Private Instruction <sup>5</sup>	2
MUS 3481	Percussion Instruments	1
MUS 3831	Principal Ensemble	1
MUS 4452	Marching Band Techniques <sup>4</sup>	2
University core course		3
University core course		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
MUS 2000	Music Convocation	0
MUS 3153	Conducting II	3
MUS 3232 or MUS 3242	Wind and Percussion Literature or String Literature	2
MUS 3401	Brass Instruments	1
MUS 3421	Vocal Techniques for Instrumental Majors	1
MUS 3532	Private Instruction	2
MUS 3831	Principal Ensemble	1
University core course		3
<b>Credit Hours</b>		<b>13</b>
<b>Summer</b>		
University core course		3
University core course		3
<b>Credit Hours</b>		<b>6</b>

**Fourth Year**

<b>Fall</b>		
CI 4213	Music Methods	3
MUS 1511	Secondary Private Instruction <sup>3</sup>	1
MUS 2000	Music Convocation	0
MUS 3223	Music in Civilization II	3
MUS 3413	Music Perception and Cognition	3
MUS 3532	Private Instruction	2
MUS 3831	Principal Ensemble	1
MUS 4532	Music Pedagogy	2
<b>Credit Hours</b>		<b>13</b>
<b>Spring</b>		
CI 4263	Secondary Music Methods	3
LTED 3773	Reading and Writing Across the Disciplines-Grades 7-12	3
MUS 3213	Music in Civilization I	3
MUS 3311	Music Technology for Music Educators	1
MUS 3532	Private Instruction <sup>5</sup>	2
MUS 3831	Principal Ensemble	1
<b>Credit Hours</b>		<b>10</b>
<b>Fifth Year</b>		
<b>Fall</b>		
CI 4716	Clinical Teaching: All Level EC-12	6
<b>Credit Hours</b>		<b>6</b>
<b>Total Credit Hours</b>		<b>133</b>

- <sup>1</sup> Keyboard principals must replace Class Piano 1-4 with MUS 1552 Functional Piano for Keyboard Principals and 2 credits of MUS 1511 Secondary Private Instruction. Non-keyboard principals who test out of 1-4 semesters of Class Piano must replace those credits with an equivalent number of credits of MUS 1511 Secondary Private Instruction.
- <sup>2</sup> Special degree requirement. Not counted in total degree hours.
- <sup>3</sup> Only required of string, guitar, and keyboard principals.
- <sup>4</sup> Only required of wind and percussion principals.
- <sup>5</sup> Permitted additional semester of private instruction. Optional for students and not included in total degree hours.

**Bachelor of Music in Music Education (Choral) – Five-Year Academic Plan**

<b>First Year</b>		
<b>Fall</b>		
AIS 1223 or AIS 1203	AIS: Arts and Humanities (core) or Academic Inquiry and Scholarship	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Private Instruction	2
MUS 1521	Class Piano 1 <sup>1</sup>	1
MUS 2000	Music Convocation	0
MUS 2601	Diction Survey	1
MUS 3831	Principal Ensemble	1
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>15</b>

<b>Spring</b>		
EED 2013	Introduction to Teaching and Learning in a Culturally Diverse Society	3
MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Private Instruction	2
MUS 1621	Class Piano 2 <sup>1</sup>	1
MUS 2000	Music Convocation	0
MUS 3831	Principal Ensemble	1
WRC 1023	Freshman Composition II (core)	3
<b>Credit Hours</b>		<b>14</b>

<b>Summer</b>		
University core course		3
University core course		3
<b>Credit Hours</b>		<b>6</b>

<b>Second Year</b>		
<b>Fall</b>		
EDU 2103	Social Foundations for Education in a Diverse U.S. Society	3
MUS 2000	Music Convocation	0
MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2421	Class Piano 3 <sup>1</sup>	1
MUS 2542	Private Instruction	2
MUS 3831	Principal Ensemble	1
University core course		3
<b>Credit Hours</b>		<b>14</b>

<b>Spring</b>		
MUS 2000	Music Convocation	0
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 2402	Conducting I	2
MUS 2521	Class Piano 4 <sup>1</sup>	1
MUS 2542	Private Instruction	2
MUS 3831	Principal Ensemble	1
University core course		3
<b>Credit Hours</b>		<b>16</b>

<b>Summer</b>		
University core course		3
University core course		3
<b>Credit Hours</b>		<b>6</b>

<b>Third Year</b>		
<b>Fall</b>		
EDP 3203	Learning and Development in the Secondary School Adolescent	3
MUS 2000	Music Convocation	0
MUS 2542	Private Instruction <sup>4</sup>	2
MUS 3272	Choral Literature	2
MUS 3453	Teaching Elementary Music	3
MUS 3831	Principal Ensemble	1

University core course		3
<b>Credit Hours</b>		<b>12</b>

<b>Spring</b>		
MUS 2000	Music Convocation	0
MUS 3153	Conducting II	3
MUS 3413	Music Perception and Cognition	3
MUS 3463	Teaching Secondary Vocal Music	3
MUS 3491	Instrumental Techniques for Voice Majors	1
MUS 3532	Private Instruction	2
MUS 3831	Principal Ensemble	1
University core course		3
<b>Credit Hours</b>		<b>16</b>

<b>Summer</b>		
University core course		3
University core course		3
<b>Credit Hours</b>		<b>6</b>

<b>Fourth Year</b>		
<b>Fall</b>		
CI 4213	Music Methods	3
MUS 2000	Music Convocation	0
MUS 3213	Music in Civilization I	3
MUS 3372	Choral Arranging <sup>3</sup>	2
MUS 3831	Principal Ensemble <sup>2</sup>	1
MUS 3532	Private Instruction	2
MUS 4531	Vocal Pedagogy I	1
LTED 3773	Reading and Writing Across the Disciplines-Grades 7-12	3
<b>Credit Hours</b>		<b>14</b>

<b>Spring</b>		
CI 4263	Secondary Music Methods	3
MUS 3223	Music in Civilization II	3
MUS 3311	Music Technology for Music Educators	1
MUS 3831	Principal Ensemble <sup>2</sup>	1
MUS 4541	Vocal Pedagogy II	1
MUS 3532	Private Instruction <sup>4</sup>	2
<b>Credit Hours</b>		<b>8</b>

<b>Fifth Year</b>		
<b>Fall</b>		
CI 4716	Clinical Teaching: All Level EC-12	6
<b>Credit Hours</b>		<b>6</b>

<b>Total Credit Hours</b>		<b>133</b>
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<sup>1</sup> Keyboard principals must replace Class Piano 1-4 with MUS 1552 Functional Piano for Keyboard Principals and 2 credits of MUS 1511 Secondary Private Instruction. Non-keyboard principals who test out of 1-4 semesters of Class Piano must replace those credits with an equivalent number of credits of MUS 1511 Secondary Private Instruction.

<sup>2</sup> Special degree requirement. Not counted in total degree hours.

<sup>3</sup> Guitar principals should substitute two semesters of MUS 1511 Secondary Private Instruction (voice).

<sup>4</sup> Permitted additional semester of private instruction. Optional for students and not included in total degree hours.

## Composition Emphasis

All candidates for the Composition emphasis must fulfill the Music Core Requirements (31 semester credit hours), as well as the following course requirements for this emphasis (57 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.

Code	Title	Credit Hours
<b>A. Principal Instrument Private Lessons</b>		<b>12</b>
MUS 1512	Private Instruction	
MUS 1542	Private Instruction	
MUS 2542	Private Instruction (repeated for a total of 4 credit hours)	
MUS 3532	Private Instruction (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 Private Instruction.		
<b>B. Performance Ensembles</b>		<b>8</b>
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.		
MUS 3831	Principal Ensemble (repeated for 6 semesters)	
String principals must enroll in UTSA Orchestra.		
Wind and percussion principals must enroll in Wind Ensemble, Symphonic Band, or University Band (as assigned by audition).		
Voice, guitar, and keyboard principals must enroll in Chamber Singers, Concert Choir, Women's Choir, or Men's Glee club (as assigned by audition).		
MUS 4581	Chamber Music (repeated for a total of 2 semesters)	
<b>C. Concert Attendance</b>		<b>0</b>
MUS 2000	Music Convocation (repeated for 7 semesters)	
<b>D. Composition Lessons and Recital</b>		<b>12</b>
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	
<b>E. Upper-level Music Theory, History, and Technology</b>		<b>15</b>
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	
<b>F. Music Industry</b>		<b>3</b>
MUS 2263	Introduction to the Music Industry	
<b>G. Electives</b>		<b>7</b>
7 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.		
<b>Total Credit Hours</b>		<b>57</b>

## 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 1223 or AIS 1203	AIS: Arts and Humanities (core) or Academic Inquiry and Scholarship	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Private Instruction	2
MUS 1521	Class Piano 1 <sup>1</sup>	1
MUS 2000	Music Convocation	0
MUS 3831	Principal Ensemble	1
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>14</b>

#### Spring

MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1141	Beginning Composition	1
MUS 1542	Private Instruction	2
MUS 1621	Class Piano 2 <sup>1</sup>	1
MUS 2000	Music Convocation	0
MUS 3831	Principal Ensemble	1
WRC 1023	Freshman Composition II (core)	3
Mathematics (core)		3
<b>Credit Hours</b>		<b>15</b>

#### Summer

University core course		3
<b>Credit Hours</b>		<b>3</b>



**Second Year**

<b>Fall</b>		
MUS 2000	Music Convocation	0
MUS 2102	Aural Skills III	2
MUS 2141	Composition II	1
MUS 2152	Basic Skills of Music III	2
MUS 2402	Conducting I	2
MUS 2421	Class Piano 3 <sup>1</sup>	1
MUS 2542	Private Instruction	2
MUS 3831	Principal Ensemble	1
University core course		3
<b>Credit Hours</b>		<b>14</b>

<b>Spring</b>		
MUS 2000	Music Convocation	0
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 <sup>1</sup>	1
MUS 2542	Private Instruction	2
MUS 3831	Principal Ensemble	1
University core course		3
<b>Credit Hours</b>		<b>15</b>

<b>Summer</b>		
University core course		3
<b>Credit Hours</b>		<b>3</b>

**Third Year**

<b>Fall</b>		
MUS 2000	Music Convocation	0
MUS 2263	Introduction to the Music Industry	3
MUS 2542	Private Instruction <sup>2</sup>	2
MUS 3162	Composition III	2
MUS 3213 or MUS 3223	Music in Civilization I or Music in Civilization II	3
MUS 3831	Principal Ensemble	1
Upper-division music theory/history/technology course		3
Elective		1
University core course		3
<b>Credit Hours</b>		<b>16</b>

<b>Spring</b>		
MUS 2000	Music Convocation	0
MUS 3162	Composition III	2
MUS 3223 or MUS 3213	Music in Civilization II or Music in Civilization I	3
MUS 3532	Private Instruction	2
MUS 3831	Principal Ensemble	1
MUS 4581	Chamber Music	1
Upper-division music theory/history/technology course		3
University core course		3
<b>Credit Hours</b>		<b>15</b>

**Summer**

University core course		3
<b>Credit Hours</b>		<b>3</b>

**Fourth Year**

<b>Fall</b>		
MUS 2000	Music Convocation	0
MUS 3413	Music Perception and Cognition	3
MUS 3532	Private Instruction	2
MUS 4142	Composition IV	2
MUS 4581	Chamber Music	1
Elective		3
Upper-division music theory/history/technology course		3
University core course		3
<b>Credit Hours</b>		<b>17</b>

<b>Spring</b>		
MUS 3532	Private Instruction <sup>2</sup>	2
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
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>130</b>

<sup>1</sup> Keyboard principals must replace Class Piano 1-4 with MUS 1552 Functional Piano for Keyboard Principals and 2 credits of MUS 1511 Secondary Private Instruction. Non-keyboard principals who test out of 1-4 semesters of Class Piano must replace those credits with an equivalent number of credits of MUS 1511 Secondary Private Instruction.

<sup>2</sup> Permitted additional semester of private instruction. Optional for students and not included in total degree hours.

## Music Performance Emphasis

All candidates for the Music Performance emphasis must fulfill the Music Core Requirements (31 semester credit hours), as well as the following course requirements for this emphasis (57 semester credit hours).

Code	Title	Credit Hours
<b>A. Principal Instrument Private Lessons and Recital</b>		
MUS 1512	Private Instruction	21
MUS 1542	Private Instruction	
MUS 2542	Private Instruction (repeated for a total of 4 credit hours)	21
MUS 3543	Private Instruction (repeated for a total of 6 credit hours)	
MUS 4543	Private Instruction (repeated for a total of 6 credit hours)	21
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 Private Instruction.

**B. Performance Ensembles****8**

As a special degree requirement, students pursuing the Music Performance emphasis are required to enroll in an ensemble every semester. 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 additional details.

**1. Voice Principals**

MUS 3831	Principal Ensemble (repeated for 8 semesters)
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Possible assigned ensembles are: Chamber Singers, Concert Choir, Women's Choir, and Men's Glee Club.

**2. String Principals**

MUS 3831	Principal Ensemble (repeated for 8 semesters)
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Assigned ensemble is UTSA Orchestra.

**3. Wind and Percussion Principals**

MUS 3831	Principal Ensemble (repeated for 8 semesters)
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Possible assigned ensembles are: Wind Ensemble, Symphonic Band, and University Band

**4. Guitar Principals**

MUS 3831	Principal Ensemble (repeated for 4 semesters)
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Possible assigned ensembles are: Chamber Singers, Concert Choir, Women's Choir, and Men's Glee Club

MUS 4581	Chamber Music (Guitar Ensemble; repeated for 4 semesters)
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**5. Piano Principals**

MUS 3831	Principal Ensemble (repeated for 2 semesters)
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MUS 2501	Accompanying (repeated for 4 semesters)
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MUS 4581	Chamber Music (repeated for 2 semesters)
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**6. Organ Principals**

MUS 3831	Principal Ensemble (repeated for 4 semesters)
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MUS 4581	Chamber Music (repeated for 4 semesters)
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**C. Concert Attendance**

MUS 2000	Music Convocation (repeated for 7 semesters)
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**D. Music Technology, Industry, and Health****3**

Select 3 semester credit hours from the following:

MUS 3013	Digital Music Production
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MUS 3103	Audio Technology I
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MUS 3303	Music in Health
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MUS 3613	Entrepreneurship in Music
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**E. Music Pedagogy****2**

Select the appropriate 2 semester credit hours, based on principal instrument:

MUS 4522	Music Pedagogy for Performance Majors (strings or winds/percussion)
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MUS 4531	Vocal Pedagogy I
----------	------------------

MUS 4532	Music Pedagogy (keyboard)
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MUS 4541	Vocal Pedagogy II
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**F. Music Literature****4**

4 required credits as approved by advisor

MUS 3382	Topics in Performance Literature
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MUS 3382	Topics in Performance Literature (when topics vary) <sup>1</sup>
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or MUS 3392	Applied Performance Literature
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**G. Upper-level Music Theory****6**

Select 6 semester credit hours from the following:

MUS 3133	Analysis of Twentieth-Century Music
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MUS 3143	Orchestration <sup>2</sup>
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MUS 4113	Counterpoint
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MUS 4163	Topics in Music Theory
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**G. Additional Major Requirements and Electives****13****1. Voice Principals**

MUS 3511	Diction for Singers (English)
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MUS 3511	Diction for Singers (French)
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MUS 3511	Diction for Singers (German)
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MUS 3511	Diction for Singers (Italian)
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MUS 4581	Chamber Music (Lyric Theatre; repeated for 2 semesters)
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FRN 1024	Elementary French II <sup>3</sup>
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or GER 1024	Elementary German II
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or ITL 1024	Elementary Italian II
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Free electives (3 credits)

**2. String, Wind, and Percussion Principals**

Select 2 semesters from the following small ensembles:

MUS 3711	Mariachi Ensemble
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MUS 3771	Jazz Ensemble
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MUS 4581	Chamber Music
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Free electives (11 credits)

**3. Keyboard Principals (pedagogy focus)**

MUS 4532	Music Pedagogy (Piano; 2nd semester)
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MUS 4931	Music Internship (repeated for 2 semesters)
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Free electives (9 credits)

**4. Keyboard Principals (service music focus)**

MUS 1511	Secondary Private Instruction (repeated for 4 semesters)
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MUS 4931	Music Internship (repeated for 2 semesters)
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Free electives (7 credits)

**5. Guitar Principals**

Free electives (13 credits)

**Total Credit Hours****57**

<sup>1</sup> All students must complete MUS 3382 Topics in Performance Literature one time. To fulfill the other 2 literature credits, students can select another semester of MUS 3382 (when topics vary) or MUS 3392 Applied Performance Literature (when offered according to their principal instrument).

<sup>2</sup> String, wind, and percussion principals must select MUS 3143 Orchestration.

<sup>3</sup> The language selected here at the 1024 level must be the second semester of one of the two previously chosen languages that

were used to fulfill the Core Curriculum requirements in Language, Philosophy, and Culture and Component Area Option.

### 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 1223 or AIS 1203	AIS: Arts and Humanities (core) or Academic Inquiry and Scholarship	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Private Instruction	2
MUS 1521	Class Piano 1 <sup>1</sup>	1
MUS 2000	Music Convocation	0
MUS 3831	Principal Ensemble	1
WRC 1013	Freshman Composition I (core)	3

**Credit Hours 14**

#### Spring

MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Private Instruction	2
MUS 1621	Class Piano 2 <sup>1</sup>	1
MUS 2000	Music Convocation	0
MUS 3831	Principal Ensemble	1
WRC 1023	Freshman Composition II (core)	3
Mathematics (core)		3

**Credit Hours 14**

#### Summer

University core course		3
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**Credit Hours 3**

#### Second Year

##### Fall

MUS 2000	Music Convocation	0
MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2402	Conducting I	2
MUS 2421	Class Piano 3 <sup>1</sup>	1
MUS 2542	Private Instruction	2
MUS 3831	Principal Ensemble	1
MUS 4581	Chamber Music	1

University core course		3
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**Credit Hours 14**

#### Spring

MUS 2000	Music Convocation	0
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 <sup>1</sup>	1
MUS 2542	Private Instruction	2
MUS 3831	Principal Ensemble	1

University core course		3
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**Credit Hours 14**

#### Summer

University core course		3
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University core course		3
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**Credit Hours 6**

#### Third Year

##### Fall

MUS 2000	Music Convocation	0
MUS 3013 or MUS 3103 or MUS 3303 or MUS 3613	Digital Music Production or Audio Technology I or Music in Health or Entrepreneurship in Music	3
MUS 3213 or MUS 3223	Music in Civilization I or Music in Civilization II	3
MUS 3543	Private Instruction	3
MUS 3831	Principal Ensemble	1

Elective		3
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University core course		3
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**Credit Hours 16**

#### Spring

MUS 2000	Music Convocation	0
MUS 3143	Orchestration	3
MUS 3223 or MUS 3213	Music in Civilization II or Music in Civilization I	3
MUS 3543	Private Instruction	3
MUS 3831	Principal Ensemble	1

Elective		3
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University core course		3
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**Credit Hours 16**

#### Summer

University core course		3
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**Credit Hours 3**

#### Fourth Year

##### Fall

MUS 2000	Music Convocation	0
MUS 3382	Topics in Performance Literature	2
MUS 3413	Music Perception and Cognition	3
MUS 3831	Principal Ensemble	1
MUS 4532	Music Pedagogy (Strings or Wind/ Percussion)	2
MUS 4543	Private Instruction	3

MUS 4581	Chamber Music	1
Elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
MUS 3392 or MUS 3382	Applied Performance Literature or Topics in Performance Literature	2
MUS 3831	Principal Ensemble	1
MUS 4543	Private Instruction	3
MUS 4561	Senior Recital	1
Elective		2
University core course		3
Upper-division music theory course		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>130</b>

<sup>1</sup> Students who test out of 1-4 semesters of Class Piano must replace those credits with an equivalent number of credits of MUS 1511 Secondary Private Instruction.

### Bachelor of Music in Performance (Keyboard) – Four-Year Academic Plan

#### First Year

Fall		Credit Hours
AIS 1223 or AIS 1203	AIS: Arts and Humanities (core) or Academic Inquiry and Scholarship	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1511	Secondary Private Instruction	1
MUS 1512	Private Instruction	2
MUS 2000	Music Convocation	0
MUS 3831	Principal Ensemble	1
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>14</b>

#### Spring

MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Private Instruction	2
MUS 1552	Functional Piano for Keyboard Principals	2
MUS 2000	Music Convocation	0
MUS 3831	Principal Ensemble	1
WRC 1023	Freshman Composition II (core)	3
Mathematics (core)		3
<b>Credit Hours</b>		<b>15</b>

#### Summer

University core course		3
<b>Credit Hours</b>		<b>3</b>

#### Second Year

Fall		
MUS 1511	Secondary Private Instruction	1
MUS 2000	Music Convocation	0

MUS 2102	Aural Skills III	2
MUS 2152	Basic Skills of Music III	2
MUS 2402	Conducting I	2
MUS 2501	Accompanying	1
MUS 2542	Private Instruction	2
University core course		3
<b>Credit Hours</b>		<b>13</b>

#### Spring

MUS 2000	Music Convocation	0
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	Private Instruction	2
University core course		3
University core course		3
<b>Credit Hours</b>		<b>16</b>

#### Summer

University core course		3
<b>Credit Hours</b>		<b>3</b>

#### Third Year

Fall		
MUS 2000	Music Convocation	0
MUS 2501	Accompanying	1
MUS 3013 or MUS 3103 or MUS 3303 or MUS 3613	Digital Music Production or Audio Technology I or Music in Health or Entrepreneurship in Music	3
MUS 3213 or MUS 3223	Music in Civilization I or Music in Civilization II	3
MUS 3382	Topics in Performance Literature	2
MUS 3543	Private Instruction	3
University core course		3
<b>Credit Hours</b>		<b>15</b>

#### Spring

MUS 2000	Music Convocation	0
MUS 2501	Accompanying	1
MUS 3223 or MUS 3213	Music in Civilization II or Music in Civilization I	3
MUS 3392 or MUS 3382	Applied Performance Literature or Topics in Performance Literature	2
MUS 3543	Private Instruction	3
MUS 4581	Chamber Music	1
Elective		3
Upper-division theory course		3
<b>Credit Hours</b>		<b>16</b>

#### Summer

University core course		3
<b>Credit Hours</b>		<b>3</b>

**Fourth Year**

<b>Fall</b>		
MUS 2000	Music Convocation	0
MUS 3413	Music Perception and Cognition	3
MUS 4532	Music Pedagogy	2
MUS 4543	Private Instruction	3
MUS 4581	Chamber Music	1
MUS 4931	Music Internship	1
Elective		3
University core course		3

**Credit Hours 16**

<b>Spring</b>		
MUS 4543	Private Instruction	3
MUS 4561	Senior Recital	1
MUS 4931	Music Internship	1
Elective		3
University core course		3
Upper-division theory course		3
MUS 4532	Music Pedagogy (second semester)	2

**Credit Hours 16**

**Total Credit Hours 130**

**Bachelor of Music in Performance (Voice) – Four-Year Academic Plan**

**First Year**

<b>Fall</b>		<b>Credit Hours</b>
AIS 1223 or AIS 1203	AIS: Arts and Humanities (core) or Academic Inquiry and Scholarship	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Private Instruction	2
MUS 1521	Class Piano 1 <sup>1</sup>	1
MUS 2000	Music Convocation	0
MUS 3831	Principal Ensemble	1
MUS 3511	Diction for Singers	1
WRC 1013	Freshman Composition I (core)	3

**Credit Hours 15**

<b>Spring</b>		
MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Private Instruction	2
MUS 1621	Class Piano 2 <sup>1</sup>	1
MUS 2000	Music Convocation	0
MUS 3511	Diction for Singers	1
MUS 3831	Principal Ensemble	1
WRC 1023	Freshman Composition II (core)	3

**Credit Hours 15**

<b>Summer</b>		
University core course		3

**Credit Hours 3**

**Second Year**

<b>Fall</b>		
MUS 2000	Music Convocation	0
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 <sup>1</sup>	1
MUS 2542	Private Instruction	2
MUS 3831	Principal Ensemble	1
MUS 3511	Diction for Singers	1
University core course		3

**Credit Hours 15**

<b>Spring</b>		
MUS 2000	Music Convocation	0
MUS 2112	Aural Skills IV	2
MUS 2162	Basic Skills of Music IV	2
MUS 2402	Conducting I	2
MUS 2521	Class Piano 4 <sup>1</sup>	1
MUS 2542	Private Instruction	2
MUS 3511	Diction for Singers	1
MUS 3831	Principal Ensemble	1
University core course		3

**Credit Hours 14**

<b>Summer</b>		
University core course		3
University core course		3

**Credit Hours 6**

**Third Year**

<b>Fall</b>		
ITL 1014 or FRN 1014 or GER 1014	Elementary Italian I ( core) <sup>2</sup> or Elementary French I or Elementary German I	4
MUS 2000	Music Convocation	0
MUS 3213 or MUS 3223	Music in Civilization I or Music in Civilization II	3
MUS 3543	Private Instruction	3
MUS 3831	Principal Ensemble	1
MUS 4531	Vocal Pedagogy I	1
University core course		3

**Credit Hours 15**

<b>Spring</b>		
MUS 2000	Music Convocation	0
MUS 3223 or MUS 3213	Music in Civilization II or Music in Civilization I	3
MUS 3413	Music Perception and Cognition	3
MUS 3543	Private Instruction	3
MUS 3831	Principal Ensemble	1
MUS 3791	Lyric Theatre	1
MUS 4541	Vocal Pedagogy II	1
Elective (to meet 130 hour minimum)		1-3

**Credit Hours 13**



<b>Summer</b>			
University core course			3
	<b>Credit Hours</b>		<b>3</b>
<b>Fourth Year</b>			
<b>Fall</b>			
FRN 1014	Elementary French I (core) <sup>3</sup>		4
or ITL 1014	or Elementary Italian I		
or GER 1014	or Elementary German I		
MUS 2000	Music Convocation		0
MUS 3013	Digital Music Production		3
or MUS 3103	or Audio Technology I		
or MUS 3303	or Music in Health		
or MUS 3613	or Entrepreneurship in Music		
MUS 3382	Topics in Performance Literature		2
MUS 3831	Principal Ensemble		1
MUS 4543	Private Instruction		3
Upper-division music theory course			3
	<b>Credit Hours</b>		<b>16</b>
<b>Spring</b>			
FRN 1024	Elementary French II <sup>4</sup>		4
or GER 1024	or Elementary German II		
or ITL 1024	or Elementary Italian II		
MUS 3392	Applied Performance Literature		2
or MUS 3382	or Topics in Performance Literature		
MUS 3831	Principal Ensemble		1
MUS 3791	Lyric Theatre		1
MUS 4543	Private Instruction		3
MUS 4561	Senior Recital		1
Upper-division theory course			3
	<b>Credit Hours</b>		<b>15</b>
	<b>Total Credit Hours</b>		<b>130</b>

<sup>1</sup> Students who test out of 1-4 semesters of Class Piano must replace those credits with an equivalent number of credits from MUS 1511 Secondary Private Instruction.

<sup>2</sup> 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.

<sup>3</sup> Students should select one of these courses to fulfill the Core Curriculum requirement in Component Area Option and part of the foreign language requirement within the Performance emphasis for voice principals. Credit hours will be counted in the Core Curriculum requirement.

<sup>4</sup> Students should select a second semester of one of the foreign languages that was chosen to fulfill the core curriculum requirements in Language, Philosophy, and Culture and Component Area Option.

### Bachelor of Music in Performance (Guitar) – Four-Year Academic Plan

<b>First Year</b>			
<b>Fall</b>		<b>Credit Hours</b>	
AIS 1223	AIS: Arts and Humanities (core)		3
or AIS 1203			

		or Academic Inquiry and Scholarship	
MUS 1102	Aural Skills I		2
MUS 1112	Basic Skills of Music I		2
MUS 1512	Private Instruction		2
MUS 1521	Class Piano 1 <sup>1</sup>		1
MUS 2000	Music Convocation		0
MUS 3831	Principal Ensemble		1
WRC 1013	Freshman Composition I (core)		3
	<b>Credit Hours</b>		<b>14</b>

<b>Spring</b>			
MUS 1122	Aural Skills II		2
MUS 1132	Basic Skills of Music II		2
MUS 1542	Private Instruction		2
MUS 1621	Class Piano 2 <sup>1</sup>		1
MUS 2000	Music Convocation		0
MUS 3831	Principal Ensemble		1
WRC 1023	Freshman Composition II (core)		3
Mathematics (core)			3
	<b>Credit Hours</b>		<b>14</b>

<b>Summer</b>			
University core course			3
	<b>Credit Hours</b>		<b>3</b>

<b>Second Year</b>			
<b>Fall</b>			
MUS 2000	Music Convocation		0
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 <sup>1</sup>		1
MUS 2542	Private Instruction		2
MUS 3831	Principal Ensemble		1
University core course			3
	<b>Credit Hours</b>		<b>14</b>

<b>Spring</b>			
MUS 2000	Music Convocation		0
MUS 2112	Aural Skills IV		2
MUS 2162	Basic Skills of Music IV		2
MUS 2402	Conducting I		2
MUS 2521	Class Piano 4 <sup>1</sup>		1
MUS 2542	Private Instruction		2
MUS 3831	Principal Ensemble		1
University core course			3
University core course			3
	<b>Credit Hours</b>		<b>16</b>

<b>Summer</b>			
University core course			3
University core course			3
	<b>Credit Hours</b>		<b>6</b>

**Third Year****Fall**

MUS 2000	Music Convocation	0
MUS 3213 or MUS 3223	Music in Civilization I or Music in Civilization II	3
MUS 3382	Topics in Performance Literature	2
MUS 3543	Private Instruction	3
MUS 4581	Chamber Music (Guitar Ensemble)	1
University core course		3
University core course		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

MUS 2000	Music Convocation	0
MUS 3223 or MUS 3213	Music in Civilization II or Music in Civilization I	3
MUS 3392 or MUS 3382	Applied Performance Literature or Topics in Performance Literature	2
MUS 3543	Private Instruction	3
MUS 4581	Chamber Music (Guitar Ensemble)	1
Upper-division theory course		3
Electives		4
<b>Credit Hours</b>		<b>16</b>

**Summer**

University core course		3
<b>Credit Hours</b>		<b>3</b>

**Fourth Year****Fall**

MUS 2000	Music Convocation	0
MUS 3013 or MUS 3103 or MUS 3303 or MUS 3613	Digital Music Production or Audio Technology I or Music in Health or Entrepreneurship in Music	3
MUS 4522	Music Pedagogy for Performance Majors	2
MUS 4543	Private Instruction	3
MUS 4581	Chamber Music (Guitar Ensemble)	1
Upper-division theory course		3
Electives		4
<b>Credit Hours</b>		<b>16</b>

**Spring**

MUS 3413	Music Perception and Cognition	3
MUS 4543	Private Instruction	3
MUS 4561	Senior Recital	1
MUS 4581	Chamber Music (Guitar Ensemble)	1
Electives		5
<b>Credit Hours</b>		<b>13</b>
<b>Total Credit Hours</b>		<b>130</b>

<sup>1</sup> Students who test out of 1-4 semesters of Class Piano must replace those credits with an equivalent number of credits of MUS 1511 Secondary Private Instruction.

**Music Marketing Emphasis**

All candidates for the Music Marketing emphasis must fulfill the Music Core Requirements (31 semester credit hours), as well as the following course requirements for this emphasis (57 semester credit hours).

<b>Code</b>	<b>Title</b>	<b>Credit Hours</b>
<b>A. Principal Instrument Private Lessons</b>		<b>12</b>
MUS 1512	Private Instruction	
MUS 1542	Private Instruction	
MUS 2542	Private Instruction (repeated for a total of 4 credit hours)	
MUS 3532	Private Instruction (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 Private Instruction.		
<b>B. Performance Ensembles</b>		<b>8</b>
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.		
MUS 3831	Principal Ensemble (repeated for 6 semesters)	
String principals must enroll in UTSA Orchestra.		
Wind and percussion principals must enroll in Wind Ensemble, Symphonic Band, or University Band (as assigned by audition).		
Voice, guitar, and keyboard principals must enroll in Chamber Singers, Concert Choir, Women's Choir, or Men's Glee Club (as assigned by audition).		
MUS 4581	Chamber Music (repeated for a total of 2 semesters)	
<b>C. Concert Attendance</b>		<b>0</b>
MUS 2000	Music Convocation (repeated for 7 semesters)	
<b>D. Required Music, Accounting, and Marketing Courses</b>		<b>19</b>
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	
MUS 4971	Music Marketing Project	
<b>E. Additional Approved Courses</b>		<b>18</b>
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 for Small Business Owners	
COM 2113	Public Speaking	
COM 2343	Introduction to Mass Communication	
COM 2733	Introduction to Digital Communication	
COM 3383	Interpersonal Communication	
CS 1063	Introduction to Computer Programming I	
DS 4003	Introduction to Data Science	
DS 4013	Programming for Data Science	
ECO 2023	Introductory Microeconomics	
FIN 3003	Survey of Finance	

GBA 2013	Legal, Social and Ethical Issues in Business
MGT 3013	Introduction to Organization Theory, Behavior, and Management
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
PAL 3863	Contracts
<b>Total Credit Hours</b>	<b>57</b>

## 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 1223 or AIS 1203	AIS: Arts and Humanities (core) or Academic Inquiry and Scholarship	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Private Instruction	2
MUS 1521	Class Piano 1 <sup>1</sup>	1
MUS 2000	Music Convocation	0
MUS 3831	Principal Ensemble	1
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>14</b>

#### Spring

MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Private Instruction	2
MUS 1621	Class Piano 2 <sup>1</sup>	1
MUS 2000	Music Convocation	0
MUS 3831	Principal Ensemble	1
WRC 1023	Freshman Composition II (core)	3
Mathematics (core)		3
<b>Credit Hours</b>		<b>14</b>

#### Summer

University core course		3
<b>Credit Hours</b>		<b>3</b>

#### Second Year

Fall		Credit Hours
MUS 2000	Music Convocation	0
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	Introduction to the Music Industry	3
MUS 2421	Class Piano 3 <sup>1</sup>	1
MUS 2542	Private Instruction	2
MUS 3831	Principal Ensemble	1
<b>Credit Hours</b>		<b>14</b>

#### Spring

MUS 2000	Music Convocation	0
MUS 2112	Aural Skills IV	2
MUS 2162	Basic Skills of Music IV	2
MUS 2402	Conducting I	2
MUS 2521	Class Piano 4 <sup>1</sup>	1
MUS 2542	Private Instruction	2
MUS 3831	Principal Ensemble	1
University core course		3
University core course		3
<b>Credit Hours</b>		<b>16</b>

#### Summer

University core course		3
<b>Credit Hours</b>		<b>3</b>

#### Third Year

##### Fall

ACC 2013	Principles of Accounting I	3
MUS 2000	Music Convocation	0
MUS 3213 or MUS 3223	Music in Civilization I or Music in Civilization II	3
MUS 3532	Private Instruction	2
MUS 3831	Principal Ensemble	1
Selection from Additional Approved Courses		3
University core course		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

MKT 3013	Principles of Marketing	3
MUS 2000	Music Convocation	0
MUS 3223 or MUS 3213	Music in Civilization II or Music in Civilization I	3
MUS 3532	Private Instruction	2
MUS 3613	Entrepreneurship in Music	3
Selection from Additional Approved Courses		3
MUS 3831	Principal Ensemble	1
<b>Credit Hours</b>		<b>15</b>

##### Summer

University core course		3
<b>Credit Hours</b>		<b>3</b>

#### Fourth Year

##### Fall

MUS 2000	Music Convocation	0
MUS 3413	Music Perception and Cognition	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
<b>Credit Hours</b>	<b>16</b>
<b>Spring</b>	
MUS 4581 Chamber Music (or major ensemble)	1
MUS 4803 Seminar in Music Marketing	3
MUS 4971 Music Marketing Project	1
Selection from Additional Approved Courses	3
Selection from Additional Approved Courses	3
University core course	3
<b>Credit Hours</b>	<b>14</b>
<b>Summer</b>	
MUS 4933 Music Marketing Internship	3
<b>Credit Hours</b>	<b>3</b>
<b>Total Credit Hours</b>	<b>130</b>

<sup>1</sup> Keyboard principals must replace Class Piano 1-4 with MUS 1552 Functional Piano for Keyboard Principals and 2 credits of MUS 1511 Secondary Private Instruction. Non-keyboard principals who test out of 1-4 semesters of Class Piano must replace those credits with an equivalent number of credits of MUS 1511 Secondary Private Instruction.

## 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 Bachelor of Arts in Music students must complete the Concert Attendance requirement. That requirement is fulfilled by earning credit for 4 semesters of MUS 2000: Music Convocation.

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
<b>Total Credit Hours</b>	<b>42</b>

## 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.

Code	Title	Credit Hours
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 and non-music courses.

Code	Title	Credit Hours
<b>A. Required Music Core</b>		<b>27</b>
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 <sup>1</sup>	
MUS 1621	Class Piano 2 <sup>1</sup>	
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 <sup>2</sup>	
MUS 3013	Digital Music Production	
MUS 3213	Music in Civilization I	
MUS 3223	Music in Civilization II	
<b>B. Principal Instrument Private Lessons</b>		<b>4</b>
MUS 1512	Private Instruction	
MUS 1542	Private Instruction	
<b>C. Performance Ensembles</b>		<b>6</b>
MUS 3831	Principal Ensemble (repeated for 4 semesters)	
String principals must enroll in UTSA Orchestra.		
Wind and percussion principals must enroll in Wind Ensemble, Symphonic Band, or University Band (as assigned by audition).		
Voice, guitar, and keyboard principals must enroll in Chamber Singers, Concert Choir, Women's Choir, or Men's Glee Club (as assigned by audition).		
Two semesters of a small ensemble selected from:		
MUS 3711	Mariachi Ensemble	
MUS 3771	Jazz Ensemble	
MUS 3791	Lyric Theatre	
MUS 4581	Chamber Music	
<b>D. Concert Attendance</b>		<b>0</b>

MUS 2000	Music Convocation (repeated for 4 semesters)	
<b>E. Additional Music Requirements</b>		
1. Lower-level music courses. Select 8 semester credit hours from the following courses:		8
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 2402	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 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	Music Perception and Cognition	
MUS 3303	Music in Health	
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	
MUS 4803	Seminar in Music Marketing	
<b>F. Non-Music Electives</b>		<b>24</b>
Select 24 semester credit hours of non-music electives. At least 15 of these credit hours must be at the upper-division level.		
<b>Total Credit Hours</b>		<b>78</b>

<sup>1</sup> 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 of MUS 1511 Secondary Private Instruction.

<sup>2</sup> 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 1223 or AIS 1203	AIS: Arts and Humanities (core) or Academic Inquiry and Scholarship	3
MUS 1102	Aural Skills I	2
MUS 1112	Basic Skills of Music I	2
MUS 1512	Private Instruction	2
MUS 1521	Class Piano 1 <sup>1</sup>	1
MUS 2000	Music Convocation	0
MUS 3831	Principal Ensemble	1
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>14</b>

#### Spring

MUS 1122	Aural Skills II	2
MUS 1132	Basic Skills of Music II	2
MUS 1542	Private Instruction	2
MUS 1621	Class Piano 2 <sup>1</sup>	1
MUS 2000	Music Convocation	0
WRC 1023	Freshman Composition II (core)	3
MUS 3831	Principal Ensemble	1
Mathematics (core)		3
<b>Credit Hours</b>		<b>14</b>

#### Second Year

##### Fall

MUS 2000	Music Convocation	0
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 3831	Principal Ensemble	1
University core course		3
University core course		3
<b>Credit Hours</b>		<b>14</b>

##### Spring

MUS 2000	Music Convocation	0
MUS 2112	Aural Skills IV	2
MUS 2162	Basic Skills of Music IV	2
MUS 3013	Digital Music Production	3
MUS 3831	Principal Ensemble	1
Selection from lower-level music courses		2
Non-music elective		3



University core course	3
<b>Credit Hours</b>	<b>16</b>

**Third Year**

<b>Fall</b>		
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
<b>Credit Hours</b>		<b>16</b>

**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
<b>Credit Hours</b>		<b>16</b>

**Fourth Year**

<b>Fall</b>		
Selection from upper-level music courses		3
Non-music elective		3
Non-music elective		3
University core course		3
University core course		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

Selection from upper-level music courses		3
Non-music elective		3
Non-music elective		3
University core course		3
University core course		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120</b>

<sup>1</sup> Keyboard principals must substitute one semester of MUS 1552 Functional Piano for Keyboard Principals.

- Minor in Dance (p. 256)
- Minor in Jazz Studies (p. 256)
- Minor in Music (p. 256)
- Minor in Music Marketing (p. 257)
- Minor in Music Technology (p. 257)

## Minor in Dance

All students pursuing the Minor in Dance must complete 21 semester credit hours of dance courses.

Code	Title	Credit Hours
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
DAN 3013	Ballet III	3
or DAN 3113	Modern Dance III	
DAN 3103	History of Dance	3
<b>Total Credit Hours</b>		<b>21</b>

DAN 2783 Topics in Dance may be used as an approved substitution for 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.

Code	Title	Credit Hours
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) <sup>1</sup>	2
MUS 4183	Jazz Composition and Arranging	3
MUS 4581	Chamber Music (Jazz Combos; repeated for a total of 2 credit hours) <sup>2</sup>	2
<b>Total Credit Hours</b>		<b>18</b>

<sup>1</sup> Students should enroll in MUS 3771 Jazz Ensemble in two different semesters. Requires an audition prior to each semester of enrollment.

<sup>2</sup> 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.

Code	Title	Credit Hours
<b>A. Music Theory and Aural Skills</b>		<b>8</b>
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>B. Music History, Literature, and Industry</b>		<b>6</b>
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 2653	Music in Culture	
MUS 2663	History and Styles of Jazz	
MUS 2673	History and Styles of Rock	
MUS 2683	History and Styles of Western Art Music	
MUS 2713	History of Recorded Music	
MUS 2743	Music and Film	
<b>C. Music Technology</b>		<b>3</b>
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	
MUS 4433	Multimedia Production	
<b>D. Music Performance</b> <sup>1</sup>		<b>3</b>
Select 3 semester credit hours from the following courses. Those 3 credits must be earned through participation in three ensembles across multiple semesters. Some ensembles require an audition.		
MUS 3831	Principal Ensemble	
Possible ensembles under this course number are: Wind Ensemble, Symphonic Band, University Band, Orchestra, Chamber Singers, Concert Choir, Women's Choir, and Men's Glee Club.		
MUS 3711	Mariachi Ensemble	
MUS 3771	Jazz Ensemble	
MUS 3791	Lyric Theatre	
MUS 3801	UTSA Athletic Band	
MUS 4581	Chamber Music	
<b>Total Credit Hours</b>		<b>20</b>

<sup>1</sup> 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 19 semester credit hours of required courses.

Code	Title	Credit Hours
MUS 2263	Introduction to the Music Industry	3
MUS 2273	Introduction to Music and Art Nonprofit Organizations	3
MUS 2713	History of Recorded Music	3
MUS 3613	Entrepreneurship in Music	3
MUS 4433	Multimedia Production	3
MUS 4803	Seminar in Music Marketing	3

MUS 4971	Music Marketing Project	1
<b>Total Credit Hours</b>		<b>19</b>

## 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.

Code	Title	Credit Hours
<b>A. Required Courses</b>		<b>15</b>
MUS 3013	Digital Music Production	
MUS 3103	Audio Technology I	
MUS 3123	Introduction to Electronic and Computer Music	
MUS 3163	Audio Technology II	
MUS 4433	Multimedia Production	
<b>B. Elective Courses</b>		<b>4</b>
Select 4 semester credit hour from the following courses:		
MUS 3623	Composition with the Digital Audio Workstation	
MUS 3633	Seminar in Object-Oriented Sound Design	
MUS 4153	Audio Technology III	
MUS 4581	Chamber Music <sup>1</sup>	
MUS 4961	Music Technology Project	
<b>Total Credit Hours</b>		<b>19</b>

<sup>1</sup> 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, and Philosophy. 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. 258)
- B.A. degree in Philosophy (p. 263)

## 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 one of the following emphases:

- Classical Studies emphasis, which focuses on the language, literature, and culture of ancient Greece and Rome as foundational to humanistic studies;
- 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;
- Religious Studies emphasis, which focuses on in-depth examination of specific religious traditions and modern expressions of religion; or
- Ancient Mediterranean Studies emphasis, which allows students to study the peoples of the Ancient Mediterranean.

The minimum number of semester credit hours required for this degree is 120, including the hours of the Core Curriculum requirements. For any 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
<b>Total Credit Hours</b>	<b>42</b>

### Degree Requirements

Code	Title	Credit Hours
<b>A. Common Core</b>		<b>12</b>
Select one of the following emphases:		
Classical Studies Emphasis:		
CLA 2013	Introduction to Ancient Greece	3
CLA 2023	Introduction to Ancient Rome	3
CLA 2033	Introduction to Classical Literature	3
or CLA 2323	Classical Mythology	
or PHI 2023	Introduction to Ancient Philosophy	
CLA 4973	Senior Seminar in Classics	3
Humanities Emphasis:		
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	
Religious Studies Emphasis:		
CLA 2013	Introduction to Ancient Greece	3
CLA 2023	Introduction to Ancient Rome	3
PHI 2023	Introduction to Ancient Philosophy	3
HUM 4973	Senior Seminar in Humanities (Religious Studies emphasis)	3
Ancient Mediterranean Studies Emphasis:		
CLA 2013	Introduction to Ancient Greece	3
CLA 2023	Introduction to Ancient Rome	3
CLA 2033	Introduction to Classical Literature	3
or CLA 2323	Classical Mythology	
or PHI 2023	Introduction to Ancient Philosophy	

CLA 4973	Senior Seminar in Classics	3
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**B. Language Component** **0-8**

Select one of the following emphases:

Classical Studies Emphasis:

LAT 1114	Introductory Latin I (or equivalent)
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or GRK 1114	Introductory Classical Greek I
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LAT 1124	Introductory Latin II (or equivalent)
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or GRK 1124	Introductory Classical Greek II
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Humanities Emphasis:

Select a foreign language, modern or classical (6-8 hours)

Religious Studies Emphasis:

Select a foreign language, modern or classical (6-8 hours)

Ancient Mediterranean Studies Emphasis:

No language requirement

**C. Discipline Core** **18-24**

Select one of the following emphases:

Classical Studies Emphasis:

GRK 2113	Intermediate Classical Greek I
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or LAT 2113	Intermediate Latin I
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Five courses chosen from the following list (three of which must be 3000-level or higher):

ANT 3293	Research Methods in Archaeology
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ANT 3403	Field Course in Archaeology
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ANT 3543	Museum Studies in Anthropology
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CLA 2033	Introduction to Classical Literature
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CLA 2043	The Greek and Latin Roots of Scientific Terms
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CLA 2323	Classical Mythology
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CLA 3053	Topics in Classical Literature
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CLA 3063	Ancient Mediterranean Art and Archaeology
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CLA 3073	Science, Medicine, and Technology in Antiquity
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CLA 3083	Classics in the Modern World
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CLA 3123	Cultural Issues in Mediterranean Antiquity
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CLA 3513	Ancient Mediterranean History
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CLA 4913	Independent Study
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CLA 4953	Special Studies in Classics
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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)
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GRK 3123	Advanced Greek
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HIS 3013	Historical Research Methods
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HUM 2093	World Religions
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HUM 3023	History of Cultures
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HUM 3173	Digital Humanities
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LAT 3113	Selected Latin Authors
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LAT 3213	Advanced Latin
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MSM 3003	Fundamentals of Museum Studies
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Humanities Emphasis:

HUM 2093	World Religions
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HUM 3013	History of Ideas
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Four courses chosen from the following list (three of which must be 3000-level or higher):

CLA 3123	Cultural Issues in Mediterranean Antiquity (*)
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CLA 3513	Ancient Mediterranean History (*)
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HUM 2023	Introduction to the Humanities I
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HUM 2033	Introduction to the Humanities II
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HUM 2053	History of Film
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HUM 3023	History of Cultures (*)
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\*May be repeated for credit when topics vary

Religious Studies Emphasis:

HUM 2093	World Religions
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PHI 3013	Philosophy of Religion
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Four courses chosen from the following list (three of which must be 3000-level or higher):

ANT 3133	Ritual and Symbol
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ANT 3383	Folklore and Folklife
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ANT 3883	Death and Dying
----------	-----------------

CLA 2323	Classical Mythology
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CLA 3513	Ancient Mediterranean History (*)
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HIS 2543	Introduction to Islamic Civilization
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HUM 3123	Religion and Culture (*)
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HUM 3133	Theory and Method in the Study of Religion
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HUM 3143	Topics in Religious Studies (*)
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HUM 3213	Classics of Religious Thought (*)
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HUM 3223	Sacred Texts as Literature (*)
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HUM 3703	Topics in Popular Culture (*)
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HUM 4953	Special Studies in Humanities (*)
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PHI 3213	Ethics
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SOC 3093	Religion and Society
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Any course identified by the department as containing substantial Religious Studies content

\*May be repeated for credit when topics vary

Ancient Mediterranean Studies Emphasis (24 hours, 12 of which must be 3000-level or higher):

Courses from the Common Core (CLA 2033, CLA 2323, or PHI 2023) that were not completed for the Common Core requirement

ANT 3293	Research Methods in Archaeology
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ANT 3403	Field Course in Archaeology
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ANT 3543	Museum Studies in Anthropology
----------	--------------------------------

CLA 2043	The Greek and Latin Roots of Scientific Terms
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CLA 3053	Topics in Classical Literature (*)
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CLA 3063	Ancient Mediterranean Art and Archaeology (*)
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CLA 3073	Science, Medicine, and Technology in Antiquity (*)
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CLA 3083	Classics in the Modern World (*)
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CLA 3123	Cultural Issues in Mediterranean Antiquity (*)
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CLA 3513	Ancient Mediterranean History (*)
----------	-----------------------------------

CLA 4913	Independent Study
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CLA 4953	Special Studies in Classics (*)
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GRK 1114	Introductory Classical Greek I
GRK 1124	Introductory Classical Greek II
GRK 2113	Intermediate Classical Greek I
GRK 3000 level or higher	
HIS 3013	Historical Research Methods
HUM 3173	Digital Humanities
LAT 1114	Introductory Latin I
LAT 1124	Introductory Latin II
LAT 2113	Intermediate Latin I
LAT 3000 level or higher	
MSM 3003	Fundamentals of Museum Studies
Any course identified by the department as containing substantial Ancient Mediterranean Studies content	
*May be repeated for credit when topics vary	

**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 and Ancient Mediterranean Studies emphases include: Architecture; Language, Literature, and Humanities; History and Theory of Art and Music. Recommended disciplines for the Humanities and Religious Studies emphases include: Architecture; Mathematics and Natural Sciences; Social and Behavioral Sciences; Language, Literature, and Humanities; History and Theory of Art and Music.

**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 (core)	3
Mathematics (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>16</b>

**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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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 (core)	3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>16</b>

**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
<b>Credit Hours</b>		<b>15</b>

**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
<b>Credit Hours</b>		<b>15</b>

**Third Year**

**Fall**

LAT 2113 or GRK 2113	Intermediate Latin I or Intermediate Classical Greek I	3
Upper-division Classical Studies Emphasis elective		3
Upper-division free elective		3
Upper-division free elective		3
Component Area Option (core)		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

Classical Studies Emphasis elective		3
Classical Studies Emphasis elective		3
Free elective		3
Upper-division free elective		3
Upper-division free elective		3
<b>Credit Hours</b>		<b>15</b>

**Fourth Year**

**Fall**

Free elective		3
Upper-division Classical Studies Emphasis elective		3
Upper-division Classical Studies Emphasis elective		3
Upper-division free elective		3
Upper-division free elective		3
<b>Credit Hours</b>		<b>15</b>



**Spring**

CLA 4973	Senior Seminar in Classics	3
Free elective		1
Upper-division free elective		3
Upper-division free elective		3
Upper-division free elective		3
<b>Credit Hours</b>		<b>13</b>
<b>Total Credit Hours</b>		<b>120</b>

**B.A. in Classical Studies and Humanities, Humanities Emphasis – Four-Year Academic Plan****First Year**

<b>Fall</b>		<b>Credit Hours</b>
AIS 1203	Academic Inquiry and Scholarship (core)	3
WRC 1013	Freshman Composition I (core)	3
Foreign language (semester I)		3-4
Mathematics (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15-16</b>

**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 (core)	3
Foreign language (semester II)		3-4
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15-16</b>

**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 (core)	3
Humanities Emphasis elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

**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
<b>Credit Hours</b>		<b>15</b>

**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
<b>Credit Hours</b>		<b>15</b>

**Spring**

Upper-division free elective		3
Upper-division free elective		3
Upper-division free elective		3
Free elective		3
Component Area Option (core)		3
<b>Credit Hours</b>		<b>15</b>

**Fourth Year****Fall**

Upper-division free elective		3
Upper-division free elective		3
Upper-division free elective		3
Free elective		3
Upper-division Humanities Emphasis elective		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

HUM 4973	Senior Seminar in Humanities	3
Free elective		3
Free elective		3
Free elective (to meet 120 hour minimum)		1-3
Upper-division free elective		3
<b>Credit Hours</b>		<b>15-13</b>
<b>Total Credit Hours</b>		<b>120</b>

**B.A. in Classical Studies and Humanities, Religious Studies Emphasis – Four-Year Academic Plan****First Year**

<b>Fall</b>		<b>Credit Hours</b>
AIS 1203	Academic Inquiry and Scholarship (core)	3
WRC 1013	Freshman Composition I (core)	3
Foreign language (semester I)		3-4
Mathematics (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15-16</b>

**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 (core)	3
Foreign language (semester II)		3-4

Life & Physical Sciences (core)	3
<b>Credit Hours</b>	<b>15-16</b>

**Second Year**

**Fall**

CLA 2013	Introduction to Ancient Greece	3
HIS 1053 or HIS 1043 or HIS 2053	United States History: Civil War Era to Present (core) or United States History: Pre-Columbus to Civil War Era or Texas History	3
HUM 2093	World Religions (core)	3
Religious Studies elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

CLA 2023	Introduction to Ancient Rome	3
PHI 3013	Philosophy of Religion	3
POL 1133 or POL 1213	Texas Politics and Society or Civil Rights in Texas and America	3
Creative Arts (core)		3
Upper-division Religious Studies elective		3
<b>Credit Hours</b>		<b>15</b>

**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 Religious Studies elective		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

Upper-division free elective		3
Upper-division free elective		3
Upper-division free elective		3
Free elective		3
Component Area Option (core)		3
<b>Credit Hours</b>		<b>15</b>

**Fourth Year**

**Fall**

Upper-division Religious Studies elective		3
Upper-division free elective		3
Upper-division free elective		3
Upper-division free elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

HUM 4973	Senior Seminar in Humanities	3
Upper-division free elective		3
Free elective		3
Free elective		3

Free elective (to meet 120 hour minimum)	1-3
<b>Credit Hours</b>	<b>15-13</b>

<b>Total Credit Hours</b>	<b>120</b>
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**B.A. in Classical Studies and Humanities, Ancient Mediterranean Studies Emphasis – Four-Year Academic Plan**

**First Year**

**Fall**

AIS 1203	Academic Inquiry and Scholarship (core)	3
WRC 1013	Freshman Composition I (core)	3
CLA 2033, or CLA 2323, or PHI 2023 (core)		3
Mathematics (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

**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 (core)	3
CLA 2033, or CLA 2323, or PHI 2023 (core)		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

**Second Year**

**Fall**

CLA 2013	Introduction to Ancient Greece	3
HIS 1053 or HIS 1043 or HIS 2053	United States History: Civil War Era to Present (core) or United States History: Pre-Columbus to Civil War Era or Texas History	3
Free elective		3
Social and Behavioral Sciences (core)		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

CLA 2023	Introduction to Ancient Rome	3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
CLA 2033, or CLA 2323, or PHI 2023 (core)		3
Free elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

**Third Year**

**Fall**

Social and Behavioral Sciences (core)		3
Upper-division Ancient Mediterranean Studies Emphasis elective		3
Upper-division free elective		3
Upper-division free elective		3

Ancient Mediterranean Studies elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
Upper-division Ancient Mediterranean Studies Emphasis elective	3
Upper-division Ancient Mediterranean Studies Emphasis elective	3
Upper-division free elective	3
Upper-division free elective	3
Ancient Mediterranean Studies elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Fourth Year</b>	
<b>Fall</b>	
Upper-division Ancient Mediterranean Studies Emphasis elective	3
Upper-division free elective	3
Upper-division free elective	3
Upper-division free elective	3
Free elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
CLA 4973 Senior Seminar in Classics	3
Upper-division free elective	3
Free elective	3
Free elective	3
Free elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

## 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

<b>Core Curriculum Component Area Requirements (p. 7)</b>	
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
<b>Total Credit Hours</b>	<b>42</b>

## Degree Requirements

Code	Title	Credit Hours
<b>A. Required courses</b>		
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>B. Single language other than English</b>		
	Select 6 semester credit hours in a single language other than English	6
<b>C. Approved support work</b>		
	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.	39
<b>Total Credit Hours</b>		<b>78</b>

## 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

<b>First Year</b>		
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
WRC 1013	Freshman Composition I (core)	3
	Foreign language (semester I)	3-4
	Mathematics (core)	3
	Life & Physical Sciences (core)	3
<b>Credit Hours</b>		<b>15-16</b>

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 (core)	3
Foreign language (semester II)		3-4
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15-16</b>

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
PHI 2013	Basic Philosophical Problems	3
PHI 2023	Introduction to Ancient Philosophy	3
Language, Philosophy & Culture (core)		3
Support work		3
<b>Credit Hours</b>		<b>15</b>

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
<b>Credit Hours</b>		<b>15</b>

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
<b>Credit Hours</b>		<b>15</b>

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
<b>Credit Hours</b>		<b>15</b>

Fourth Year		
Fall		
PHI 4000-level elective		3
Free elective		3

Free elective	3
Upper-division free elective	3
Upper-division free elective	3
<b>Credit Hours</b>	<b>15</b>

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
<b>Credit Hours</b>		<b>15-13</b>
<b>Total Credit Hours</b>		<b>120</b>

- Minor in Classical Studies (p. 264)
- Minor in Humanities (p. 264)
- Minor in Philosophy (p. 265)
- Minor in Religious Studies (p. 265)

## Minor in Classical Studies

All students pursuing the minor in Classical Studies must complete 21 semester credit hours.

Code	Title	Credit Hours
<b>A. Minor requirements</b>		
LAT 2113 or GRK 2113	Intermediate Latin I (or equivalent) Intermediate Classical Greek I	3
<b>B. Required courses</b>		
CLA 2013	Introduction to Ancient Greece	3
CLA 2023	Introduction to Ancient Rome	3
CLA 2033	Introduction to Classical Literature	3
<b>C. Three additional courses in Classics, Greek, or Latin</b>		
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)		9
<b>Total Credit Hours</b>		<b>21</b>

## Minor in Humanities

All students pursuing the Minor in Humanities must complete 21 semester credit hours.

Code	Title	Credit Hours
<b>A. Minor requirements</b>		
HUM 3013	History of Ideas	3
<b>B. Three background courses</b>		
Select one course from each of the following groups		9
1. Group 1		
AHC 1113	Art History I	
AHC 1123	Art History II	
2. Group 2		
CLA 2013	Introduction to Ancient Greece	
CLA 2023	Introduction to Ancient Rome	

CLA 2033	Introduction to Classical Literature	
<b>3. Group 3</b>		
PHI 2013	Basic Philosophical Problems	
PHI 2023	Introduction to Ancient Philosophy	
PHI 2033	Introduction to Early Modern Philosophy	
<b>C. Additional upper-division coursework in humanities</b>		
Select 9 additional semester credit hours of upper-division coursework in Humanities		9
<b>Total Credit Hours</b>		<b>21</b>

Any course identified by the department as containing substantial Religious Studies content.	
<b>Total Credit Hours</b>	<b>21</b>

## Minor in Philosophy

All students pursuing the Minor in Philosophy must complete 21 semester credit hours.

Code	Title	Credit Hours
<b>A. Required courses</b>		
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>B. Additional upper-division courses in Philosophy</b>		
Additional coursework		3
<b>Total Credit Hours</b>		<b>21</b>

## Minor in Religious Studies

All students pursuing the Minor in Religious Studies must complete 21 semester credit hours.

Code	Title	Credit Hours
<b>A. Required courses</b>		
HUM 2093	World Religions	3
PHI 3013	Philosophy of Religion	3
<b>B. Select five courses from the following:</b>		
AHC 1113	Art History I	
ANT 3133	Ritual and Symbol	
ANT 3883	Death and Dying	
CLA 2323	Classical Mythology	
CLA 3123	Cultural Issues in Mediterranean Antiquity	
HIS 2543	Introduction to Islamic Civilization	
HUM 3123	Religion and Culture	
HUM 3133	Theory and Method in the Study of Religion	
HUM 3143	Topics in Religious Studies	
HUM 3213	Classics of Religious Thought	
HUM 3223	Sacred Texts as Literature	
HUM 4973	Senior Seminar in Humanities	
PHI 3073	Asian Philosophy	
PHI 4973	Seminar for Philosophy Majors	
SOC 3093	Religion and Society	



## 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 Departmental Honors 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. 266)
- B.A. degree in Global Affairs (p. 268)
- B.A. degree in Political Science (p. 270)
- B.A. degree in Politics and Law (p. 273)

### 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
<b>Total Credit Hours</b>	<b>42</b>

### Degree Requirements

Code	Title	Credit Hours
<b>A. Courses in the major</b>		
40 semester credit hours in the major, 24 must be at the upper-division level.		
1. Required courses:		16
GES 2613	Intro to Physical Geography	
GES 2623	Human Geography: People, Place, Culture	
GES 3003	Global Sustainability	
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 Regions & Global Change	
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 3423	Geopolitics of Russia and Eurasia	
GES 3433	The Geography and Politics of the Asian Rim	
GES 4856	Study Abroad	

4. Select 12 additional credit hours of Geography and Environmental Sustainability electives. These may include courses from the following lists:

#### Earth science, resources, and the environment

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 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 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:

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

Code	Title	Credit Hours
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#### 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 Regions & Global Change (*)	3
GES 2613	Intro to Physical Geography (*)	3
GES 2623	Human Geography: People, Place, Culture	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

<b>F. Teacher Certification courses</b>	<b>33</b>
<b>Total Credit Hours</b>	<b>105</b>

### 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	Intro to 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 (core)	3
<b>Credit Hours</b>		<b>15</b>

##### Spring

GES 1013 or GES 1023	Fundamentals of Geography or World Regions & Global Change	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 (core)	3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

##### Second Year

Fall		Credit Hours
GES 2623	Human Geography: People, Place, Culture (core and major)	3
Creative Arts (core)		3
Free elective		3
Free elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

Component Area Option (core)	3	
Language, Philosophy & Culture (core)	3	
Mathematics (core)	3	
Free elective	3	
Free elective	3	
<b>Credit Hours</b>		<b>15</b>

##### Third Year

Fall		Credit Hours
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
<b>Credit Hours</b>		<b>15-16</b>

##### 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
<b>Credit Hours</b>		<b>15-16</b>

##### Fourth Year

Fall		Credit Hours
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
<b>Credit Hours</b>		<b>16</b>
Spring		Credit Hours
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
<b>Credit Hours</b>		<b>14-12</b>
<b>Total Credit Hours</b>		<b>120</b>

### 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
<b>Total Credit Hours</b>	<b>42</b>

## Degree Requirements

Code	Title	Credit Hours
<b>A. Courses in the major</b>		
45 semester credit hours in the major, 30 of which must be at the upper-division level.		
1. Required introductory courses on global affairs:		9
GLA 1013	US in Global Context	
GLA 2603	Introduction to Global Politics *	
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	
POL 2703	Scope and Methods	
3. Select three of the following Foundations of Global Affairs courses:		9
GLA 3003	International Law	
GLA 3213	Theories of International Relations	
GLA 3233	Justice in International Relations	
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 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	Global 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 3733	National Security Law	
GLA 4133	Conflict, Law, and Security in Global Affairs	
GLA 4213	The Intelligence Community in World Affairs	
GLA 4243	Terrorism and Counter-Terrorism	
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 Developing World	
GLA 3473	Latin America in the World	
GLA 3493	Politics of the Middle East	
GLA 4853	Study Abroad: Global Affairs	
6. Senior seminar course:		3
GLA 4973	Senior Seminar	
<b>B. A single language other than English</b>		
6 semester credit hours of a language		6
<b>C. Electives</b>		
27 semester credit hours of electives		27
<b>Total Credit Hours</b>		<b>78</b>

\* 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**

		Credit Hours
<b>Fall</b>		
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 (core)	3
Mathematics (core)		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

GLA 1013	US in Global Context (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 (core)	3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

**Second Year**

		Credit Hours
<b>Fall</b>		
GLA 2603	Introduction to Global Politics	3
Life & Physical Sciences (core)		3
Social & Behavioral Sciences (core)		3
Free elective		3
GLA elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
POL 2693	Designing Research in Political Science	3
GLA elective		3
Creative Arts (core)		3
Component Area Option (core)		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

**Third Year**

		Credit Hours
<b>Fall</b>		
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
<b>Credit Hours</b>		<b>15-16</b>

**Spring**

Foreign language (semester II)	3-4	
Upper-division free elective	3	
Upper-division GLA course	3	
GLA elective	3	
Free elective	3	
<b>Credit Hours</b>		<b>15-16</b>

**Fourth Year**

		Credit Hours
<b>Fall</b>		
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
<b>Credit Hours</b>		<b>15</b>

**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
<b>Credit Hours</b>		<b>15-13</b>
<b>Total Credit Hours</b>		<b>120</b>

**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
<b>Total Credit Hours</b>	<b>42</b>

## Degree Requirements

Code	Title	Credit Hours
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### A. 39 hours in the major

Courses must be selected in the following manner:

1. Required methods courses:	6
POL 2693	Designing Research in Political Science
POL 2703	Scope and Methods
2. Gateway courses. Select two courses from the list below:	6
GLA 2603	Introduction to Global Politics (Credit cannot be earned for both GLA 2603 and POL 2603.)
or POL 2603	Introduction to Global Politics
POL 2503	Introduction to Political Theory
POL 2533	Introduction to Political Science
POL 2513	Politics and the Administrative Process
POL 2623	Law and Society
POL 2633	Comparative Politics
3. Political science electives. 24 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:	24

#### 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 and American Politics
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 3653	Federalism
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 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 Developing World
POL 3473	Latin America in the World
POL 3493	Politics of the Middle East
POL 3553	The Welfare State in Comparative Perspective
POL 3633	Political Economy
POL 3783	Democracy and World Politics
POL 4023	Techniques in Global Analysis

#### International Politics

GLA 3003	International Law
GLA 3213	Theories of International Relations
GLA 3233	Justice in International Relations
GLA 3533	The United Nations
GLA 3483	International Political Economy
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 4243	Terrorism and Counter-Terrorism
POL 3033	Global 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 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

POL 3003	Environmental Law
PAL 3113	Minorities and the Law
PAL 3413	Regulatory Law and Enterprise
PAL 3863	Contracts

PAL 4213	Great Controversies in Politics and Law
PAL 4223	Torts through the Case Method
PAL 4233	Federal Courts
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 4133	Politics, Law, and Literature
POL 4323	Administrative Law and Politics

**4. Capstone Experience** 3

Students must select 1 from the following list

POL 4933	Internship in Political Science
POL 4853	Study Abroad: Political Science
POL 4973	Seminar in Political Science
POL 4983	Research Practicum
POL 4993	Honors Thesis

**B. Electives**

Select 39 semester credit hours of electives. 39

**Total Credit Hours** 78

**Degree Requirements: B.A. Degree in Political Science – Social Studies Teaching Track**

Code	Title	Credit Hours
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**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 Regions & Global Change	3
GES 2613	Intro to 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 3153	Geography of Texas
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 3283	The American Presidency
POL 3293	Political Movements
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
POL 3653	Federalism

**E. Upper-division Political Science courses**

12 semester credit hours of upper-division POL courses 12

**F. Teacher Certification courses** 33

**Total Credit Hours** 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 1273 AIS: Social Sciences and Public Policy	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 (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 2533	Introduction to Political Science	3
WRC 1023	Freshman Composition II (core)	3
Life & Physical Sciences (core)		3

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**Credit Hours** **15**
**Second Year****Fall**

POL 2503 or POL 2513 or POL 2603 or POL 2623 or POL 2633	Introduction to Political Theory or Politics and the Administrative Process or Introduction to Global Politics or Law and Society 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

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**Credit Hours** **15**
**Spring**

POL 2503 or POL 2513 or POL 2603 or POL 2623 or POL 2633	Introduction to Political Theory or Politics and the Administrative Process or Introduction to Global Politics or Law and Society or Comparative Politics	3
Free elective		3
Free elective		3
Language, Philosophy & Culture (core)		3
Component Area Option (core)		3

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**Credit Hours** **15**
**Third Year****Fall**

POL 2703	Scope and Methods	3
Upper-division POL - American Politics		3
Free elective		3
Upper-division free elective		3
Upper-division free elective		3

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**Credit Hours** **15**
**Spring**

Upper-division POL elective		3
Free elective		3
Free elective		3
Upper-division free elective		3
Upper-division POL - Comparative Politics		3

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**Credit Hours** **15**
**Fourth Year****Fall**

Upper-division free elective	3
Upper-division free elective	3
Upper-division POL elective	3
Upper-division POL - International Politics	3
Upper-division POL - Political Theory	3

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**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

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**Credit Hours** **15**


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**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
<b>Total Credit Hours</b>	<b>42</b>

### Degree Requirements

Code	Title	Credit Hours
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#### 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	5. 6 semester credit hours of additional politics and law related	6
PAL 2013      Introduction to Legal Studies		electives selected from the following list and chosen with consent of	
PAL 2623      Law and Society		the advisor. POL or PAL 4933/6 Internship in Politics may be used to	
POL 2503      Introduction to Political Theory		satisfy up to 6 hours of this requirement, if internship focuses on a	
2. Required social science research methods course:	3	law-related experience:	
POL 2693      Designing Research in Political Science		ANT 3733      Political and Legal Anthropology	
3. One writing course selected from the following:	3	BLW 3013      Business Law for Small Business Owners	
PAL 3023      Legal Research and Writing		CLA 3053      Topics in Classical Literature	
WRC 3013      Writing Strategies for the Pre-law Student		CLA 3513      Ancient Mediterranean History	
4. Emphasis electives. 18 semester credit hours of courses	18	CRJ 2623      Substantive Criminal Law	
selected from the lists below with at least 12 hours taken in a single		CRJ 4633      Constitutional Criminal Procedure	
emphasis:		ECO 2003      Economic Principles and Issues	
<b>Law and Society Emphasis</b>		ECO 3163      Evolution of Economic Thought	
GLA 3003      International Law		ENG 3223      Shakespeare: The Early Plays	
GLA 3233      Justice in International Relations		ENG 3233      Shakespeare: The Later Plays	
PAL 3113      Minorities and the Law		ENG 3323      History of the English Language	
PAL 3223      Judicial Politics		ES 3203      Environmental Law	
PAL 3583      Jurisprudence		GLA 3003      International Law	
PAL 4013      Issues in Law and Society		GLA 3033      Global Governance	
PAL 4123      Legal and Philosophical Reasoning		GLA 3043      International Human Rights	
POL 3113      American Political Thought		GLA 3233      Justice in International Relations	
POL 3133      Political Philosophy: Ancient and Medieval		GLA 3513      International Organizations in World	
POL 3143      Political Philosophy: Modern		Politics	
POL 3153      Political Philosophy: Contemporary		GLA 3483      International Political Economy	
POL 3323      Constitutional Law I		PAD 2013      Introduction to Public Policy	
POL 3333      Constitutional Law II		PAD 3023      Introduction to Urban Management and	
POL 3643      Justice among Nations		Policy	
POL 4133      Politics, Law, and Literature		PAD 3033      Introduction to Nonprofit Agencies	
<b>Law and Governmental Affairs Emphasis</b>		PAD 3043      Public and Nonprofit Financial	
GLA 3513      International Organizations in World		Management	
Politics		PAD 3113      Managing Nonprofit Organizations	
PAL 3003      Environmental Law		PAD 3153      Administrative Law and Policy	
PAL 3013      The American Legal Process		PAL 3113      Minorities and the Law	
PAL 3313      The Supreme Court		PAL 3213      Law School Studies	
PAL 3413      Regulatory Law and Enterprise		PAL 3223      Judicial Politics	
PAL 3513      Trial and Appellate Advocacy		PAL 3313      The Supreme Court	
PAL 3533      State Courts: Judicial Decision-Making		PAL 3413      Regulatory Law and Enterprise	
Practice and Procedure		PAL 3583      Jurisprudence	
POL 3653      Federalism		PAL 3813      Politics of Federal Justice Policy	
PAL 3813      Politics of Federal Justice Policy		PAL 3843      Campaign and Election Law	
PAL 3843      Campaign and Election Law		PAL 3853      Immigration Law	
PAL 3853      Immigration Law		PAL 3863      Contracts	
PAL 3863      Contracts		PAL 3813      Politics of Federal Justice Policy	
PAL 4013      Issues in Law and Society		PAL 4013      Issues in Law and Society	
PAL 4223      Torts through the Case Method		PAL 4123      Legal and Philosophical Reasoning	
PAL 4233      Federal Courts		PAL 4223      Torts through the Case Method	
PAL 4323      Administrative Law and Politics		PAL 4233      Federal Courts	
POL 3173      Justice and Social Policy		PAL 4323      Administrative Law and Politics	
POL 3373      The Legislative Process		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 3633	Political Economy
POL 3643	Justice among Nations
POL 4133	Politics, Law, and Literature
POL 4933	Internship in Political Science

6. Capstone experience 3

Students must select 1 from the following menu

PAL 4933	Internship in Politics and Law
PAL 4973	Senior Seminar in Politics and Law
POL/GLA 4853	Study Abroad: Political Science
POL 4983	Research Practicum
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.
PAL 4993	Honors Thesis

#### 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
<b>Fall</b>		
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 (core)	3
Mathematics (core)		3
<b>Credit Hours</b>		<b>15</b>

#### 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 (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
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
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
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
PAL concentration elective		3
PAL elective		3
Free elective		3



Free elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
Free elective	3
Free elective	3
Upper-division free elective	3
Upper-division free elective	3
Upper-division free elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

- Minor in Geography and Environmental Sustainability (p. 276)
- Minor in Global Affairs (p. 276)
- Minor in Intelligence and Security Studies (p. 276)
- Minor in Political Science (p. 277)
- Minor in Politics and Law (p. 278)

## Minor in Geography and Environmental Sustainability

All students pursuing the Minor in Geography must complete 18 semester credit hours.

Code	Title	Credit Hours
<b>A. Courses in core concepts and regions</b>		
GES 1013	Fundamentals of Geography	3
GES 1023	World Regional Geography	3
<b>B. Upper-division regional geography</b>		
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	
<b>C. Electives in geography</b>		
Select 9 semester credit hours of upper-division electives in geography		9
<b>Total Credit Hours</b>		<b>18</b>

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).

Code	Title	Credit Hours
<b>A. Two introductory courses on global affairs:</b>		
GLA 1013	US in Global Context	6
and one of the following:		
GLA 2603	Introduction to Global Politics (POL 2603 can substitute for GLA 2603)	
GLA 2633	Comparative Politics	
<b>B. Select one of the following Research Methods courses</b>		
GLA 3103	Research Methods in Global Affairs	3
POL 2693	Designing Research in Political Science	
POL 2703	Scope and Methods	
<b>C. Additional courses</b>		
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	
<b>Total Credit Hours</b>		<b>18</b>

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.

Code	Title	Credit Hours
<b>A. Core courses</b>		
GLA 2103	Introduction to Intelligence Studies	6
GLA 3343	National Security in the Global Context	
<b>B. Disciplinary core</b>		
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 4133	Conflict, Law, and Security in Global Affairs	
GLA 4123/POL 4023	Analytical Methods for National Security and Intelligence Decision-Making	
GLA 4213	The Intelligence Community in World Affairs	
GLA 4243	Terrorism and Counter-Terrorism	
<b>C. Intelligence and Security Studies elective</b>		

Select one course from the list below: 3

COM 3553	Intercultural Communication
COM 3563	International Communication
CSH 3823	Advanced Topics in World Cultures
ECO 3193	International Economics
GES 3314	Introduction to Geographic Information Systems
GES 3633	Geography of Globalization and Development
GES 3643	Political Geography
GLA 3033	Global Governance
GLA 3513	International Organizations in World Politics
GLA 3533	The United Nations
GLA 3543	Diplomacy
GLA 3783	Democracy and World Politics
HIS 3543	History of Modern Warfare
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 Developing World
POL 3493	Politics of the Middle East
POL 4953	Special Studies in Political Science
HTH 4043	Global Health

#### 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

## 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.

Code	Title	Credit Hours
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#### A. Lower-division courses

Select two of the following: 6

GLA 2603	Introduction to Global Politics (Credit cannot be earned for both GLA 2603 and POL 2603.)
or POL 2603	Introduction to Global Politics
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	Scope and Methods

#### 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 and American Politics
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	Analytical Methods for National Security and Intelligence Decision-Making
or POL 4023	Techniques in Global Analysis
GLA 4133	Conflict, Law, and Security in Global Affairs
POL 3463	Politics of the Developing World
or GLA 3463	Politics of the Developing World
POL 3553	The Welfare State in Comparative Perspective
<b>International Politics</b>	
GLA 3003	International Law
GLA 3033	Global Governance
or POL 3033	Global 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	Analytical Methods for National Security and Intelligence Decision-Making
or POL 4023	Techniques in Global Analysis
GLA 4133	Conflict, Law, and Security in Global Affairs
<b>Political Theory</b>	
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
<b>Public Law and Administrative Process</b>	
PAL 3863	Contracts
POL 3003	Environmental Law
POL 3013	The American Legal Process
POL 3413	Urban Development: Politics Planning, and Power
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 3653	Federalism
POL 3813	Politics of Federal Justice Policy Making
POL 3843	Campaign and Election Law
POL 3853	Immigration Law
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.

Code	Title	Credit Hours
<b>A. 15 semester credit hours of required courses</b>		
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	Justice in International Relations	
PAL 3113	Minorities and the Law	
PAL 3213	Law School Studies	
PAL 3223	Judicial Politics	
PAL 3313	The Supreme Court	
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	
POL 3653	Federalism	
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 through the Case Method	
PAL 4233	Federal Courts	

PAL/POL 4323	Administrative Law and Politics	PAL 4123	Legal and Philosophical Reasoning
PAL 4933	Internship in Politics and Law	PAL 4133	Legal Analysis and Argumentation
POL 3113	American Political Thought	PAL 4223	Torts through the Case Method
POL 3323	Constitutional Law I	PAL 4233	Federal Courts
POL 3333	Constitutional Law II	PAL 4323	Administrative Law and Politics
POL 4133	Politics, Law, and Literature	or POL 4323	Administrative Law and Politics
<b>B. 3 additional semester credit hours selected from the following:</b>	<b>3</b>	POL 2513	Politics and the Administrative Process
ANT 3733	Political and Legal Anthropology	POL 3113	American Political Thought
BLW 3013	Business Law for Small Business Owners	POL 3133	Political Philosophy: Ancient and Medieval
CLA 3053	Topics in Classical Literature	POL 3143	Political Philosophy: Modern
CLA 3513	Ancient Mediterranean History	POL 3153	Political Philosophy: Contemporary
CRJ 2623	Substantive Criminal Law	POL 3173	Justice and Social Policy
CRJ 4633	Constitutional Criminal Procedure	POL 3323	Constitutional Law I
ECO 2003	Economic Principles and Issues	POL 3333	Constitutional Law II
ECO 3163	Evolution of Economic Thought	POL 3373	The Legislative Process
ENG 3223	Shakespeare: The Early Plays	PAL 3583	Jurisprudence
ENG 3233	Shakespeare: The Later Plays	POL 3643	Justice among Nations
ENG 3323	History of the English Language	POL 4133	Politics, Law, and Literature
ES 3203	Environmental Law	POL 4933	Internship in Political Science
GLA 3003	International Law	<b>Total Credit Hours</b>	<b>18</b>
GLA 3033	Global Governance		
or POL 3033	Global Governance		
GLA 3043	International Human Rights		
or POL 3043	International Human Rights		
GLA 3233	Justice in International Relations		
GLA 3513	International Organizations in World Politics		
or POL 3513	International Organizations in World Politics		
GLA 3633	Political Economy		
or POL 3633	Political Economy		
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 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		

## 9. COLLEGE OF SCIENCES

### Mission Statement

The College of Sciences is committed to preparing the next generation of scientists and researchers, science leaders, and science educators. The College of Sciences aims to: 1) Advance scientific literacy through excellence in education and community outreach; 2) Conduct cutting-edge research to expand the frontiers of science and mathematics; 3) Establish broad partnerships to enhance scientific competence at all levels; 4) Provide leadership in the education of underrepresented and disadvantaged groups; and 5) Support the engagement of faculty and students in global partnerships linked to science and education.

### Vision Statement

The College of Sciences envisions itself as a leading institution of higher learning in sciences and mathematics with local and global impact.

### General Information

The College of Sciences is made up of eight departments: Chemistry (p. 281); Computer Science (p. 288); Earth and Planetary Sciences (p. 296); Integrative Biology (p. 304); Mathematics (p. 322); Molecular Microbiology and Immunology (p. 328); Neuroscience, Developmental and Regenerative Biology (p. 331); and Physics and Astronomy (p. 335). Faculty in the College of Sciences are nationally and internationally recognized researchers and leaders in their field whose work has both local and global impacts. The College offers state-of-the-art facilities and equipment for research and teaching activities. Students will also have opportunities to collaborate with faculty and researchers across the university as well as industry partners. The College of Sciences is a major collaborator with the UTSA School of Data Science with the departments of Computer Science and Mathematics serving as constituent departments.

The College of Sciences is dedicated to supporting students throughout their academic careers at UTSA as they build and grow their science identity. COS offers a variety of scholarships (<https://sciences.utsa.edu/student/scholarships.html>), opportunities to participate in STEM Programs (<https://sciences.utsa.edu/about/stem.html>), and research (<https://sciences.utsa.edu/research/>) endeavors. Furthermore, our COS Student Success Center (<https://sciences.utsa.edu/student/>) is a comprehensive resource center for all science students. For more information related to the College, visit the main webpage at <https://sciences.utsa.edu/>.

### Admission to the College of Sciences

Applicants to a major in the College of Sciences must meet all UTSA undergraduate admissions requirements as well as any department-specific criteria for direct admission. See the Department of Chemistry (p. 281) and the Department of Computer Science (p. 288) catalog sections for their respective direct admission criteria.

### Degree Programs

The College offers 18 undergraduate degree programs and nine minors. See individual department catalog sections for more information about these undergraduate programs.

Department	Degrees	Minors
Chemistry	B.S. Biochemistry B.S. Chemistry B.A. Chemistry	Chemistry
Computer Science	B.S. Computer Science B.A. Computer Science with Teaching Track	Computer Science
Earth and Planetary Sciences	B.S. Geosciences B.A. Geosciences	Geology
Integrative Biology	B.S. Biology B.S. Environmental Science B.A. Environmental Studies B.S. Multidisciplinary Science	Biology Environmental Science
Mathematics	B.S. Mathematics B.S. Mathematics for Teaching B.S. Mathematics of Data and Computing	Mathematics
Molecular Microbiology and Immunology	B.S. Microbiology and Immunology	
Neuroscience, Developmental and Regenerative Biology	B.S. Neuroscience	Neuroscience
Physics and Astronomy	B.S. Physics B.A. Physics	Astronomy/ Astrophysics Physics

### UTeachSA - Secondary STEM Teacher Preparation Program

UTeachSA is the preparation program in the College of Sciences that prepares students to become secondary (middle school and high school) science and mathematics teachers. Students earn a College of Sciences degree while also taking education courses leading to certification with the following options: 8-12 Computer Science, 7-12 Life Sciences, 7-12 Science (Composite), 7-12 Mathematics, and 6-12 Physical Science. UTeachSA currently offers the following teacher preparation degrees as outlined in the catalog: B.S. Biology with 7-12 Biology Teacher Certification, B.A. Computer Science with Teaching Track, B.S. Multidisciplinary Science, B.S. Mathematics for Teaching, and B.A. Physics with 6-12 Physical Science Teacher Certification Track.

UTeachSA is a collaborative effort between the College of Sciences and the College of Education and Human Development. Students interested in becoming a secondary STEM teacher should contact the UTeachSA program (<https://www.utsa.edu/UTeachSA/>).

### College of Sciences Distinction in Research

The College of Sciences Distinction in Research (<https://www.utsa.edu/sciences/research/dir.html>) program offers an opportunity for outstanding students to do advanced study and research under close faculty supervision for two semesters. At the conclusion of those two semesters, students are expected to have produced a high-quality research paper/thesis. Students who successfully complete the



requirements earn the "College of Sciences Distinction in Research" notation on their transcript.

The *College of Sciences Distinction in Research* is housed within the College of Sciences and is not affiliated with the Honors College/ COS Honors Program. This means that all College of Sciences undergraduate students meeting the requirements are eligible to participate. Students who enjoy research, plan to pursue a research-intensive career, or want to attend a STEM graduate program are encouraged to participate in this program. Interested students can contact the College of Sciences Dean's office or their major department with any questions.

To be eligible to pursue the *College of Sciences Distinction in Research*, students must be a College of Sciences major, have a cumulative grade point average of 3.0 or greater, have a major grade point average of 3.0 or greater, and should be in or near their last two semesters of coursework. Students are expected to enroll in the appropriate Honors Research course each of those two semesters. A minimum grade point average of 3.0 or greater must be maintained through those courses. Ultimately, approval for receiving this notation is based on the student's academic performance, the quality of the research paper/thesis produced, and recommendation by the faculty of the student's major discipline, the Department Chair, and the Associate Dean for Undergraduate Studies in the College of Sciences.

## Department of Chemistry

### Mission Statement

The mission of the Department of Chemistry is to expand the frontiers of the chemical sciences by promoting discovery and collaboration through research; to inspire and educate the next generation to be excellent, responsible and ethical chemists; and to maintain a respectful, diverse and collegial environment for the sharing of ideas among our students, colleagues, and the greater community.

### General Information

The faculty, students and staff of the Department of Chemistry study how reactions occur, make new materials to enhance current technologies, develop compounds that fight disease, create cleaner and more efficient processes for industry, and make many other fundamental discoveries that benefit society. Our research covers all of the major areas, including: Analytical, Biological, Inorganic, Organic, Medicinal and Physical Chemistry. The goal of the program is to produce independent and creative scientists who have discipline-specific knowledge, technical and analytical training, and strong critical thinking and communication skills, such that they are prepared to succeed in the multitude of careers available to graduates in the chemical sciences. Our award-winning faculty and state-of-the-art laboratory facilities provide students with opportunities for personal mentorship during individualized undergraduate research projects.

### Degrees

The Department of Chemistry offers a Bachelor of Science (B.S.) Degree in Chemistry, a Bachelor of Arts (B.A.) Degree in Chemistry, and a Bachelor of Science (B.S.) Degree in Biochemistry, as well as a minor in Chemistry.

The B.S. Degree in Chemistry is designed to provide students with a rigorous preparation for a professional career in the chemical sciences. The degree is certified by the American Chemical Society and ensures that graduates have broad knowledge of the central concepts of analytical, biological, inorganic, organic, and physical chemistry, as well as laboratory skills that can be applied in a variety of careers. These may include, for example, drug discovery, chemical synthesis, forensics, cheminformatics, agriculture and food production, patent law, environmental protection, energy production and storage, water treatment, toxicology, new materials and coatings development, and hazardous waste management, to name but a few.

The B.S. Degree in Biochemistry provides a foundation for the application of chemical principles to living organisms, and can be applied to health-related disciplines, or as entry into pharmaceutical development and analysis. Both this degree and the B.S. in Chemistry provide excellent preparation for advanced professional studies in health-related disciplines, including medicine, dentistry, and pharmacology.

The B.A. Degree in Chemistry provides a more general curriculum that may be used by students to apply chemistry to fields that require a technical background and knowledge. These include such areas as teaching secondary physical science (see UTeachSA), technical communications, public information and outreach, biotechnology, as well as forensic and environmental chemistry. This program can be a

good option for students who plan to earn an additional degree or enter medical school.

## Educational Objectives

Upon graduation, students in Department of Chemistry programs will be able to:

- Identify chemically reactive structures and make predictions regarding their chemical or physical properties and transformations.
- Calculate quantities relevant to chemical/physical states and changes.
- Plan and implement chemical research.
- Utilize instrumentation needed to determine conversions in physical or chemical phenomena and critically evaluate the data obtained from such instrumentation.
- Find and critically evaluate chemical literature.
- Effectively communicate the results of chemical experiments in group presentations and written documents.

## Health Careers Pathways

The Department of Chemistry offers programs that supports students interested in pursuing professional or graduate programs (e.g., medical, dental, pharmacy and veterinarian) in health-related professions. See the Degrees (p. 282) page for more information. Students can also visit the UTSA Health Professions office at <https://www.utsa.edu/healthprofessions/> for more information.

## Admission Policy

The goal of the Department of Chemistry 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 Chemistry is designed to identify those students most likely to succeed in their undergraduate chemistry education.

Students who are not Chemistry or Biochemistry majors are restricted from registering for upper-division (3000- and 4000-level) Chemistry courses without the consent of an undergraduate academic advisor.

A chemistry minor is available to all UTSA students who seek to complement a different academic major with a stronger foundation in chemistry.

## Direct Admission Criteria

Applicants entering UTSA as Freshman or Transfer students with less than 30 transferable credit hours earned will be admitted to the Department of Chemistry if they:

- meet all UTSA undergraduate first-time freshman or transfer admission requirements.

Applicants with 30 or more transferable credit hours will be admitted to the Department of Chemistry if they:

- meet all UTSA undergraduate transfer admission requirements, and
- have completed College Algebra (or higher) or an equivalent with a grade of "C-" or higher.

## Student Involvement

Chemistry majors are able to partake in a variety of discipline-related activities that further enhance their experience in the program.

UTSA's American Chemical Society (ACS) Student Affiliated Chapter is a student-led organization that focuses on the academic and social enrichment of UTSA students with a passion for science! The focus of the chapter is to foster connections between chemistry students, participate in community service projects to promote science among youth, and provide opportunities for professional growth and development. The chapter also serves to expose students to undergraduate research, graduate schools, and career opportunities post-graduation. UTSA's society is nationally ranked by the American Chemical Society.

Many Chemistry majors get involved at an early stage of their education in meaningful laboratory research activities under the guidance of a faculty member. The many areas of ongoing research studies include such fields as inorganic and organic synthesis and analysis, biological chemistry, surface catalysis, new drug design, and theoretical and computational modeling. These experiences are an excellent preparation for graduate study and a professional career in chemistry and can sometimes lead to student participation in published research articles.

- B.S. Degree in Chemistry (p. 282)
- B.S. Degree in Biochemistry (p. 284)
- B.A. Degree in Chemistry (p. 286)

## 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. Students seeking a Bachelor of Science Degree in Chemistry are encouraged to take full advantage of the scientific opportunities available in the department by joining a research group.

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
<b>Total Credit Hours</b>	<b>42</b>

## Degree Requirements

Code	Title	Credit Hours
<b>A. Required courses in chemistry</b>		
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 3303	Essentials of Biochemistry	3
CHE 3464	Descriptive Inorganic Chemistry	4
CHE 3643	Organic Chemistry II	3
CHE 3652	Organic Chemistry II Laboratory	2
CHE 3804	Molecular Thermodynamics	4
CHE 3812	Physical Chemistry Laboratory	2
CHE 3824	Quantum Chemistry and Spectroscopy	4
CHE 3973	Chemical Communications	3
CHE 4213	Instrumental Analysis	3
CHE 4463	Inorganic Chemistry	3
CHE 4613	Introduction to Polymer Chemistry	3
CHE 4912	Independent Study	2
or CHE 4922	Special Project	
<b>B. Approved upper-division chemistry electives</b>		
Select 6 additional semester credit hours of approved upper-division chemistry electives, 3 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.		6
<b>C. Support work in science, mathematics, and statistics</b>		
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	6
<b>D. Electives</b>	
Select 6 semester credit hours of electives	6
<b>Total Credit Hours</b>	<b>90</b>

## 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 course sequence is only 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	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory <sup>1</sup>	1
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>14</b>

#### Spring

CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory <sup>1</sup>	1
MAT 1224	Calculus II	4
STA 1053	Basic Statistics (core and major)	3
WRC 1023	Freshman Composition II (core)	3
<b>Credit Hours</b>		<b>14</b>

#### Second Year

Fall		Credit Hours
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory <sup>1</sup>	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
American History (core)		3
<b>Credit Hours</b>		<b>16</b>

#### Spring

CHE 3643	Organic Chemistry II	3
CHE 3652	Organic Chemistry II Laboratory <sup>1</sup>	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

Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Third Year</b>		
<b>Fall</b>		
CHE 3303	Essentials of Biochemistry <sup>2</sup>	3
CHE 3804	Molecular Thermodynamics <sup>2</sup>	4
CHE 3973	Chemical Communications	3
Government-Political Science (core)		3
Language, Philosophy & Culture (core)		3
<b>Credit Hours</b>		<b>16</b>
<b>Spring</b>		
CHE 3464	Descriptive Inorganic Chemistry <sup>3</sup>	4
CHE 3812	Physical Chemistry Laboratory <sup>3</sup>	2
CHE 3824	Quantum Chemistry and Spectroscopy <sup>3</sup>	4
Social & Behavioral Sciences (core)		3
Upper-division College of Sciences Elective		3
<b>Credit Hours</b>		<b>16</b>
<b>Fourth Year</b>		
<b>Fall</b>		
CHE 4463	Inorganic Chemistry <sup>2</sup>	3
CHE 4912 or CHE 4922	Independent Study or Special Project	2
Free Elective		3
Upper-division CHE elective		3
Upper-division CHE elective		3
<b>Credit Hours</b>		<b>14</b>
<b>Spring</b>		
CHE 4213	Instrumental Analysis <sup>3</sup>	3
CHE 4613	Introduction to Polymer Chemistry <sup>3</sup>	3
Free elective		3
Upper-division College of Sciences Elective		3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120</b>

<sup>1</sup> These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

<sup>2</sup> Course only offered in Fall.

<sup>3</sup> Course only offered in Spring.

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. 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 1203 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
<b>Total Credit Hours</b>	<b>42</b>

### Degree Requirements

Code	Title	Credit Hours
<b>A. Required chemistry courses</b>		
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 3313	Biochemistry I	3
CHE 3464	Descriptive Inorganic Chemistry	4
CHE 3643	Organic Chemistry II	3
CHE 3652	Organic Chemistry II Laboratory	2
CHE 3973	Chemical Communications	3
CHE 4313	Biochemistry II	3
CHE 4332	Biochemistry II Laboratory	2
CHE 4354	Basic Biophysical Chemistry	4
CHE 4913	Independent Study	3

**B. Required biology and physics courses**

BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors	4
BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors	4
BIO 2313	Genetics	3
BIO 2362	Molecular Genetics Laboratory	2
BIO 3813	Cell Biology	3
BIO 3362	Molecular Biochemistry Laboratory	2
BIO 3913	Molecular Biology	3
PHY 4833	Molecular Biophysics	3

**C. Upper-division biology and chemistry electives**

**6**  
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.

**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

**Total Credit Hours** **90**

**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 course sequence is only 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**

<b>Fall</b>		<b>Credit Hours</b>
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors	4
CHE 1103	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory <sup>1</sup>	1
MAT 1214	Calculus I (core and major)	4
<b>Credit Hours</b>		<b>15</b>

**Spring**

BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors	4
CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory <sup>1</sup>	1
MAT 1224	Calculus II	4
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>15</b>

**Second Year****Fall**

BIO 2313	Genetics	3
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory <sup>1</sup>	2
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory (core and major)	4
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

BIO 2362	Molecular Genetics Laboratory	2
CHE 3643	Organic Chemistry II	3
CHE 3652	Organic Chemistry II Laboratory <sup>1</sup>	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 (core)	3
<b>Credit Hours</b>		<b>14</b>

**Third Year****Fall**

BIO 3362	Molecular Biochemistry Laboratory	2
BIO 3813	Cell Biology	3
CHE 3313	Biochemistry I <sup>2</sup>	3
CHE 3973	Chemical Communications	3
American History (core)		3
Social & Behavioral Sciences (core)		3
<b>Credit Hours</b>		<b>17</b>

**Spring**

BIO 3913	Molecular Biology	3
CHE 4313	Biochemistry II <sup>3</sup>	3
CHE 4332	Biochemistry II Laboratory <sup>3</sup>	2
American History (core)		3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>14</b>

**Fourth Year****Fall**

CHE 3214	Analytical Chemistry	4
CHE 4354	Basic Biophysical Chemistry <sup>2</sup>	4



CHE 4913 or BIO 4923	Independent Study or Laboratory Research: Biology Concentrations	3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>14</b>
<b>Spring</b>		
CHE 3464	Descriptive Inorganic Chemistry <sup>3</sup>	4
PHY 4833	Molecular Biophysics <sup>3</sup>	3
Language, Philosophy, & Culture (core)		3
Upper-division BIO or CHE elective I		3
Upper-division BIO or CHE elective II		3
<b>Credit Hours</b>		<b>16</b>
<b>Total Credit Hours</b>		<b>120</b>

<sup>1</sup> These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

<sup>2</sup> Course only offered in Fall.

<sup>3</sup> Course only offered in Spring.

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 provides preparation for careers in industry, governmental agencies, environmental studies, and pre-professional programs, but it is not recommended for students planning to pursue graduate studies in chemistry or related fields. This degree plan 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
<b>Total Credit Hours</b>	<b>42</b>

## Degree Requirements

Code	Title	Credit Hours
<b>A. Required courses in chemistry</b>		
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 3303	Essentials of Biochemistry	3
CHE 3464	Descriptive Inorganic Chemistry	4
CHE 3643	Organic Chemistry II	3
CHE 3652	Organic Chemistry II Laboratory	2
CHE 3973	Chemical Communications	3
CHE 4354	Basic Biophysical Chemistry	4

### 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 5 semester credit hours of electives

**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 course sequence is only 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	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory <sup>1</sup>	1
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (core)	3

**Credit Hours 14**

### Spring

CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory <sup>1</sup>	1
MAT 1224	Calculus II	4
WRC 1023	Freshman Composition II (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 <sup>1</sup>	2
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory (core)	4

American History (core) 3

Government-Political Science (core) 3

**Credit Hours 15**

#### Spring

CHE 3643	Organic Chemistry II	3
CHE 3652	Organic Chemistry II Laboratory <sup>1</sup>	2
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory (Core)	4

Government-Political Science (core) 3

Language, Philosophy and Culture (core) 3

**Credit Hours 15**

### Third Year

#### Fall

CHE 3214	Analytical Chemistry	4
CHE 3303	Essentials of Biochemistry <sup>2</sup>	3
Upper-division COS elective		3
Upper-division COS elective		3
American History (core)		3

**Credit Hours 16**

#### Spring

CHE 3464	Descriptive Inorganic Chemistry <sup>3</sup>	4
CHE 3973	Chemical Communications	3
Upper-division COS elective		3

Component Area Option (core) 3

Creative Arts (core) 3

**Credit Hours 16**

### Fourth Year

#### Fall

CHE 4354	Basic Biophysical Chemistry <sup>2</sup>	4
Upper-division CHE elective		3
Upper-division COS elective		3
Upper-division COS elective		3
Free elective		2

**Credit Hours 15**

#### Spring

Upper-division CHE elective		3
Upper-division CHE elective		3
Upper-division COS elective		3
Upper-division COS elective		3
Free elective		3

**Credit Hours 15**

**Total Credit Hours 120**

<sup>1</sup> These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

<sup>2</sup> Course only offered in Fall.

<sup>3</sup> Course only offered in Spring.

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.

Code	Title	Credit Hours
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### A. Required 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 3643	Organic Chemistry II	3

### 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	

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

### Mission Statement

The core mission is to provide an inclusive learning environment and conduct ethical and excellence-driven research in computer science to benefit departmental stakeholders including students, faculty, the university, the local community, and the society at large. To fulfill this mission, the Department will:

- Use innovative and experiential learning models and research to prepare students for careers in industry, government, and academia.
- Develop leadership in the education of underrepresented and disadvantaged groups.
- Enhance the nationally prominent research, education, outreach programs in cybersecurity, develop the cross-cutting research thrusts of data-driven intelligence and virtual reality systems, and networked and software systems.

### General Information

The Department of Computer Science is engaged in cutting-edge research in cross-cutting research thrust areas of Cybersecurity, Data-driven Intelligence and Virtual Reality Systems, and Networked and Software Systems, with expertise in Artificial Intelligence, Machine Learning, Big Data, Software Engineering, Cloud Computing, Cybersecurity, Bioinformatics, Internet-of-Things, Embedded Systems, Parallel, Distributed and High-performance Computing, and Computer Graphics and Virtual and Augmented Reality. The Department of Computer Science operates dedicated classrooms, a large instructional lab, 20 research labs, and two main research units, the Center for Infrastructure Assurance and Security (CIAS) and the Institute for Cyber Security (ICS). Its faculty members are also affiliated with UTSA's School of Data Science, National Security Collaboration Center, and AI Matrix Consortium.

The Department of Computer Science also offers research opportunities and internships to undergraduate students. Students engaged in research will be able to work with state-of-the-art computing clusters and research equipment operated by the Department of Computer Science and UTSA, such as a 113-compute node cluster, as well as AI workstations with cutting-edge GPUs.

### Degrees

The Department of Computer Science (CS) offers a Bachelor of Science (B.S.) Degree in Computer Science and a Bachelor of Arts (B.A.) Degree in Computer Science with Teaching Track. The department also offers a Minor in Computer Science.

The B.S. Degree in Computer Science requires 120 credit hours (42 credit hours of university core, 42 credit hours of required CS courses, 30 credit hours of CS electives, and 6 credit hours of free electives). The B.S. degree in Computer Science also includes formal concentrations in Cybersecurity, Cloud Computing and Systems, Software Engineering, and Data Science. Students can pursue a track in Cyber Operations which is designated by the National Security Agency as a Center of Academic Excellence in Cyber Operations (Fundamentals). Concentration requirements can be fulfilled within the standard requirements, and most students elect to complete at least one concentration. This program prepares the students for a successful career in traditional, new and

emerging computer and high technology businesses, government agencies, as well as research and education institutions.

The B.A. Degree in Computer Science with a Teaching Track is an interdisciplinary program and also requires 120 credit hours, (42 credit hours of university core, 39 credit hours of required CS courses, 12 credit hours of CS electives, and 30 credit hours of UTeachSA education courses). This program integrates a cohesive set of fundamental computer science courses and the UTeachSA program in pedagogy and clinical teaching, enabling students to gain solid CS foundation and a teaching certification in CS, thus preparing students for successful careers in secondary school education as well as in industry and government sectors.

## Educational Objectives

Upon graduation, students in Department of Computer Science programs will be able to:

- Become successfully employed in the computing profession or actively pursue advanced degrees in computing or a related discipline.
- Apply mathematical foundations, algorithmic principles, and computer science theory in the design of computational systems.
- Use cutting-edge computing technologies and methods for the design and implementation of high-quality solutions.
- Create and collaborate in emergent computing technologies leading to innovative solutions for industry and academia.
- Work effectively in teams to accomplish shared computing design, evaluation, or implementation goals, while exhibiting professional behavior and exercising appropriate leadership within their organization.
- Engage in lifelong learning while reflecting a commitment to quality, innovation, critical thinking, and continuous improvement.
- Be responsible members of their profession and communicate effectively to a variety of audiences while upholding the highest commitment to personal integrity, behavior, ethical and professional conduct.

## 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

Applicants entering UTSA as Freshmen will be directly admitted to the Department of Computer Science if they:

- Meet all UTSA undergraduate admission requirements,
- Are Pre-Calculus (<https://future.utsa.edu/ready/aleks/>) (or higher) ready

Transfer applicants will be directly admitted to the Department of Computer Science if they:

- Meet all UTSA undergraduate transfer admission requirements
- Are Pre-Calculus (<https://future.utsa.edu/ready/aleks/>) (or higher) ready

All applicants for admission to the Department of Computer Science must be qualified to take MAT 1093 Precalculus (or higher) and CS 1083 Programming I for Computer Scientists (or higher). Students who do not meet the requirements, but meet UTSA's general admission requirements, will be part of "Engineering, Mathematics, and Sciences Studies (XEMS)" pathway 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 available to all UTSA students who seek to complement a different academic major with a strong foundation in computer science.

- B.S. Degree in Computer Science (p. 289)
  - Concentration in Cloud and Systems (p. 290)
  - Concentration in Cybersecurity (p. 290)
  - Concentration in Data Science (p. 290)
  - Concentration in Software Engineering (p. 291)
  - Cyber Operations Track (p. 291)
- B.A. Degree in Computer Science with Teaching Track (p. 293)

## 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 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, Cybersecurity, Data Science, and Software Engineering. The department also offers the B.S. in Computer Science with a Cyber Operations Track.

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. Students are encouraged to have an internship or research experience.

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.

### Program Outcomes

Graduates of the B.S. in Computer Science will be able to:

- Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
- Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements.
- Communicate effectively in a variety of professional contexts.
- Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
- Function effectively as a member or leader of a computing-related team.

- Apply computer science theory and software development fundamentals to produce computing-based solutions.

## 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
<b>Total Credit Hours</b>	<b>42</b>

## 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.

Code	Title	Credit Hours
CS 1714	Computer Programming II	4
CS 2124	Data Structures	4

## Degree Requirements

Code	Title	Credit Hours
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### A. Required courses (this also satisfies the 3 hours of core curriculum requirement for Mathematics)

CS 1011	Essence of Computer Science	1
CS 1083	Programming I for Computer Scientists	3
CS 1714	Computer Programming II	4
CS 2124	Data Structures	4
CS 2233	Discrete Mathematical Structures	3
CS 3333	Mathematical Foundations of Computer Science	3
CS 3343	Analysis of Algorithms	3
CS 3424	Systems Programming	4
CS 3443	Application Programming	3

CS 3733	Operating Systems	3
CS 3843	Computer Organization	3
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, 30 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
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**Total Credit Hours** **81**

## Concentration in Cloud and Systems

Students may declare a Concentration in Cloud and Systems after completing CS 3424 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:

Code	Title	Credit Hours
CS 4843	Cloud Computing	3
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 Cybersecurity

Students may declare a Concentration in Cybersecurity after completing CS 2124 Data Structures with a grade of "C-" or better. All candidates for the Concentration in Cybersecurity 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:

Code	Title	Credit Hours
CS 3113	Principles of Cyber Security	3
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 4613	Senior Design I	3
CS 4363	Cryptography	3	CS 4623	Senior Design II	3
CS 4453	Penetration Testing	3	CS 4683	Secure Software Development and Analysis	3
CS 4463	Steganography	3	CS 4723	Software Validation and Quality Assurance	3
CS 4473	Cryptocurrencies and Bitcoins	3	CS 4743	Enterprise Software Engineering	3
CS 4483	Cyber Security Foundations and Practice	3	CS 4773	Object-Oriented Systems	3
CS 4493	Advanced Topics in Cyber Security	3	CS 4783	Advanced Software Engineering	3
CS 4643	Mobile and Wireless Network and 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:

Code	Title	Credit Hours
CS 3743	Database Systems	3
CS 3753	Data Science	3
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 I: Algorithms for Biological Data	3
CS 4233	Bioinformatics II: Statistical Learning for Biological Data	3
CS 4243	Large-Scale Data Management	3
CS 4253	Machine Learning	3
CS 4263	Deep Learning	3
CS 4303	Introduction to Optimization	3
CS 4333	Probability and Computing	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:

Code	Title	Credit Hours
CS 3773	Software Engineering	3
plus two additional courses selected from the following (an elective can only be counted towards one concentration):		
CS 3723	Programming Languages	3
CS 4393	User Interfaces	3
CS 4413	Web Technologies	3

### Program Requirements for Cyber Operations Track

Cyber Operations (CO) Track is a program option for students in the current B.S. in Computer Science degree. Students graduating with this option will have Cyber Operations Track indicated as part of their B.S. in Computer Science degree. The objective of the Cyber Operations Track is to provide rigorous curriculum in Cybersecurity with a focus on offensive cyber operations while balancing theoretical foundations and experiential learning.

All candidates for the Cyber Operations Track must fulfill the Core Curriculum requirements, the Computer Science degree requirements except CS 3853 Computer Architecture, which is available as an elective for this track, and the following courses:

Code	Title	Credit Hours
<b>A. Required courses (this also satisfies the 3 hours of core curriculum requirement for Mathematics)</b>		
CS 1011	Essence of Computer Science	1
CS 1083	Programming I for Computer Scientists	3
CS 1714	Computer Programming II	4
CS 2124	Data Structures	4
CS 2233	Discrete Mathematical Structures	3
CS 3333	Mathematical Foundations of Computer Science	3
CS 3343	Analysis of Algorithms	3
CS 3424	Systems Programming	4
CS 3443	Application Programming	3
CS 3733	Operating Systems	3
CS 3843	Computer Organization	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. Required courses for Cyber Operations Track

CS 3113	Principles of Cyber Security	3
CS 3433	Computer and Information Security	3
CS 3873	Computer Networks	3
CS 4353	Unix and Network Security	3
CS 4363	Cryptography	3
CS 4643	Mobile and Wireless Network and Technologies	3
CS 4653	Software and Malware Reverse Engineering	3
CS 4663	Distributed and Cloud Systems Security	3
CS 4683	Secure Software Development and Analysis	3

### C. Electives

Choose four of the following:

CS 3853	Computer Architecture (recommended)	12
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CS 4673	Cyber Operations (recommended)	
CS 4853	Advanced Systems Programming (recommended)	
IS 4523	Digital Forensic Analysis II (recommended, from Information Systems and Cybersecurity program in College of Business)	
Or any other CS upper division electives.		
<b>Total Credit Hours</b>		<b>81</b>

### Course Sequence Guides 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 (no track) – Recommended Four-Year Academic Plan

First Year		
Fall		Credit Hours
CS 1011	Essence of Computer Science	1
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 (core)	3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>17</b>
Spring		
CS 1714	Computer Programming II	4
CS 2233	Discrete Mathematical Structures	3
MAT 1224	Calculus II	4
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
<b>Credit Hours</b>		<b>14</b>

Second Year		
Fall		Credit Hours
CS 2124	Data Structures	4
CS 3333	Mathematical Foundations of Computer Science	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (core)	3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>16</b>
Spring		
CS 3424	Systems Programming	4
CS 3443	Application Programming	3

CS 3843	Computer Organization	3
Social & Behavioral Sciences (core)		3
<b>Credit Hours</b>		<b>13</b>

Third Year		
Fall		Credit Hours
CS 3343	Analysis of Algorithms	3
Life & Physical Sciences (core)		3
Upper-division CS elective		3
Upper-division CS elective		3
Free Elective		3
<b>Credit Hours</b>		<b>15</b>

Spring		
CS 3733	Operating Systems	3
CS 3853	Computer Architecture	3
Free Elective		3
Upper-division CS elective		3
Upper-division CS elective		3
<b>Credit Hours</b>		<b>15</b>

Fourth Year		
Fall		Credit Hours
Upper-division CS elective		3
Upper-division CS elective		3
Upper-division CS elective		3
Component Area Option (core)		3
American History (core)		3
<b>Credit Hours</b>		<b>15</b>

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
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120</b>

Note: Some courses are only offered once a year: Fall or Spring. Check with the Department of Computer Science for scheduling of courses.

#### B.S. in Computer Science with Cyber Operations Track – Recommended Four-Year Academic Plan

First Year		
Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
CS 1011	Essence of Computer Science	1
CS 1083	Programming I for Computer Scientists	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (core)	3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>17</b>
Spring		
CS 1714	Computer Programming II	4

MAT 1224	Calculus II	4
WRC 1023	Freshman Composition II (core)	3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>14</b>

**Second Year****Fall**

CS 2124	Data Structures	4
CS 2233	Discrete Mathematical Structures	3
CS 3333	Mathematical Foundations of Computer Science	3
Language, Philosophy & Culture (core)		3
Social & Behavioral Sciences (core)		3
<b>Credit Hours</b>		<b>16</b>

**Spring**

CS 3113	Principles of Cyber Security	3
CS 3424	Systems Programming	4
CS 3443	Application Programming	3
CS 3843	Computer Organization	3
<b>Credit Hours</b>		<b>13</b>

**Third Year****Fall**

CS 3343	Analysis of Algorithms	3
CS 3433	Computer and Information Security	3
CS 3733	Operating Systems	3
CS 3873	Computer Networks	3
American History (core)		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

CS 4353	Unix and Network Security	3
CS 4363	Cryptography	3
American History (core)		3
Upper-division CS elective (see recommended courses in degree requirements)		3
Upper-division CS elective (see recommended courses in degree requirements)		3
<b>Credit Hours</b>		<b>15</b>

**Fourth Year****Fall**

CS 4643	Mobile and Wireless Network and Technologies	3
CS 4653	Software and Malware Reverse Engineering	3
CS 4663	Distributed and Cloud Systems Security	3
Creative Arts (core)		3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

CS 4683	Secure Software Development and Analysis	3
Upper-division CS elective (see recommended courses in degree requirements)		3

Upper-division CS elective (see recommended courses in degree requirements)	3
Component Area Option (core)	3
Government-Political Science (core)	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

Note: Some courses are only offered once a year: Fall or Spring. Check with the Department of Computer Science for scheduling of courses.

## Bachelor of Arts Degree in Computer Science with Teaching Track

The Bachelor of Arts (B.A.) Degree in Computer Science with Teaching Track is an interdisciplinary program designed for students who are interested in teaching computer science at the middle school or high school level as a certified teacher. This program integrates a cohesive set of fundamental computer science courses from the Bachelor of Science degree in Computer Science as well as the UTeachSA program so that students can gain solid foundations in the computer science and education fields to obtain the Computer Science teaching certification, thus preparing students for successful careers in secondary school education as well as in industry and government sectors.

The B.A. 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.

Students are encouraged to have an internship or research experience. All majors in computer science are required to complete all required and elective computer science courses with a grade of "C-" or better.

### Program Outcomes

Graduates of the B.A. in Computer Science with Teaching Track will be able to:

- Evaluate computing-based solutions to assess whether a given set of computing requirements have been appropriately satisfied.
- Explain computer science and software development fundamentals to produce computing-based solutions.
- Integrate skills and knowledge acquired over the course of an undergraduate education for the purpose of effectively teaching computer science in the public schools in compliance with the established competencies, as well as prepare students for career options with industry/government sectors.
- Integrate varied educational opportunities to create distinctive learning experiences oriented to students' specific needs and interests.
- Effectively communicate in writing on topics in the field of computer science through the purposeful use of analysis, insightful reasoning, and supporting details.

### Criminal Background Check

Teacher preparation programs at UTSA requires fieldwork in public schools. This requires that a student be able to pass a criminal background check conducted by the school districts. It is the responsibility of the student to determine if their criminal history background will present a problem before applying for admission to the teacher preparation program. Students with a problematic criminal

history will encounter difficulty in completing any fieldwork requirements and may not be able to complete the program.

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 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
<b>Total Credit Hours</b>	<b>42</b>

### Gateway Courses

Students pursuing the B.A. 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.

Code	Title	Credit Hours
CS 1714	Computer Programming II	4
CS 2124	Data Structures	4

### Degree Requirements

Code	Title	Credit Hours
<b>A. Required courses (this also satisfies the 3 hours of core curriculum requirement for Mathematics)</b>		
CS 1011	Essence of Computer Science	1
CS 1083	Programming I for Computer Scientists	3
CS 1714	Computer Programming II	4
CS 2124	Data Structures	4
CS 2233	Discrete Mathematical Structures	3
CS 3333	Mathematical Foundations of Computer Science	3
CS 3343	Analysis of Algorithms	3

CS 3424	Systems Programming	4
CS 3443	Application Programming	3
CS 3843	Computer Organization	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 electives 12

Any of upper division computer science electives in the B.S. in Computer Science program

#### C. Education Courses

30 semester credit hours of UTeachSA and education courses

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 3203	Knowing and Learning in Mathematics and Science	3
UTE 3213	Classroom Interactions	3
UTE 4203	Project-Based Instruction	3
ESL 3083	Second Language Teaching and Learning for Grades 7-12	3
LTED 3773	Reading and Writing Across the Disciplines- Grades 7-12	3
SPE 3603	Introduction to Special Education	3
UTE 4646	Clinical Teaching	6

**Total Credit Hours 81**

### Course Sequence Guide for B.A. Degree in Computer Science with Teaching Track

This course sequence guide is designed to assist students in completing their UTSA undergraduate B.A. in 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.A. in Computer Science with Teaching Track - Recommended Four-Year Academic Plan

First Year		Credit Hours
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
CS 1011	Essence of Computer Science	1
CS 1083	Programming I for Computer Scientists	3
MAT 1214	Calculus I (core and major)	4
WRC 1013	Freshman Composition I (core)	3
UTE 1111	Introduction to STEM Teaching Step 1	1
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
CS 1714	Computer Programming II	4
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 (core)	3
UTE 1122	Introduction to STEM Teaching Step 2	2
<b>Credit Hours</b>		<b>16</b>

**Second Year****Fall**

CS 2124	Data Structures	4
CS 2233	Discrete Mathematical Structures	3
POL 1013	Introduction to American Politics (core)	3
UTE 3203	Knowing and Learning in Mathematics and Science	3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>16</b>

**Spring**

CS 3333	Mathematical Foundations of Computer Science	3
CS 3443	Application Programming	3
UTE 3023	Perspectives on Science and Mathematics	3
Life & Physical Sciences (core)		3
Social & Behavioral Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

**Third Year****Fall**

CS 3424	Systems Programming	4
CS 3843	Computer Organization	3
ESL 3083	Second Language Teaching and Learning for Grades 7-12	3
Component Area Option (core)		3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>16</b>

**Spring**

CS 3343	Analysis of Algorithms	3
SPE 3603	Introduction to Special Education	3
UTE 3213	Classroom Interactions	3
American History (core)		3
Language, Philosophy & Culture (core)		3
<b>Credit Hours</b>		<b>15</b>

**Fourth Year****Fall**

LTED 3773	Reading and Writing Across the Disciplines-Grades 7-12	3
UTE 4203	Project-Based Instruction	3
Upper-division CS elective		3
Upper-division CS elective		3
American History (core)		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

UTE 4646	Clinical Teaching	6
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Upper-division CS elective	3
Upper-division CS elective	3
<b>Credit Hours</b>	<b>12</b>
<b>Total Credit Hours</b>	<b>120</b>

## Minor in Computer Science

All students pursuing the Minor in Computer Science must complete 20 semester credit hours. The purpose of the minor in Computer Science is to provide students with strong computational thinking and software development skills that can help them solve problems from their major program of study and better collaborate with interdisciplinary teams when working on computationally-intensive projects.

All required and elective courses must be completed with a grade of "C-" or better.

Code	Title	Credit Hours
<b>A. Required courses</b>		
CS 1083	Programming I for Computer Scientists	3
CS 1714	Computer Programming II	4
CS 2124	Data Structures	4
<b>B. CS core courses or approved CS electives</b>		
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. The "CS electives" should be organized CS courses other than internship or independent study.		9
<b>Total Credit Hours</b>		<b>20</b>

To declare a Minor in Computer Science, obtain advice, or seek approval of substitutions for course requirements, students should consult with their academic advisor.



# Department of Earth and Planetary Sciences

## Mission Statement

The Department of Earth and Planetary Sciences is dedicated to advancing scientific knowledge in geosciences, especially in General Geology, Earth System and Climate, Environmental Geoscience, and Water Science. The Department finds solutions to complex multi-disciplinary problems involving Earth and Planetary sciences.

## General Information

The Department of Earth and Planetary Sciences at The University of Texas at San Antonio has academic expertise, research excellence, and student success across the fields of earth sciences, environmental geosciences, geoinformatics, and planetary sciences. Our research laboratories and facilities provide both undergraduate and graduate students the opportunity to learn, participate, and acquire skills in areas of geosciences. These include Chemical Hydrology and Mass Spectrometry Lab, Computational and GIS Labs (two), Hydrogeology Facility, Heat and Mass Transfer & Experimental Rheology Lab, Micropaleo and Stratigraphy Facility, Ocean Science Lab, Remote Sensing and Geoinformatics Lab, River Science Lab, Rock Preparation Facility, Sedimentary Geology and Mineralogy Lab, Snow and Ice Geophysics Lab. The department faculty also leads two university-wide collaborative Center/Institute: NASA MIRO Center for Advanced Measurements in Extreme Environments (CAMEE (<http://www.utsa.edu/NASA-CAMEE/>)) and Institute for Water Research, Sustainability and Policy (IWRSP (<http://www.utsa.edu/iwrsp/>)).

## Degrees

The Bachelor of Science (B.S.) degree in Geosciences provides opportunities to prepare for careers in geosciences and for successful studies in graduate school. The B.S. degree in Geosciences requires 120 credit hours: 42 credit hours of university core, 35 hours of required GEO courses, and 23 hours of support courses (9 hours of coursework is part of the university core), and 29 hours of coursework (18 hours required and 11 hours of free electives) in focus track areas:

- General Geology
- Earth System and Climate
- Environmental Geoscience
- Water Science

The Bachelor of Arts (B.A.) degree in Geosciences provides opportunities to prepare for careers in fields such as earth science education, law, insurance, financial services, energy business, and environmental management. B.A. degree in Geosciences requires 120 credit hours, at least 39 hours of which must be at the upper-division level: 42 credit hours of university core, 34 hours of required GEO courses, and 19 hours of support courses (9 hours of course work is part of the university core), 16 hours of Geosciences (GEO) electives, and 18 hours of free electives.

The Department also offers a Minor in Geology and a Certificate in Geographic Information System. The department also participates in the Multidisciplinary Studies in Geoinformatics B.S. degree program. Completion of a basic science curriculum allows students to apply for entry into one of several highly specialized areas in geosciences and/or environmental science.

## Educational Objectives

Upon graduation, students in a Department of Earth and Planetary Sciences program will be able to:

- Create topographic, geologic, and digital maps in both field and laboratory settings (**Mapping**).
- Demonstrate knowledge of the Earth structures (from deep to superficial envelopes), and the effect of plate tectonics on crustal-scale Earth structures and climate, by creating stratigraphic sections and subsurface diagrams from preexisting maps and subsurface data (**Earth Structure and Plate Tectonics**)
- Identify common Earth materials including rocks, rock-forming minerals, and water resources, as well as the processes and tectonic environments responsible for their formation (**Earth Materials**)
- Demonstrate knowledge of the Geologic Time Scale, the chronology of life on Earth, and the fundamentals of biologic and geologic evolution through recognition of fossil taxa and creation of biostratigraphic correlations through time (**Geologic Time and Earth Evolution**)
- Analyze the effects of climate on earth surface processes, recognize common geomorphic features, and the processes responsible for their formation (**Climate and Earth Surface Processes**)
- Understand geological and thermodynamic controls on the petrogenesis of major igneous, metamorphic, and sedimentary minerals, and the effect of the mineral chemical composition and stability on igneous, metamorphic, sedimentary, and aqueous processes (**Geochemistry**)
- B.S. Degree in Geosciences (p. 296)
  - General Geology Track (p. 297)
  - Earth System and Climate Track (p. 297)
  - Environmental Geoscience Track (p. 298)
  - Water Science Track (p. 298)
- B.A. Degree in Geosciences (p. 301)

## Bachelor of Science Degree in Geosciences

The Bachelor of Science (B.S.) degree in Geosciences 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 geoscientists in their professional careers. In this degree, students are encouraged to focus on one of the four tracks: General Geology, Earth System and Climate, Environmental Geoscience, and Water Science.

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 Geosciences 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
<b>Total Credit Hours</b>	<b>42</b>

## Gateway Courses

Students pursuing the B.S. degree in Geosciences 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.

Code	Title	Credit Hours
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory	
GEO 1123 & GEO 1131	Life Through Time and Life Through Time Laboratory	

## Degree Requirements

Code	Title	Credit Hours
<b>A. Major courses</b>		
1. Required courses (35 hours)		
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 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 3373	Geochemistry	3
GEO 4001	Experiential Learning Experience	1
<b>B. Required support courses (23 hours)</b>		
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I 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
<b>Total Credit Hours</b>		<b>58</b>

## Focus Track Areas

The Department offers four track areas: General Geology, Earth System and Climate, Environmental Geoscience, and Water Science. To declare a track or obtain advice, students should consult an undergraduate academic advisor in the Mathematics and Physical Sciences Advising Center. To receive credit for the track, students must successfully complete all requirements for the B.S. degree along with all courses listed for that track. If not, students will receive a standard B.S. degree in Geosciences.

## General Geology (29 hours)

This track focuses on the traditional geology curriculum and for traditional geology careers that include the oil/gas and/or mining industries, as well as graduate school in a variety of fields of earth and planetary sciences, and research/academic careers. Upon graduation, students will have the academic background needed to become state licensed geologists, which is required for management positions in the environmental field in Texas and many other states.

All candidates for the General Geology must complete the following courses:

A. 9 credit hours of required courses:

GEO 2113	Fundamentals of Geographic Information Systems (GIS)	3
GEO 4933	Field Geology Part I	3
GEO 4943	Field Geology Part II	3

B. 9 credit hours of upper-division-level Geosciences electives. 9

C. Free Elective Courses (11 credit hours) 11

**Total Credit Hours 29**

## Earth System and Climate (29 hours)

This track provides students with the technical and conceptual knowledge necessary to address challenges faced by geoscientists dealing with climate-related issues allowing them to partner with policymakers and stakeholders. Completion of this track will alert potential employers to a student's background in Earth and Climate Systems and enhance opportunities for employment in the areas of environmental policy and planning, environmental consulting, air/water quality monitoring and assessment, laboratory analysis, natural resource management, science education/research, and conservation and environmental protection.

All candidates for the Earth System and Climate must complete the following courses:

Code	Title	Credit Hours
A. Required Courses (18 credit hours from the following): 18		
GEO 2113	Fundamentals of Geographic Information Systems (GIS)	

GEO 3003	Atmospheric Science	
GEO 3163	Oceanography	
GEO 3413	Introduction to Earth System Science and Remote Sensing	
GEO 3173	The Cryosphere	
GEO 4053	Climate Change	
GEO 4093	Principles of Remote Sensing	
GEO 4113	Geomorphology	
B. Free Elective Courses (11 credit hours)		11
<b>Total Credit Hours</b>		<b>29</b>

**Environmental Geoscience (29 hours)**

This track trains students in chemical and physical aspects of the earth's environment. Graduates from this track will be well prepared for jobs in the areas of environmental consulting, environmental engineering, water quality monitoring and assessment, with employment opportunities in both private and state/local government sectors.

All candidates for the Environmental Geosciences must complete the following courses:

A. Required courses (18 credit hours from the following):		18
GEO 2113	Fundamentals of Geographic Information Systems (GIS)	
GEO 3163	Oceanography	
GEO 3413	Introduction to Earth System Science and Remote Sensing	
GEO 4063	Advanced Environmental Geology	
GEO 4093	Principles of Remote Sensing	
GEO 4113	Geomorphology	
GEO 4121	Geomorphology Laboratory	
GEO 4133	River Science	
GEO 4203	Aqueous Geochemistry	
GEO 4453	Natural Hazards	
GEO 4933	Field Geology Part I	
GEO 4943	Field Geology Part II	
B. Free Elective Courses (11 credit hours)		11
<b>Total Credit Hours</b>		<b>29</b>

**Water Science (29 hours)**

This track provides students with the technical and conceptual background necessary to address challenges faced by water planners and policy makers. Completion of this focus area will alert potential employers to a student's background in hydrology, water resource, and water quality, and enhance chances for employment in the water sectors, in both private and state/local government sectors.

All candidates for the Water Science must complete the following courses:

Code	Title	Credit Hours
A. Required Courses (18 credit hours from the following):		18
GEO 2113	Fundamentals of Geographic Information Systems (GIS)	
GEO 4093	Principles of Remote Sensing	
GEO 4103	Programming and Statistics for GIS	
GEO 4133	River Science	

GEO 4203	Aqueous Geochemistry	
GEO 4503	Hydrogeophysics	
GEO 4511	Hydrogeophysics Laboratory	
GEO 4623	Groundwater Hydrogeology	
GEO 4933	Field Geology Part I	
GEO 4943	Field Geology Part II	
B. Free Elective Courses (11 credit hours)		11
<b>Total Credit Hours</b>		<b>29</b>

**Course Sequence Guides for B.S. Degree in Geosciences**

These course sequence guides are designed to assist students in completing their UTSA undergraduate Geosciences degree requirements. *These course sequences are only guides and students must satisfy other requirements of this catalog and meet with their academic advisor for individualized degree plans.* Progress within these guides 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 Geosciences (General Geology Track) – Recommended Four-Year Academic Plan**

First Year		Credit Hours
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory	4
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>14</b>
<b>Spring</b>		
CS 1173	Data Analysis and Visualization	3
GEO 3373	Geochemistry	3
GEO 1123 & GEO 1131	Life Through Time and Life Through Time Laboratory (core and major)	4
MAT 1214	Calculus I (core)	4
<b>Credit Hours</b>		<b>14</b>
<b>Second Year</b>		
<b>Fall</b>		
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)	4
<b>Credit Hours</b>		<b>16</b>

**Spring**

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 (core)	4
WRC 1023	Freshman Composition II (core)	3
<b>Credit Hours</b>		<b>14</b>

**Third Year****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
<b>Credit Hours</b>		<b>15</b>

**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
<b>Credit Hours</b>		<b>14</b>

**Summer**

GEO 4933	Field Geology Part I	3
GEO 4943	Field Geology Part II	3
<b>Credit Hours</b>		<b>6</b>

**Fourth Year****Fall**

GEO 4001	Experiential Learning Experience	1
American History (core)		3
Language, Philosophy & Culture (core)		3
Free Elective		3
Free Elective		3
<b>Credit Hours</b>		<b>13</b>

**Spring**

American History (core)		3
Creative Arts (core)		3
Social & Behavioral Sciences (core)		3
Free Elective		3
Free Elective		2
<b>Credit Hours</b>		<b>14</b>

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**Total Credit Hours** **120**

**B.S. in Geosciences (Earth System and Climate Track) – Recommended Four-Year Academic Plan****First Year**

		<b>Credit Hours</b>
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory <sup>1</sup>	4
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory	4
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>14</b>

**Spring**

CS 1173	Data Analysis and Visualization	3
GEO 3373	Geochemistry	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
<b>Credit Hours</b>		<b>14</b>

**Second Year****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
<b>Credit Hours</b>		<b>16</b>

**Spring**

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 (core and major)	4
WRC 1023	Freshman Composition II (core)	3
Required track course		3
<b>Credit Hours</b>		<b>14</b>

**Third Year****Fall**

GEO 3113	Geologic Field Investigations	3
POL 1013	Introduction to American Politics (core)	3
Required Track Course		3
Required Track Course		3
Component Area Option (core)		3
<b>Credit Hours</b>		<b>15</b>

<b>Spring</b>		
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
Required Track Course		3
Required Track Course		3
<b>Credit Hours</b>		<b>17</b>

<b>Fourth Year</b>		
<b>Fall</b>		
GEO 4001	Experiential Learning Experience	1
American History (core)		3
Language, Philosophy & Culture (core)		3
Required Track Course		3
Free Elective		3
Free Elective		3
<b>Credit Hours</b>		<b>16</b>

<b>Spring</b>		
American History (core)		3
Creative Arts (core)		3
Social & Behavioral Sciences (core)		3
Free Elective		3
Free Elective		2
<b>Credit Hours</b>		<b>14</b>
<b>Total Credit Hours</b>		<b>120</b>

**B.S. in Geosciences (Environmental Geoscience Track) – Recommended Four-Year Academic Plan**

<b>First Year</b>		
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory	4
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>14</b>

<b>Spring</b>		
GEO 3373	Geochemistry	3
CS 1173	Data Analysis and Visualization	3
GEO 1123 & GEO 1111	Life Through Time and Physical Geology Laboratory	4
MAT 1214	Calculus I (core)	4
<b>Credit Hours</b>		<b>14</b>

<b>Second Year</b>		
<b>Fall</b>		
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)	4
<b>Credit Hours</b>		<b>16</b>

<b>Spring</b>		
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 (core)	4
WRC 1023	Freshman Composition II (core)	3
Required Track Course		3
<b>Credit Hours</b>		<b>14</b>

<b>Third Year</b>		
<b>Fall</b>		
GEO 3113	Geologic Field Investigations	3
POL 1013	Introduction to American Politics (core)	3
Required Track Course		3
Required Track Course		3
Component Area Option (core)		3
<b>Credit Hours</b>		<b>15</b>

<b>Spring</b>		
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 or Civil Rights in Texas and America	3
Required Track Course <sup>2</sup>		3
Required Track Course <sup>2</sup>		3
<b>Credit Hours</b>		<b>17</b>

<b>Fourth Year</b>		
<b>Fall</b>		
GEO 4001	Experiential Learning Experience	1
American History (core)		3
Language, Philosophy & Culture (core)		3
Required Track Course		3
Free Elective		3
Free Elective		3
<b>Credit Hours</b>		<b>16</b>

<b>Spring</b>		
American History (core)		3
Creative Arts (core)		3
Social & Behavioral Sciences (core)		3
Free Elective		3



Free Elective	2
<b>Credit Hours</b>	<b>14</b>
<b>Total Credit Hours</b>	<b>120</b>

### B.S. in Geosciences (Water Science Track) - Recommended Four-Year Academic Plan

#### First Year

Fall		Credit Hours
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory <sup>1</sup>	4
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory	4
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>14</b>

#### Spring

CS 1173	Data Analysis and Visualization	3
GEO 1123 & GEO 1131	Life Through Time and Life Through Time Laboratory	4
GEO 3373	Geochemistry	3
MAT 1214	Calculus I (core)	4
<b>Credit Hours</b>		<b>14</b>

#### Second Year

##### 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)	4
<b>Credit Hours</b>		<b>16</b>

##### Spring

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 (core)	4
WRC 1023	Freshman Composition II (core)	3
Required Track Course		3
<b>Credit Hours</b>		<b>14</b>

#### Third Year

##### Fall

GEO 3113	Geologic Field Investigations	3
POL 1013	Introduction to American Politics (core)	3
Required Track Course		3
Required Track Course		3
Component Area Option (core)		3
<b>Credit Hours</b>		<b>15</b>

#### 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
Required Track Course <sup>2</sup>		3
Required Track Course <sup>2</sup>		3
<b>Credit Hours</b>		<b>17</b>

#### Fourth Year

##### Fall

GEO 4001	Experiential Learning Experience	1
American History (core)		3
Language, Philosophy & Culture (core)		3
Required Track Course		3
Free Elective		3
Free Elective		3
<b>Credit Hours</b>		<b>16</b>

##### Spring

American History (core)		3
Creative Arts (core)		3
Social & Behavioral Sciences (core)		3
Free Elective		3
Free Elective		2
<b>Credit Hours</b>		<b>14</b>
<b>Total Credit Hours</b>		<b>120</b>

<sup>1</sup> These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

<sup>2</sup> If taking Field Geology Part I and/or Field Geology Part II as part of the required 18 hours of support work, these courses are taken during the summer but no earlier than the third year.

Note: Some courses are only offered once a year: Fall, Spring, or Summer. Check with the Department for scheduling of courses.

## Bachelor of Arts Degree in Geosciences

The Bachelor of Arts (B.A.) degree in Geosciences 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 Geosciences 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
<b>Total Credit Hours</b>	<b>42</b>

## Gateway Courses

Students pursuing the B.A. degree in Geosciences 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.

Code	Title	Credit Hours
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory	
GEO 1123 & GEO 1131	Life Through Time and Life Through Time Laboratory	

## Degree Requirements

Code	Title	Credit Hours
<b>A. Major courses</b>		
1. Required courses (34 hours)		
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 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 3373	Geochemistry	3
GEO 4001	Experiential Learning Experience	1

### B. Required Support Courses (19 hours)

CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
CS 1173	Data Analysis and Visualization	3
MAT 1214	Calculus I	4
Select one of the following:		4

PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory	
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or

PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	
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Select one of the following: 4

PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory	
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or

PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	
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**C. Geosciences Electives (16 hours) \*** 16

**D. Free Electives (18 hours) \*** 18

**Total Credit Hours** 87

\* In sections C and D above, select 16 geosciences elective credit hours and 18 free elective credit hours 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. If PHY 1943 and PHY 1963 are taken under section B above, MAT 1224 should be used to fulfill 3 hours of electives.

## Course Sequence Guide for B.A. Degree in Geosciences

This course sequence guide is designed to assist students in completing their UTSA undergraduate Geosciences degree requirements. *This course sequence is only 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 Geosciences – Recommended Four-Year Academic Plan

#### First Year

Fall	Credit Hours
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 (core)	3
<b>Credit Hours</b>		<b>14</b>
<b>Spring</b>		
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
Language, Philosophy & Culture (core)		3
<b>Credit Hours</b>		<b>14</b>
<b>Second Year</b>		
<b>Fall</b>		
Creative Arts (core)		3
GEO 2003 & GEO 2011	Mineralogy and Mineralogy Laboratory	4
GEO 3373	Geochemistry	3
WRC 1023	Freshman Composition II (core)	3
Free Elective		3
<b>Credit Hours</b>		<b>16</b>
<b>Spring</b>		
GEO 2113	Fundamentals of Geographic Information Systems (GIS)	3
POL 1013	Introduction to American Politics (core)	3
Select one of the following:		4
PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory	
or		
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory (core)	
Free Elective		3
<b>Credit Hours</b>		<b>13</b>
<b>Third Year</b>		
<b>Fall</b>		
GEO 3063 & GEO 3071	Paleontology and Paleontology Laboratory	4
GEO 3113	Geologic Field Investigations	3
Select one of the following:		4
PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory	
or		
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory (core)	
Upper-division GEO elective		3
<b>Credit Hours</b>		<b>14</b>
<b>Spring</b>		
GEO 3123 & GEO 3131	Sedimentation and Stratigraphy and Sedimentation and Stratigraphy Laboratory	4

GEO 3103 & GEO 3111	Structural Geology and Structural Geology Laboratory	4
Upper-division GEO elective		3
Upper-division GEO elective		3
Component Area Option (core)		3
<b>Credit Hours</b>		<b>17</b>
<b>Fourth Year</b>		
<b>Fall</b>		
GEO 4001	Experiential Learning Experience	1
American History (core)		3
Free elective		3
Free elective		3
Upper-division GEO elective		3
Upper-division GEO elective		3
<b>Credit Hours</b>		<b>16</b>
<b>Spring</b>		
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
Free Elective		3
Free Elective		3
Upper-division GEO elective		1
<b>Credit Hours</b>		<b>16</b>
<b>Total Credit Hours</b>		<b>120</b>

<sup>1</sup> 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 Earth and Planetary Sciences for scheduling of courses.

## Minor in Geology

The Geology minor is designed for students in a variety of fields who desire a scientific understanding of the planet Earth, including earth materials and processes, and the history of the planet and its life. The Minor may be particularly relevant to majors including education, archeology, geography, environmental science/studies, engineering, and many others. All students pursuing the Minor in Geology must complete 18 semester credit hours. All coursework must be completed with a grade of "C-" or better.

Code	Title	Credit Hours
<b>A. Required courses</b>		
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>B. Electives</b>		

Approved upper-division geology electives	6
<b>Total Credit Hours</b>	<b>18</b>

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.

## Certificate in Geographic Information System

Understanding and use of geospatial information is needed to address issues related to geological, environmental, biological, physical, business, and social processes. The objectives of the program is to train undergraduate students from any discipline at UTSA to be experts in using Geographic Information System (GIS) tools for creating, operating, and managing geospatial data, making professional maps, and analyzing data for various science and technique applications. This is an interdisciplinary program and it is administrated through the Earth and Planetary Sciences department. Courses currently offered through different departments (Earth and Planetary Sciences, Integrated Biology, Civil and Environmental Engineering, Political Science and Geography) can be used for the certificate program.

The requirement for the certificate is 15 semester credit hours (five courses). Courses taken in the certificate program may be applied towards other B.S. or B.A. degrees, depending on program requirements and with approval of the undergraduate advisor of record of the degree program. Students who are not currently in any UTSA degree program can apply as non-degree-seeking special student at the undergraduate level to pursue this certificate.

Code	Title	Credit Hours
A. One of the following:		3
CE 4293	Geographic Information Systems (GIS)	
ES 2113	Fundamentals of Geographic Information Systems (GIS)	
GEO 2113	Fundamentals of Geographic Information Systems (GIS)	
GES 3314	Introduction to Geographic Information Systems	
B. One of the following:		3
GEO 3343	Introduction to Geospatial Technologies	
GES 3323	Spatial Analysis	
C. One of the following:		3
GEO 4093	Principles of Remote Sensing	
GES 3363	GIS Cartography	
D. Required Earth and Planetary Sciences courses:		6
GEO 4073	Web GIS	
GEO 4103	Programming and Statistics for GIS	
<b>Total Credit Hours</b>		<b>15</b>

# Department of Integrative Biology

## Mission Statement

The mission of the Department of Integrative Biology is to educate, inspire, and assist students and regional diverse populations through a comprehensive curriculum, emergent pedagogy, and collaborative research. We focus on the complexity and factors that influence life and we strive to understand how the processes that sustain life and enable biological innovation operate and interact within and across different scales of organization: from molecules to cells, tissues to organisms, species, ecosystems, biomes, and the Earth.

## General Information

Faculty conduct research related to how environments affect cells, microbes, plants, animals, and ecosystems. Researchers' interests range from cell growth, development, and reproduction, to the effects of hormones on plant growth and plant development, to signaling between plants, to ecology. The department also has a strong core of faculty interested in the conservation and restoration of our natural resources, including soil health, river restoration, and wildlife habitat.

## Degrees

The Department of Integrative Biology offers the following degrees:

- Bachelor of Science degree in Biology
  - Concentration in Cell and Molecular Biology
  - Concentration in Ecology
  - Concentration in Plant Biology
  - Concentration in Premedical Sciences
  - Concentration in Grades 7–12 Biology Teacher Certification in collaboration with UTeachSA.
- Bachelor of Science degree in Environmental Science
- Bachelor of Arts degree in Environmental Studies
- Bachelor of Science in Multidisciplinary Science with Grades 7–12 Science Teacher Certification (in collaboration with UTeachSA)
- Minor in Biology
- Minor in Environmental Science

To create a well-rounded graduate, students are encouraged to get involved in research and outreach activities as soon as possible.

## Educational Objectives

Upon graduation, students in Department of Integrative Biology programs will be able to:

- Explain foundational concepts related to the specific degree.
- Apply the process of scientific inquiry.
- Demonstrate critical thinking skills.
- Use appropriate field and/or laboratory methods to collect quality data.
- Use appropriate quantitative and qualitative methods to evaluate scientific data.
- Demonstrate ability to work effectively in a team with others from diverse disciplines and backgrounds.

- Effectively communicate scientific information, and the relationship between science and society, to a diverse audience through oral, written, and visual means.

## Health Careers Pathways

The Department of Integrative Biology offers programs that supports students interested in pursuing professional or graduate programs (e.g., medical, dental, pharmacy and veterinarian) in health-related professions. See the Degrees (p. 305) page for more information. Students can also visit the UTSA Health Professions office (<https://www.utsa.edu/healthprofessions/>) for more information.

## Sophomore Biology Research Initiative (SBRI)

The Sophomore Biology Research Initiatives offers eligible second-year students to engage in authentic research with faculty and graduate students while earning academic credit. The opportunity to be part of the SBRI is limited, so students should register early. See the Degrees (p. 305) page for more information about SBRI.

- B.S. Degree in Biology (p. 305)
  - Concentration in Cellular and Molecular Biology (p. 307)
  - Concentration in Ecology (p. 307)
  - Concentration in Plant Biology (p. 308)
  - Concentration in Premedical Sciences (p. 308)
  - Concentration in 7-12 Biology Teacher Certification (p. 308)
- B.S. Degree in Environmental Science (p. 313)
- B.A. Degree in Environmental Studies (p. 316)
- B.S. Degree in Multidisciplinary Science (p. 319)

## Bachelor of Science Degree in Biology

The Bachelor of Science (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. For students planning to attend medical, dental, or graduate school in biological and applied sciences, this major provides a strong foundation in the basic life sciences. The program of study is structured around a comprehensive curriculum that includes genetics, physiology, cell biology, chemistry, physics, computer science, and mathematics. This foundational knowledge along with laboratory experience prepares students for research and technical positions in universities, government, and industry. At the upper-division level, students wanting to specialize can choose from five concentrations: Cellular and Molecular Biology, Ecology, Plant Biology, Premedical Sciences, and Grades 7–12 Biology Teacher Certification. The degree also offers a pathway to Physical Therapy doctoral programs and Physician Assistance master's programs.

Some of the careers a B.S. Degree in Biology will prepare students for are animal scientist, biochemist, bio-engineer, biometrician, botanist, chiropractor, dentist, ecologist, food scientist technologist, forester, medical librarian, medical technologist, microbiologist, molecular biologist, neurobiologist, ophthalmologist, optometrist, pharmaceutical salesperson, pharmacy technician, physical therapist, physician, physician assistant, radiation technologist, research scientist, science teacher, park naturalist, test and inspection technician, veterinarian, wildlife biologist, zoologist, or a zoo or aquarium administrator.

The minimum number of semester credit hours required for the B.S. degree in Biology, including the Core Curriculum requirements, is 120. To

complete the Grades 7-12 Biology Teacher Certification Concentration requires a minimum of 124 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.

## Program Outcomes

Graduates of the B.S. Degree in Biology program will be able to:

- Explain foundational concepts in biology, including evolution, cell theory, the chemical basis of life, expression and transmission of genetic information, energy transfer and transformation, integration of living systems, and species diversity.
- Explain the relationship between structure and function at all levels of biological organization, including molecular, cellular, organismal, population, and ecosystem levels.
- Apply the process of scientific inquiry.
- Use appropriate field and/or laboratory methods to collect quality data.
- Use appropriate quantitative and qualitative methods to evaluate biological data.
- Demonstrate critical thinking skills in relation to biological issues.
- Demonstrate ability to work effectively in a team with others from diverse disciplines and backgrounds.
- Effectively communicate scientific information, and the relationship between science and society, to a diverse audience through oral, written, and visual means.

## Sophomore Biology Research Initiative

Students may apply to participate in the Sophomore Biology Research Initiative. After acceptance, students will take BIO 2953 Special Topics in Biology followed by BIO 3053 Sophomore Research Experience during their sophomore year after completing their first 30 hours. Students should apply after their first semester. A total of six hours will be completed. BIO 2953 Special Topics in Biology will replace the required laboratories Molecular Genetics Laboratory (BIO 2362) and Molecular Biochemistry Laboratory (BIO 3362). During their junior year, students are encouraged to take BIO 3382 Sophomore Research Initiative Peer Mentor and serve as a mentor to sophomore students. SBRI allows students to engage in authentic research with faculty and graduate students. Students working in teams will conduct their research projects on a specific biological problem over two semesters. Several different research topics will be available to choose from. There will be approximately two hours of lecture/lab meeting and six hours of lab work per week. Students will present their final data in poster format at an organized symposium. The opportunity to be part of the SBRI is limited, so students should register early.

## Health Career Pathways

For those students interested in using a biology degree as a pathway to health-related professional school, **it is important to remember that each medical, dental, or other health-related professional school determines its course requirements for admission.** There is a significant similarity within each of these professional schools, but differences do occur. Students should refer to the respective school of interest website for the official and most current requirements for that particular school.



For those students interested in medical, dental, and veterinarian schools in Texas, the Concentration in Premedical Sciences offers the prerequisites required for most Texas schools as well as other courses to prepare students for these professional schools. Visit the Texas Medical & Dental Schools Application Service (<https://www.tmdsas.com/>) website for more information and a list of the general requirements.

Please see our website for a curriculum map for pathways to a career as a physical therapist or a physician assistant. For more information about physical therapy graduate programs in Texas visit Texas Physical Therapy Association (<https://www.tpta.org/pt-schools/>). Information about physician assistant studies in Texas can be found at the Texas Academy of Physician Assistants ([https://www.tapa.org/AMSIMIS/TAPA/Student\\_Center/Texas\\_PA\\_Programs.aspx](https://www.tapa.org/AMSIMIS/TAPA/Student_Center/Texas_PA_Programs.aspx)).

Students can also visit the University's Health Professions office at <https://www.utsa.edu/healthprofessions/>.

### Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. Degree in Biology must complete 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 to meet the minimum number of semester credit hours required for this degree.

- MAT 1193 may be used to satisfy the Core Curriculum requirement in the Mathematics Component Area as well as a major requirement. (Students in the Concentration in Grades 7-12 Biology Teaching Certification can substitute STA 1053 for MAT 1193.)
- BIO 1203 Biosciences I for Science Majors, BIO 1223 Biosciences II for Science Majors, PHY 1943 Physics for Scientists and Engineers I or PHY 1963 Physics for Scientists and Engineers II may be used for the six hours of Core Curriculum requirement in Life and Physical Sciences Component Area, as well as major requirements.
- AIS 1263 AIS: Life and Health Sciences is required for the Core Curriculum requirement in the First Year Experience Component Area.
- ENG 2413 Technical Writing is required as a major requirement and satisfies the Core Curriculum requirement in the Core Component Option.
- PSY 1013 Introduction to Psychology is required for the Concentration in Premedical and satisfies the Core Curriculum requirement in the Social and Behavioral Component Area.

#### 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
<b>Total Credit Hours</b>	<b>42</b>

### Gateway Courses

Students pursuing the B.S. Degree in Biology must 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 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.

Code	Title	Credit Hours
BIO 1203	Biosciences I for Science Majors	
BIO 1223	Biosciences II for Science Majors	
BIO 2313	Genetics	

### Degree Requirements

Code	Title	Credit Hours
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#### A. Required courses in the major

1. Biology requirements:		20
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors	
BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors	
BIO 2313	Genetics	
BIO 3413	General Physiology	
BIO 3513	Biochemistry	
BIO 3813	Cell Biology (NDRB 3813)	
2. Advanced Laboratory options:		4-6
BIO 2362	Molecular Genetics Laboratory	
BIO 3362	Molecular Biochemistry Laboratory	
For Sophomore Biology Research Initiative Students		
BIO 2953	Special Topics in Biology (taken two times in consecutive semesters for a total of 6 hours)	

#### 3. Biology electives:

Additional biology electives at the upper-division level 21

For students interested in focusing on computational biology, we recommend BIO 3523 Advanced Computational Biology and BIO 3253 R Coding in Environmental Science and Ecology

#### 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:		16
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	
2. Required mathematics and statistics courses:		6
MAT 1193	Calculus for the Biosciences	
STA 1403	Probability and Statistics for the Biosciences	

Students pursuing the Concentration in Grades 7–12 Teacher Certification can substitute STA 1053 for both MAT 1193 and STA 1403.

3. Required physics courses selected from 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. Required computer science course:		3
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BIO 1173	Introduction to Computational Biology	
or CS 1173	Data Analysis and Visualization	

5. Required communication courses		6
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ENG 2413	Technical Writing (also satisfies core requirement)	
COM 2113	Public Speaking	

**C. Free electives**

Select 6 semester credit hours of free electives, depending on the laboratory sequence chosen under section A2, to complete 120 hours. 1-4 credit hours must be at the upper-division level to reach the minimum requirement of 39 upper-division semester credit hours. Students pursuing the Concentration in Grades 7–12 Teacher Certification will take required courses for teacher certification in lieu of free electives (see concentration requirements below).

Students interested in focusing on computational biology should take ES 2113 - Geographical Information Systems

<b>Total Credit Hours</b>		<b>90-92</b>
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\*Note: Students in the Concentration in Grades 7-12 Teaching Certification have a defined program of study outlined below. Physics laboratories noted by an asterisk (\*) are not required for the Concentration in Grades 7-12 Teaching Certification.

## Concentrations

For students interested in research, teaching, graduate, or professional programs, the Department of Integrative Biology offers five concentrations. 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 the Biology degree and concentration, the student may need to take additional upper-division Biology courses 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 general B.S. Degree in Biology.

### Concentration in Cell and Molecular Biology

The coursework within the Concentration in Cell and Molecular Biology 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. More information can be found in the Department of Neurosciences, Development and Regenerative Biology. (p. 331)

All candidates for the Concentration in Cell and Molecular Biology must complete the following:

Code	Title	Credit Hours
BIO 3913	Molecular Biology	3
or NDRB 3913	Molecular Biology	
BIO 3663	Human Embryology	3
or NDRB 3663	Human Embryology	
Select three of the following:		9
BIO 3933	Principles of Cancer Biology	
or NDRB 3993	Principles of Cancer Biology	
BIO 4143	Developmental Biology	
or NDRB 4143	Developmental Biology	
BIO 4453	Endocrinology	
or NDRB 4453	Endocrinology	
BIO 4723	Virology	
or MMI 4723	Virology	
BIO 4743	Immunology	
or MMI 4743	Immunology	
BIO 4923	Laboratory Research: Biology Concentrations (Research must be in a laboratory engaged in molecular biology research.)	
or MMI 4923	Laboratory Research	
or NDRB 4923	Laboratory Research	
NDRB 3463	Brain Diseases	
NDRB 4153	Frontiers in Pluripotent Stem Cells	
NDRB 4483	Developmental Neuroscience: From Zygote to Brain Circuits	

<b>Total Credit Hours</b>		<b>15</b>
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### Concentration in Ecology

The coursework within the Concentration in Ecology 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 Ecology must complete the following:

BIO 3283	Principles of Ecology	3
BIO 3292	Principles of Ecology Laboratory	2
Select three of the following:		9
BIO 3073	Environmental Rhetoric and Technical Communication	
BIO 3113	Ichthyology	
BIO 3213	Animal Behavior	
BIO 3233	Survey of Insects	

BIO 3253	R Coding in Environmental Science and Ecology
BIO 3293	Mammalogy
BIO 3303	Entomology
BIO 3323	Evolution
BIO 3353	Herpetology
BIO 4033	Conservation Biology
BIO 4053	Wildlife Ecology
BIO 4063	Ornithology
BIO 4233	Field Biology
BIO 4263	River Ecosystems
BIO 4273	Fish Ecology
BIO 4283	Plant-Soil-Microbe Interactions
BIO 4303	Aquatic Ecology
BIO 4323	Restoration Ecology
BIO 4773	Microbial Ecology and Metagenomics
BIO 4923	Laboratory Research: Biology Concentrations (Research must be in a laboratory engaged in ecological research.)
<b>Total Credit Hours</b>	
	<b>14</b>

### Concentration in Plant Biology

The coursework within the Concentration in Plant Biology 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:

Code	Title	Credit Hours
BIO 3343	Plant Cell Biology	3
BIO 4313	Plant Physiological Ecology	3
Select three of the following:		9
BIO 3263	The Woody Plants	
BIO 3273	Biology of Flowering Plants	
BIO 3333	Plants and Society	
BIO 4283	Plant-Soil-Microbe Interactions	
BIO 4643	Medicinal Plants	
BIO 4923	Laboratory Research: Biology Concentrations (Research must be in a laboratory engaged in plant-based research.)	
<b>Total Credit Hours</b>		<b>15</b>

### Concentration in Premedical Sciences

The B.S. degree in Biology with a Concentration in Premedical Sciences is designed to prepare students for professional programs in medicine, dentistry, pharmacy, or veterinary science. This concentration has a recommended curriculum that is designed to meet the requirements for entry into these professional schools and to prepare students for the MCAT, DAT, PCAT, or GRE examinations. The coursework within the Concentration in Premedical Sciences must be completed with a minimum cumulative grade point average of 3.0 or better. All candidates for the Concentration in Premedical Sciences must complete the following:

Code	Title	Credit Hours
BIO 2992	Medical Terminology	2
BIO 3013	Introduction to Clinical Medicine and Pathology	3
or MMI 3013	Introduction to Clinical Medicine and Pathology	
BIO 3433	Neurobiology	3
or NDRB 3433	Neurobiology	
BIO 3643 & BIO 3642	Advanced Physiology I and Clinical Anatomy Laboratory I	5
BIO 3653 & BIO 3652	Advanced Physiology II and Clinical Anatomy Laboratory II	5
BIO 3663	Human Embryology	3
or NDRB 3663	Human Embryology	
BIO 3713	Microbiology	3
or MMI 3713	Microbiology	
BIO 4473	Advanced Clinical Medicine and Pathology	3
or MMI 4473	Advanced Clinical Medicine and Pathology	
PSY 1013	Introduction to Psychology (meets Core Curriculum requirement for Social and Behavior Component Area)	3
<b>Total Credit Hours</b>		<b>30</b>

### Concentration in Grades 7–12 Biology Teacher Certification

The B.S. degree in Biology with a Concentration in Grades 7-12 Biology 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 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, B.S. in Neurosciences, or the B.S. degree in Microbiology and Immunology to receive a degree in Biology.

The minimum number of semester credit hours required for the B.S. degree in Biology with Teacher Certification, including the Core Curriculum requirements, is 124. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level. The coursework within the Concentration in Grades 7–12 Biology Teacher Certification must be completed with a minimum cumulative grade point average of 2.5 or better.

### Criminal Background Check

Teacher preparation programs at UTSA requires fieldwork in public schools. This requires that a student be able to pass a criminal background check conducted by the school districts. It is the responsibility of the student to determine if their criminal history background will present a problem before applying for admission to the teacher preparation program. Students with a problematic criminal history will encounter difficulty in completing any fieldwork requirements and may not be able to complete the program.

All candidates for the Concentration in Grades 7–12 Biology Teacher Certification must complete the following:

Code	Title	Credit Hours
BIO 3283	Principles of Ecology	3
BIO 3323	Evolution	3
BIO 3713	Microbiology	3
BIO 4813	Brain and Behavior	3
ESL 3083	Second Language Teaching and Learning for Grades 7-12	3
LTED 3773	Reading and Writing Across the Disciplines-Grades 7-12	3
SPE 3603	Introduction to Special Education	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 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
<b>Total Credit Hours</b>		<b>42</b>

### Course Sequence Guide for B.S. Degrees in Biology

#### B.S. in Biology – Recommended Four-Year Academic Plan for the General B.S. in Biology or Concentrations in Cell & Molecular Biology, Ecology, or Plant Biology.

See below for the recommended four-year plan for students accepted to the Sophomore Biology Research Initiative, Concentration in Premedical, or Concentration in Grades 7-12 Biology Teaching Certification.

This course sequence guide is designed to assist students in completing their UTSA general B.S. degree in Biology or with concentrations in Cell & Molecular Biology, Ecology, or Plant Biology. *This course sequence is only 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.**

#### First Year

Fall	Credit Hours
AIS 1203 Academic Inquiry and Scholarship (core)	3
BIO 1203 & BIO 1201 Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors (core and major)	4
CHE 1103 & CHE 1121 General Chemistry I and General Chemistry I Laboratory	4
WRC 1013 Freshman Composition I (core)	3
<b>Credit Hours</b>	<b>14</b>

#### Spring

BIO 1223 & BIO 1221 Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors (core and major)	4
CHE 1113 & CHE 1131 General Chemistry II and General Chemistry II Laboratory	4

MAT 1193 Calculus for the Biosciences (core and major)	3
WRC 1023 Freshman Composition II (core)	3

**Credit Hours 14**

#### Second Year

##### Fall

BIO 2313 Genetics	3
BIO 2362 Molecular Genetics Laboratory	2
CHE 2603 & CHE 2612 Organic Chemistry I and Organic Chemistry I Laboratory	5
STA 1403 Probability and Statistics for the Biosciences	3
ENG 2413 Technical Writing (core)	3

**Credit Hours 16**

##### Spring

BIO 1173 Introduction to Computational Biology	3
BIO 3813 Cell Biology	3
CHE 3643 Organic Chemistry II	3
Select one of the following:	4

PHY 1603 & PHY 1611 Algebra-based Physics I and Algebra-based Physics I Laboratory

or

PHY 1943 & PHY 1951 Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory

Social and Behavioral (core) 3

**Credit Hours 16**

#### Third Year

##### Fall

BIO 3413 General Physiology	3
COM 2113 Public Speaking	3
Select one of the following:	4

PHY 1963 & PHY 1971 Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory

or

PHY 1623 & PHY 1631 Algebra-based Physics II and Algebra-based Physics II Laboratory

American History (core) 3

Language, Philosophy & Culture (core) 3

**Credit Hours 16**

##### Spring

BIO 3513 Biochemistry	3
BIO 3362 Molecular Biochemistry Laboratory	2
Government-Political Science (core)	3
Creative Arts (core)	3
Upper-division BIO elective (3xx3)	3-5
For Concentration in Ecology take BIO 3283 and BIO 3292	

For Concentration in Cell and Molecular take BIO 3913 or NDRB 3913 Molecular Biology	
For Concentration in Plant Biology take BIO 3343 Plant Cell Biology	
<b>Credit Hours</b>	<b>14-16</b>
<b>Fourth Year</b>	
<b>Fall</b>	
Upper-division BIO elective	3
Students in the Cell and Molecular Biology Concentration should take BIO 3663 or NDRB 3663 Human Embryology	
Upper-division BIO elective	3
Upper-division BIO elective	3
American History (core)	3
Free upper-division elective	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
Upper-division BIO elective	3
Upper-division BIO elective	3
Upper-division BIO elective	3
Free upper-division elective (to meet 120 hour minimum)	1-3
Government-Political Science (core)	3
<b>Credit Hours</b>	<b>15-13</b>
<b>Total Credit Hours</b>	<b>120</b>

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Integrative Biology for scheduling of courses.

**B.S. in Biology – Recommended Four-Year Academic Plan for Students Participating in *Sophomore Biology Research Initiative*.**

This course sequence guide is designed to assist students in completing their UTSA B.S. Degree in Biology for students participating in the Sophomore Biology Research Initiative. *This course sequence is only 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>First Year</b>		
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors (core and major)	4
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>14</b>
<b>Spring</b>		
BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors (core and major)	4

CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	4
MAT 1193	Calculus for the Biosciences (core and major)	3
WRC 1023	Freshman Composition II (core)	3
<b>Credit Hours</b>		<b>14</b>
<b>Second Year</b>		
<b>Fall</b>		
BIO 2313	Genetics	3
BIO 2953	Special Topics in Biology (SBRI)	3
CHE 2603 & CHE 2612	Organic Chemistry I and Organic Chemistry I Laboratory	5
STA 1403	Probability and Statistics for the Biosciences	3
<b>Credit Hours</b>		<b>14</b>
<b>Spring</b>		
BIO 3813	Cell Biology	3
BIO 3053	Sophomore Research Experience	3
CHE 3643	Organic Chemistry II	3
Select one of the following:		4
PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory	
or		
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>16</b>
<b>Third Year</b>		
<b>Fall</b>		
BIO 3413	General Physiology	3
BIO 3382	Sophomore Research Initiative Peer Mentor	2
COM 2113	Public Speaking	3
Select one of the following sequences:		4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	
PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory	
American History (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
BIO 1173	Introduction to Computational Biology	3
BIO 3513	Biochemistry	3
BIO 4912	Independent Study	2
Government-Politics (core)		3
Social and Behavioral (core)		3



Creative Arts (core)	3
<b>Credit Hours</b>	<b>17</b>

**Fourth Year****Fall**

Upper-division BIO elective	3
Upper-division BIO elective	3
Free upper-division elective	3
American History (core)	3
Creative Arts (core)	3
<b>Credit Hours</b>	<b>15</b>

**Spring**

Upper-division BIO elective	3
Upper-division BIO elective	3
Upper-division BIO elective	3
Upper-division BIO elective	3
Free upper-division elective	3
Language, Philosophy, & Culture (core)	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

**B.S. in Biology – Recommended Four-Year Academic Plan for Concentration in Premedical Sciences.**

This course sequence guide is designed to assist students in completing their UTSA B.S. Degree in Biology with a Premedical Sciences Concentration. *This course sequence is only 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.**

**First Year**

		<b>Credit Hours</b>
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors (core and major)	4
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>14</b>

**Spring**

BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors (core and major)	4
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	4
MAT 1193	Calculus for the Biosciences (core and major)	3
WRC 1023	Freshman Composition II (core)	3
<b>Credit Hours</b>		<b>14</b>

**Second Year****Fall**

BIO 2313	Genetics	3
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BIO 2362 or BIO 2953	Molecular Genetics Laboratory (SBRI students should take BIO 2953) or Special Topics in Biology	2-3
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CHE 2603 & CHE 2612	Organic Chemistry I and Organic Chemistry I Laboratory	5
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STA 1403	Probability and Statistics for the Biosciences	3
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ENG 2413	Technical Writing (core)	3
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**Credit Hours** **16**

**Spring**

BIO 2992	Medical Terminology	2
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BIO 3413	General Physiology	3
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BIO 3813	Cell Biology	3
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CHE 3643	Organic Chemistry II	3
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PSY 1013	Introduction to Psychology (core)	3
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**Credit Hours** **14**

**Third Year****Fall**

BIO 3013	Introduction to Clinical Medicine and Pathology	3
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BIO 3643 & BIO 3642	Advanced Physiology I and Clinical Anatomy Laboratory I	5
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Select one of the following sequences: 4

PHY 1603 & PHY 1611	Algebra-based Physics I and Algebra-based Physics I Laboratory	
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or

PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	
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American History (core)		3
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**Credit Hours** **15**

**Spring**

BIO 3653 & BIO 3652	Advanced Physiology II and Clinical Anatomy Laboratory II	5
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BIO 4473	Advanced Clinical Medicine and Pathology	3
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Choose one of the following two series of courses: 4

PHY 1623 & PHY 1631	Algebra-based Physics II and Algebra-based Physics II Laboratory	
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or

PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	
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Government-Political Science (core)		3
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**Credit Hours** **15**

**Fourth Year****Fall**

BIO 3513	Biochemistry	3
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BIO 3362	Molecular Biochemistry Laboratory	2
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BIO 3663	Human Embryology	3
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BIO 3713	Microbiology	3
American History (core)		3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>17</b>
<b>Spring</b>		
BIO 1173	Introduction to Computational Biology	3
BIO 3433	Neurobiology	3
COM 2113	Public Speaking	3
Government-Political Science (core)		3
Language, Philosophy, & Culture (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120</b>

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Integrative Biology for scheduling of courses.

**B.S. in Biology – Recommended Four-Year Academic Plan for Concentration in Grade 7-12 Biology with Teaching Certification.**

This course sequence guide is designed to assist students in completing their UTSA undergraduate B.S. Degree in Biology with a Grade 7-12 Biology Teaching Certification. *This course sequence is only 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. Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Integrative Biology for scheduling of courses.

**First Year**

<b>Fall</b>		<b>Credit Hours</b>
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors (core and major)	4
CHE 1103	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory	1
UTE 1111	Introduction to STEM Teaching Step 1	1
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>15</b>

**Spring**

BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors (core and major)	4
CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory	1
UTE 1122	Introduction to STEM Teaching Step 2	2
WRC 1023	Freshman Composition II (core)	3
Select one of the following:		3
MAT 1193	Calculus for the Biosciences (core)	

or

STA 1053	Basic Statistics (core)	
<b>Credit Hours</b>		<b>16</b>

**Summer**

American History (core)		3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>6</b>

**Second Year**

**Fall**

BIO 2313	Genetics	3
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory	2
CS 1173	Data Analysis and Visualization (core and major)	3
Select one of the following:		3

PHY 1603	Algebra-based Physics I	
or		
PHY 1943	Physics for Scientists and Engineers I	
UTE 3203	Knowing and Learning in Mathematics and Science	3
<b>Credit Hours</b>		<b>17</b>

**Spring**

BIO 2362	Molecular Genetics Laboratory	2
CHE 3643	Organic Chemistry II	3
Select one of the following:		3

PHY 1623	Algebra-based Physics II	
or		
PHY 1963	Physics for Scientists and Engineers II	
UTE 3213	Classroom Interactions	3
Social & Behavioral Sciences (core)		3
<b>Credit Hours</b>		<b>14</b>

**Summer**

American History (core)		3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>6</b>

**Third Year**

**Fall**

BIO 3283	Principles of Ecology	3
BIO 3362	Molecular Biochemistry Laboratory	2
BIO 3513	Biochemistry	3
BIO 3713	Microbiology	3
UTE 3023	Perspectives on Science and Mathematics	3
<b>Credit Hours</b>		<b>14</b>

**Spring**

BIO 3413	General Physiology	3
BIO 4813	Brain and Behavior	3
ESL 3083	Second Language Teaching and Learning for Grades 7-12	3
LTED 3773	Reading and Writing Across the Disciplines-Grades 7-12	3

Language, Philosophy, & Culture (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Fall</b>		
BIO 3323	Evolution	3
BIO 3813	Cell Biology	3
SPE 3603	Introduction to Special Education	3
UTE 4203	Project-Based Instruction	3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
UTE 4646	Clinical Teaching	6
<b>Credit Hours</b>		<b>6</b>
<b>Total Credit Hours</b>		<b>124</b>

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Integrative Biology for scheduling of courses.

## Bachelor of Science Degree in Environmental Science

The Bachelor of Science (B.S.) Degree in Environmental Science is designed for students interested in studying environmental problems from a scientific perspective. The major prepares students to deal with issues arising from the impact of human interaction on natural systems. The program of study is structured around a comprehensive curriculum that includes botany, zoology, geology, environmental statistics, geographical information systems, environmental law, soils, watershed processes, global change, fate and transport of chemicals, and environmental assessment. Students may choose to specialize further in one of four focus areas: 1) conservation and restoration ecology, 2) environmental management, 3) natural resources and wildlife management, and 4) aquatic sciences. 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.

Some of the careers a B. S. degree in Environmental Science will prepare students for are environmental biologist, environmental chemist, environmental consultant, environmental engineer, environmental geologist, environmental health and safety officer, environmental health officer, environmental lawyer, environmental manager, environmental science teacher, environmental scientist, environmental specialist, environmental technician, geographer, microbiologist, water quality scientist, or wildlife biologist.

The minimum number of semester credit hours required for the B.S. degree in Environmental 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.

All major and support work courses and the required prerequisites must be completed with a grade of "C-" or better.

## Program Outcomes

Graduates of the B.S. Degree in Environmental Science program will be able to:

- Explain foundational concepts in environmental science, including plant and animal biology, ecosystem ecology, toxicology, conservation biology, environmental policy, geology, climate change, and human impacts on the environment.
- Evaluate issues related to the environment using an interdisciplinary and multidisciplinary course of study.
- Apply the process of scientific inquiry.
- Use appropriate field and/or laboratory methods to collect quality data.
- Use appropriate quantitative and qualitative methods to evaluate environmental data.
- Demonstrate critical thinking skills in relation to environmental issues.
- Demonstrate ability to work effectively in a team with others from diverse disciplines and backgrounds.
- Effectively communicate scientific information, and the relationship between science and society, to a diverse audience through oral, written, and visual means.

### 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 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
<b>Total Credit Hours</b>	<b>42</b>

## Gateway Courses

Students pursuing the B.S. Degree in Environmental Science must 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 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.

Code	Title	Credit Hours
CHE 1083	Introduction to the Molecular Structure of Matter	3

CHE 1093	Introduction to Molecular Transformations	3
MAT 1093	Precalculus	3

## Degree Requirements

Code	Title	Credit Hours
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### A. Required environmental science courses (54 hours of which 6 are in the core) 54

Must be completed with a grade of "C-" or better

ES 1113 & ES 1111	Environmental Botany and Environmental Botany Laboratory	
ES 1123 & ES 1121	Environmental Zoology and Environmental Zoology Laboratory	
ES 1213 & ES 1211	Environmental Geology and Environmental Geology Laboratory	
ES 1314	Environmental Statistics	
ES 2013 & ES 2021	Introduction to Environmental Science I and Introduction to Environmental Science I Laboratory	
ES 2023 & ES 2031	Introduction to Environmental Science II and Introduction to Environmental Science II Laboratory	
ES 2113	Fundamentals of Geographic Information Systems (GIS)	
ES 3033 & ES 3042	Environmental Ecology and Environmental Ecology Laboratory	
ES 3123 & ES 3121	Introduction to Soils and Introduction to Soils Laboratory	
ES 3143 & ES 3141	Watershed Processes and Watershed Processes Laboratory	
ES 3203	Environmental Law	
ES 4103	Global Change	
ES 4203	Environmental Assessment	
ES 4212	Senior Seminar	
ES 4253	Sources, Fate, and Transport of Chemicals in the Environment	

### B. Required support courses (15 hours of which 6 are in the core) 15

Must be completed with a grade of "C-" or better

CHE 1083	Introduction to the Molecular Structure of Matter	
CHE 1093	Introduction to Molecular Transformations	
COM 2113	Public Speaking	
ENG 2413	Technical Writing	
MAT 1093	Precalculus	

### C. Area of Study courses 21

Upper-division environmental science 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 may select courses from the following areas of study:

### Conservation and Restoration Ecology

Required Courses:

ES 4213	Conservation Biology
ES 4233	Restoration Ecology

Select five courses from the following:

ES 3053	Environmental Remediation
ES 3073	Environmental Rhetoric and Technical Communication
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 3233	Survey of Insects
ES 3253	R Coding in Environmental Science and Ecology
ES 3303	Sustainable Development
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 4163	Renewable Energy
ES 4183	Environmental Toxicology
ES 4243	Wildlife Management
ES 4263	River Ecosystems
ES 4273	Fish Ecology
ES 4283	Plant-Soil-Microbe Interactions
ES 4293	Human Dimensions of Wildlife Management
ES 4303	Principles of Wildlife Management
ES 4503	Introduction to Environmental Risk Assessment
ES 4513	Advanced Environmental Risk Assessment
ES 4913	Independent Study
ES 4953	Special Studies in Environmental Science
ES 4963	Internship

### Environmental Management

Required Courses:

ES 3053	Environmental Remediation
ES 3103	Environmental Microbiology
ES 4183	Environmental Toxicology
ES 4503	Introduction to Environmental Risk Assessment
ES 4513	Advanced Environmental Risk Assessment

Select two courses from the following:

ES 3073	Environmental Rhetoric and Technical Communication
ES 3113	Ichthyology
ES 3133	Oceanography
ES 3153	Environmental Chemistry
ES 3253	R Coding in Environmental Science and Ecology
ES 3303	Sustainable Development
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 4263	River Ecosystems
ES 4283	Plant-Soil-Microbe Interactions
ES 4913	Independent Study
ES 4953	Special Studies in Environmental Science
ES 4963	Internship

**Natural Resources and Wildlife Management**

## Required courses:

ES 4133	Natural Resource Policy and Administration
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ES 4243	Wildlife Management
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## Select five courses from the following:

ES 3053	Environmental Remediation
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ES 3073	Environmental Rhetoric and Technical Communication
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ES 3103	Environmental Microbiology
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ES 3113	Ichthyology
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ES 3133	Oceanography
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ES 3153	Environmental Chemistry
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ES 3163	Ornithology
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ES 3173	Mammalogy
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ES 3183	Entomology
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ES 3193	Herpetology
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ES 3213	Biology of Flowering Plants
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ES 3223	Woody Plants
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ES 3233	Survey of Insects
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ES 3253	R Coding in Environmental Science and Ecology
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ES 3303	Sustainable Development
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ES 3953	Topics in Environmental Science
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ES 4023	Aquatic Ecology
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ES 4113	Field Biology
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ES 4123	Desert Biology
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ES 4153	Introduction to Sustainability
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ES 4163	Renewable Energy
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ES 4173	Waste Water Treatment
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ES 4183	Environmental Toxicology
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ES 4213	Conservation Biology
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ES 4233	Restoration Ecology
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ES 4263	River Ecosystems
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ES 4273	Fish Ecology
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ES 4283	Plant-Soil-Microbe Interactions
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ES 4293	Human Dimensions of Wildlife Management
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ES 4303	Principles of Wildlife Management
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ES 4913	Independent Study
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ES 4953	Special Studies in Environmental Science
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ES 4963	Internship
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**Aquatic Sciences**

## Required Courses:

ES 3113	Ichthyology
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ES 4023	Aquatic Ecology
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ES 4273	Fish Ecology
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## Select four courses from the following:

ES 3053	Environmental Remediation
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ES 3073	Environmental Rhetoric and Technical Communication
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ES 3103	Environmental Microbiology
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ES 3133	Oceanography
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ES 3153	Environmental Chemistry
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ES 3163	Ornithology
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ES 3173	Mammalogy
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ES 3183	Entomology
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ES 3193	Herpetology
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ES 3213	Biology of Flowering Plants
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ES 3223	Woody Plants
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ES 3233	Survey of Insects
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ES 3253	R Coding in Environmental Science and Ecology
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ES 3303	Sustainable Development
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ES 3953	Topics in Environmental Science
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ES 4113	Field Biology
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ES 4123	Desert Biology
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ES 4133	Natural Resource Policy and Administration
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ES 4153	Introduction to Sustainability
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ES 4163	Renewable Energy
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ES 4183	Environmental Toxicology
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ES 4243	Wildlife Management
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ES 4263	River Ecosystems
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ES 4283	Plant-Soil-Microbe Interactions
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ES 4293	Human Dimensions of Wildlife Management
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ES 4303	Principles of Wildlife Management
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ES 4503	Introduction to Environmental Risk Assessment
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ES 4513	Advanced Environmental Risk Assessment
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ES 4913	Independent Study
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ES 4953	Special Studies in Environmental Science
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ES 4963	Internship
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**Total Credit Hours****90**



## Course Sequence Guide for B.S. Degree in Environmental Science

This course sequence guide is designed to assist students in completing their UTSA B.S. Degree in Environmental 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 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	1
MAT 1093	Precalculus (core)	3
WRC 1013	Freshman Composition I (core)	3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>16</b>

#### Spring

COM 2113	Public Speaking (core)	3
ES 1113	Environmental Botany (core)	3
ES 1111	Environmental Botany Laboratory	1
ES 1314	Environmental Statistics	4
WRC 1023	Freshman Composition II (core)	3
<b>Credit Hours</b>		<b>14</b>

#### Second Year

Fall		Credit Hours
ES 2013	Introduction to Environmental Science I	3
ES 2021	Introduction to Environmental Science I Laboratory	1
ES 2113	Fundamentals of Geographic Information Systems (GIS)	3
CHE 1083	Introduction to the Molecular Structure of Matter	3
POL 1013	Introduction to American Politics (core)	3
American History (core)		3
<b>Credit Hours</b>		<b>16</b>

#### Spring

ES 2023	Introduction to Environmental Science II	3
ES 2031	Introduction to Environmental Science II Laboratory	1
ES 1213	Environmental Geology	3
ES 1211	Environmental Geology Laboratory	1
CHE 1093	Introduction to Molecular Transformations	3

ENG 2413	Technical Writing	3
<b>Credit Hours</b>		<b>14</b>

#### Third Year

Fall		Credit Hours
ES 3123	Introduction to Soils	3
ES 3121	Introduction to Soils Laboratory	1
ES 3033	Environmental Ecology	3
ES 3042	Environmental Ecology Laboratory	2
POL 1133	Texas Politics and Society (core)	3
ES Area of Study Required		3
<b>Credit Hours</b>		<b>15</b>

#### Spring

ES 3143	Watershed Processes	3
ES 3141	Watershed Processes Laboratory	1
ES 4253	Sources, Fate, and Transport of Chemicals in the Environment	3
ES Area of Study Required		3
ES Area of Study Elective		3
American History (core)		3
<b>Credit Hours</b>		<b>16</b>

#### Fourth Year

Fall		Credit Hours
ES 4103	Global Change (major)	3
ES 3203	Environmental Law (major)	3
ES Area of Study Elective (major)		3
ES Area of Study Elective (major)		3
Language, Philosophy & Culture (core)		3
<b>Credit Hours</b>		<b>15</b>

#### Spring

ES 4203	Environmental Assessment	3
ES 4212	Senior Seminar	2
ES Area of Study Elective		3
ES Area of Study Elective		3
Social and Behavioral Science (core)		3
<b>Credit Hours</b>		<b>14</b>

**Total Credit Hours** **120**

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Integrative Biology for scheduling of courses.

## Bachelor of Arts Degree in Environmental Studies

The Bachelor of Arts (B.A.) degree in Environmental Studies is designed to provide students with a multidisciplinary educational approach regarding environmental issues and foster system-thinking skills. The degree reinforces the crucial role of interdisciplinary approaches in environmental problem solving by emphasizing the sociocultural, historical, ethical, spiritual, economic, and political dimensions of complex environmental issues. Solving these problems requires an integration of disciplines to provide the understanding needed to address complex environmental issues.

The field includes study in basic principles of ecology and environmental science, as well as associated subjects such as ethics, geography,

policy, politics, law, economics, philosophy, environmental sociology, environmental justice, urban planning, pollution control, and natural resource management.

Some of the careers a B.A. degree in Environmental Studies will prepare students for are environmental consultant, environmental educator, environmental lobbyist, environmental planner, environmental attorney, natural resource specialist, outdoor education teacher, park naturalist, park ranger, resource economist, policy analyst, public relations specialist, sustainability specialist, and urban and regional planner.

The minimum number of semester credit hours required for the B.A. degree in Environmental Studies, 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.

## Program Outcomes

Graduates of the B.A. Degree in Environmental Studies program will be able to:

- Explain foundational concepts in the natural sciences, social sciences, and humanities as applied to environmental issues, including human-environment interactions, monitoring the health of environmental systems, environmental policy & law, urbanization and impacts of built environments, sustainability, and socio-cultural influences on human-environment relationships.
- Apply systems thinking and multidisciplinary methodologies to address environmental problems.
- Apply the process of scientific inquiry.
- Demonstrate critical thinking skills in relation to environmental issues.
- Use appropriate field and/or laboratory methods to collect quality data.
- Use appropriate quantitative and qualitative methods to evaluate environmental data.
- Demonstrate ability to work effectively in a team with others from diverse disciplines and backgrounds.
- Effectively communicate scientific information, and the relationship between science and society, to a diverse audience through oral, written, and visual means.

## Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.A. Degree in Environmental 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 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
<b>Total Credit Hours</b>	<b>42</b>

## Degree Requirements

Code	Title	Credit Hours
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### A. Required courses (72 hours of which 12 are in the core) 72

Must be completed with a grade of "C-" or better		
ANT 2053	Introduction to Cultural Anthropology	
CHE 1083	Introduction to the Molecular Structure of Matter	
ECO 2003	Economic Principles and Issues	
ENG 2413	Technical Writing	
ES 1003	Survey Topics in Environmental Studies	
ES 1113	Environmental Botany	
ES 1123	Environmental Zoology	
ES 1213	Environmental Geology	
ES 1314	Environmental Statistics	
ES 2013 & ES 2021	Introduction to Environmental Science I and Introduction to Environmental Science I Laboratory	
ES 2023 & ES 2031	Introduction to Environmental Science II and Introduction to Environmental Science II Laboratory	
ES 2113	Fundamentals of Geographic Information Systems (GIS)	
COM 2113	Public Speaking	
ENG 3383	Writing in Public and Professional Contexts	
ES 3203	Environmental Law	
ES 4133	Natural Resource Policy and Administration	
ES 4153	Introduction to Sustainability	
ES 4163	Renewable Energy	
ES 4203	Environmental Assessment	
GES 3753	Climate Change	
MS 4333	Project Management	
PAD 3043	Public and Nonprofit Financial Management	
PAD 3163	Quantitative Analysis for Public Administration and Policy	

### B. Choose four (4) of the following courses 12

Twelve (12) semester credit hours of additional elective hours from the following list:

ANT 3223	Anthropology and the Environment
ANT 3333	Human Adaptability
ANT 3873	Food, Culture, and Society
COM 3023	Foundations of Communication
COM 3243	Persuasion
ES 3033	Environmental Ecology
ES 3123	Introduction to Soils

ES 3143	Watershed Processes	
ES 3163	Ornithology	
ES 3173	Mammalogy	
ES 3183	Entomology	
ES 3193	Herpetology	
ES 3213	Biology of Flowering Plants	
ES 3223	Woody Plants	
ES 4213	Conservation Biology	
GES 3613	Conservation of Resources	
GES 3713	Weather and Climate	
GES 3723	Physiography	
GES 3743	Biogeography	
HIS 4223	Environmental History of the United States	
HTH 4543	Environmental Health and Safety	
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	
SOC 3223	Population Dynamics and Demographic Techniques	
<b>C. Choose two of the following courses</b>		<b>6</b>
ES 4953	Special Studies in Environmental Science	
ES 4963	Internship	
ES 4113	Field Biology	
ES 4123	Desert Biology	
<b>Total Credit Hours</b>		<b>90</b>

### Course Sequence Guide for B.A. Degree in Environmental Studies

This course sequence guide is designed to assist students in completing their UTSA B.A. Degree in Environmental Studies. *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 Environmental Studies – Recommended Four-Year Academic Plan

First Year		Credit Hours
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
ES 1003	Survey Topics in Environmental Studies	3
ES 1123	Environmental Zoology (core and major)	3
WRC 1013	Freshman Composition I (core)	3
Mathematics (core)		3
<b>Credit Hours</b>		<b>15</b>

<b>Spring</b>		
CHE 1083	Introduction to the Molecular Structure of Matter	3
ES 1113	Environmental Botany (core and major)	3
POL 1013	Introduction to American Politics (core)	3
WRC 1023	Freshman Composition II (core)	3
Language, Philosophy, & Culture (core)		3
<b>Credit Hours</b>		<b>15</b>

<b>Second Year</b>		
<b>Fall</b>		
ENG 2413	Technical Writing (core and major)	3
ES 1314	Environmental Statistics	4
ES 2013	Introduction to Environmental Science I	3
ES 2021	Introduction to Environmental Science I Laboratory	1
American History (core)		3
<b>Credit Hours</b>		<b>14</b>

<b>Spring</b>		
COM 2113	Public Speaking (required and core)	3
ECO 2003	Economic Principles and Issues	3
ES 1213	Environmental Geology	3
ES 2023	Introduction to Environmental Science II	3
ES 2031	Introduction to Environmental Science II Laboratory	1
POL 1133	Texas Politics and Society (core)	3
<b>Credit Hours</b>		<b>16</b>

<b>Third Year</b>		
<b>Fall</b>		
ANT 2053	Introduction to Cultural Anthropology (core)	3
ENG 3383	Writing in Public and Professional Contexts	3
ES 3203	Environmental Law	3
American History (core)		3
Creative Arts (core)		3
<b>Credit Hours</b>		<b>15</b>

<b>Spring</b>		
ES 4163	Renewable Energy	3
MS 4333	Project Management	3
PAD 3043	Public and Nonprofit Financial Management	3
Elective		3
Elective		3
<b>Credit Hours</b>		<b>15</b>

<b>Fourth Year</b>		
<b>Fall</b>		
ES 2113	Fundamentals of Geographic Information Systems (GIS)	3
PAD 3163	Quantitative Analysis for Public Administration and Policy	3

GES 3753	Climate Change	3
Elective		3
Internship, Independent Study, Field Course		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
ES 4133	Natural Resource Policy and Administration	3
ES 4153	Introduction to Sustainability	3
ES 4203	Environmental Assessment	3
Elective		3
Internship, Independent Study, Field Course		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120</b>

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Integrative Biology for scheduling of courses.

## Bachelor of Science Degree in Multidisciplinary Science with Teacher Certification in Grades 7-12

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) and in conjunction with UTeachSA, 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.

Some of the careers a B.S. degree in Multidisciplinary Science will prepare students for are teaching various science courses in grades 7-12, including biology, chemistry, physics, integrated physics and chemistry, astronomy, Earth and space science, environmental systems, aquatic science, anatomy and physiology, medical microbiology, pathophysiology, and scientific research and design.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120 hours.

Thirty-nine of the total semester credit hours for the degree 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.

### Program Outcomes

Graduates of the B.S. Degree in Multidisciplinary Sciences program will be able to:

- Explain foundational concepts in the sciences, specifically:
  - physics and astronomy
  - chemistry
  - biology including cell structure, biological processes, genetics, and evolution

- environmental science including biodiversity
- geology
- Develop skills in teaching, learning, and assessment.
- Apply the process of scientific inquiry.
- Demonstrate critical thinking skills in relation to scientific issues.
- Use appropriate field and/or laboratory methods to collect quality data.
- Use appropriate quantitative and qualitative methods to evaluate scientific data.
- Demonstrate ability to work effectively in a team with others from diverse disciplines and backgrounds.
- Effectively communicate scientific information, and the relationship between science and society, to a diverse audience through oral, written, and visual means.

### Criminal Background Check

Teacher preparation programs at UTSA requires fieldwork in public schools. This requires that a student be able to pass a criminal background check conducted by the school districts. It is the responsibility of the student to determine if their criminal history background will present a problem before applying for admission to the teacher preparation program. Students with a problematic criminal history will encounter difficulty in completing any fieldwork requirements and may not be able to complete the program.

### 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 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
<b>Total Credit Hours</b>	<b>42</b>

### Gateway Course

Students pursuing the B.S. Degree in Multidisciplinary Science must complete the following Gateway Course with a grade of "C-" or better in no more than two attempts. A student who is unable to 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.

Code	Title	Credit Hours
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors	

### Degree Requirements

Code	Title	Credit Hours
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#### A. Required science and mathematics courses

AST 1033	Exploration of the Solar System	3
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors	4
BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors	4
BIO 2313	Genetics	3
BIO 3413	General 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 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 3033	Environmental Ecology	3
ES 3133	Oceanography	3
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory	4
MAT 1193 or STA 1053	Calculus for the Biosciences Basic Statistics	3
ES 4023	Aquatic Ecology	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 <sup>1</sup>	
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory <sup>1</sup>	

#### Education Courses

30 semester credit hours of UTeachSA and education courses		
ESL 3083	Second Language Teaching and Learning for Grades 7-12	3
LTED 3773	Reading and Writing Across the Disciplines-Grades 7-12	3
SPE 3603	Introduction to Special Education	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 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
<b>Total Credit Hours</b>		<b>87</b>

### Certification Requirements (Composite Science Emphasis)

Students seeking a B.S. Degree in Multidisciplinary Sciences (MDS) 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 M.D.S. 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

		Credit Hours
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors (core and major)	4
WRC 1013	Freshman Composition I (core)	3
UTE 1111	Introduction to STEM Teaching Step 1	1
American History (core)		3
<b>Credit Hours</b>		<b>14</b>

#### Spring

BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors (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 (core)	3
UTE 1122	Introduction to STEM Teaching Step 2	2
American History (core)		3
<b>Credit Hours</b>		<b>15</b>

#### 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
<b>Credit Hours</b>		<b>12</b>



**Second Year****Fall**

CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
ES 2013 & ES 2021	Introduction to Environmental Science I and Introduction to Environmental Science I Laboratory	4
UTE 3203	Knowing and Learning in Mathematics and Science	3
Creative Arts (core)		3

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**Credit Hours** **14**
**Spring**

CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	4
GEO 1103 & GEO 1111	Physical Geology and Physical Geology Laboratory	4
UTE 3213	Classroom Interactions	3
Government-Political Science (core)		3

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**Credit Hours** **14**
**Third Year****Fall**

BIO 2313	Genetics	3
ES 2023 & ES 2021	Introduction to Environmental Science II and Introduction to Environmental Science I Laboratory	4
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	

or

PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory	
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**Credit Hours** **14**
**Spring**

ES 3033	Environmental Ecology	3
ES 3133	Oceanography	3
SPE 3603	Introduction to Special Education	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	

or

PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory	
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**Credit Hours** **16**
**Fourth Year****Fall**

AST 1033	Exploration of the Solar System	3
BIO 3413	General Physiology	3
ES 4023	Aquatic Ecology	3
ESL 3083	Second Language Teaching and Learning for Grades 7-12	3
LTED 3773	Reading and Writing Across the Disciplines-Grades 7-12	3

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**Credit Hours** **15**
**Spring**

CI 4646	Clinical Teaching: Grades 7-12	6
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**Credit Hours** **6**


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**Total Credit Hours** **120**

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 Biology (p. 321)
- Minor in Environmental Science (p. 321)

## 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.

Code	Title	Credit Hours
<b>A. Required courses</b>		
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors	4
BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors	4
BIO 2313	Genetics	3
<b>B. 3000- or 4000-level organized biology courses</b>		
Three upper-division biology lecture courses. Excludes laboratory, independent study, research and seminar courses. Substitutions are not allowed without approval of the Biology department.		9
<b>Total Credit Hours</b>		<b>20</b>

## 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 their academic 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.

Code	Title	Credit Hours
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	
<b>Total Credit Hours</b>		<b>22</b>

## Department of Mathematics

### Mission Statement

The Department of Mathematics is dedicated to research, high-quality instruction and learning, community engagement and public service. The department embraces excellence, multicultural traditions, with the mission to empower its undergraduate and graduate students, especially those from backgrounds underrepresented in the mathematical sciences.

### General Information

The Department serves as the point of articulation for disciplines across science, technology, and engineering represented in the College of Sciences at UTSA and beyond. The Department is a center for intellectual and creative resources via its diverse group of faculty with the mission to contribute at all levels to socioeconomic development—for Texas, the nation, and the world.

### Degrees

The Department of Mathematics offers three Bachelor of Science degrees: the B.S. in Mathematics, the B.S. in Mathematics for Teaching, and the B.S. in Mathematics of Data and Computing, offered as a joint degree with the Department of Computer Science.

The Mathematics programs offers students the opportunity to prepare to provide technical support and conduct research for high-technology industries, government, and private companies. The Mathematics for Teaching degree includes a component for those students wishing to obtain state certification to teach mathematics at the secondary level. The Mathematics of Data and Computing degree prepares students with strong interests in both mathematics and computer science to work in areas involving data science, data analysis, or computational mathematics. All three degrees prepare students to pursue advanced graduate study. 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.

### Educational Objectives

Upon graduation, students in the Department of Mathematics programs will be able to:

- Exhibit a knowledge of mathematical concepts, methods, reasoning and language.
- Communicate mathematical concepts and procedures with clarity and precision.
- Use computational techniques to analyze and synthesize numerical data.
- Solve problems in computational and theoretical mathematics.
- Use mathematical techniques to model real-world processes.

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- B.S. Degree in Mathematics (p. 323)
  - B.S. Degree in Mathematics for Teaching (p. 324)
  - B.S. Degree in Mathematics of Data and Computing (p. 326)

## Bachelor of Science Degree in Mathematics

The Bachelor of Science (B.S.) Degree in Mathematics offers students the opportunity to prepare to provide technical support and conduct research for high-technology industries, government, and private companies. 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 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
<b>Total Credit Hours</b>	<b>42</b>

### 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.

Code	Title	Credit Hours
MAT 1214	Calculus I	
MAT 1224	Calculus II	

## Mathematics Degree Requirements

Code	Title	Credit Hours
<b>A. Required Mathematics courses</b>		
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 1313	Algebra and Number Systems	3
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>B. Computer Science courses</b>		
Select one of the following:		3-4
CS 1063	Introduction to Computer Programming I	
CS 1714	Computer Programming II	
CS 2073	Computer Programming with Engineering Applications	
<b>C. Required Mathematics/Statistics courses</b>		
MAT 3613	Differential Equations I	3
MAT 3633	Numerical Analysis	3
MAT 4223	Real Analysis II	3
MAT 4233	Modern Abstract Algebra	3
MAT 4273	Topology	3
STA 3003	Applied Statistics	3
STA 3513	Probability and Statistics	3
<b>D. Upper-division courses in mathematics or statistics</b>		
Select 9 semester credits of upper-division courses in mathematics or statistics approved by the student's advisor		9
<b>E. Electives</b>		
Select 20 or 21 semester credit hours of electives		20-21
<b>Total Credit Hours</b>		<b>81</b>

### Course Sequence Guide for B.S. Degree in Mathematics

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 – 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
MAT 1313	Algebra and Number Systems	3
WRC 1013	Freshman Composition I (core)	3

American History (core)		3
<b>Credit Hours</b>		<b>16</b>
<b>Spring</b>		
MAT 1224	Calculus II	4
WRC 1023	Freshman Composition II (core)	3
Life & Physical Sciences (core)		3
Select one of the following:		3-4
CS 1063	Introduction to Computer Programming I	
CS 1714	Computer Programming II	
CS 2073	Computer Programming with Engineering Applications	
<b>Credit Hours</b>		<b>13-14</b>
<b>Second Year</b>		
<b>Fall</b>		
MAT 2214	Calculus III	4
MAT 2233	Linear Algebra	3
Government-Political Science (core)		3
Life and Physical Sciences (core)		3
Free elective		3
<b>Credit Hours</b>		<b>16</b>
<b>Spring</b>		
MAT 3013	Foundations of Mathematics	3
STA 3003	Applied Statistics	3
Creative Arts (core)		3
Government-Political Science (core)		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Third Year</b>		
<b>Fall</b>		
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
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
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
<b>Credit Hours</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Fall</b>		
MAT 3633	Numerical Analysis	3
MAT 4213	Real Analysis I	3
MAT 4273	Topology	3
Free elective		3
Upper-division Free elective		3
<b>Credit Hours</b>		<b>15</b>

**Spring**

MAT 4223	Real Analysis II	3
Free elective <sup>1</sup>		2-3
Upper-division MAT or STA elective		3
American History (core)		3
Language Philosophy & Culture (core)		3
<b>Credit Hours</b>		<b>15-14</b>
<b>Total Credit Hours</b>		<b>120</b>

<sup>1</sup> Only 2 semester credit hours are needed if CS 1714 is taken.

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 Mathematics for Teaching

The Bachelor of Science (B.S.) degree in Mathematics for Teaching is designed for at the secondary or middle grades level as a certified mathematics teacher. This program integrates a specialized set of mathematics courses with courses from the B.S. in Mathematics, as well as the UTeachSA program, so that students can gain solid foundations in the mathematics and education fields to obtain the 7-12 Mathematics Teaching Certification.

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 majors in mathematics are required to complete all required and elective mathematics, computer science, and statistics courses with a grade of "C-" or better.

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

### Criminal Background Check

Teacher preparation programs at UTSA requires fieldwork in public schools. This requires that a student be able to pass a criminal background check conducted by the school districts. It is the responsibility of the student to determine if their criminal history background will present a problem before applying for admission to the teacher preparation program. Students with a problematic criminal history will encounter difficulty in completing any fieldwork requirements and may not be able to complete the program.

### Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. degree in Mathematics for Teaching 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
<b>Total Credit Hours</b>	<b>42</b>

### Gateway Courses

Students pursuing the B.S. degree in Mathematics for Teaching 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.

Code	Title	Credit Hours
MAT 1214	Calculus I	
MAT 1224	Calculus II	

### Mathematics for Teaching Degree Requirements

Code	Title	Credit Hours
<b>A. Required Mathematics courses</b>		
MAT 1214	Calculus I (Students not prepared to take MAT 1214 must take MAT 1093 Precalculus.)	4
MAT 1224	Calculus II	4
MAT 1313	Algebra and Number Systems	3
MAT 2214	Calculus III	4
MAT 2233	Linear Algebra	3
MAT 2313	Combinatorics and Probability	3
MAT 3013	Foundations of Mathematics	3
<b>B. Specialized Mathematics Courses</b>		
21 semester credit hours of specialized mathematics courses		
MAT 2113	Functions and Modeling	3
MAT 3103	Data Analysis and Interpretation	3
MAT 3123	Fundamentals of Geometry	3
MAT 3213	Foundations of Analysis	3
MAT 3233	Modern Algebra	3
MAT 4113	Computer Mathematical Topics	3
MAT 4303	Capstone Course for Mathematics	3
<b>C. Electives</b>		

6 semester credit hours of upper division coursework approved by the Undergraduate Advisor of Record

### D. Education Courses

30 semester credit hours of UTeachSA and education courses		
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 3203	Knowing and Learning in Mathematics and Science	3
UTE 3213	Classroom Interactions	3
UTE 4203	Project-Based Instruction	3
ESL 3083	Second Language Teaching and Learning for Grades 7-12	3
LTED 3773	Reading and Writing Across the Disciplines- Grades 7-12	3
SPE 3603	Introduction to Special Education	3
UTE 4646	Clinical Teaching	6
<b>Total Credit Hours</b>		<b>81</b>

**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 Mathematics for Teaching

This course sequence guide is designed to assist students in completing their UTSA undergraduate Mathematics for Teaching 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 for Teaching – Recommended Four-Year Academic Plan

First Year		Credit Hours
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1214	Calculus I (core and major)	4
MAT 1313	Algebra and Number Systems	3
UTE 1111	Introduction to STEM Teaching Step 1	1
WRC 1013	Freshman Composition I (core)	3
<b>Credit Hours</b>		<b>14</b>
<b>Spring</b>		
MAT 1224	Calculus II	4
UTE 1122	Introduction to STEM Teaching Step 2	2
WRC 1023	Freshman Composition II (core)	3
Life & Physical Sciences (core)		3



Language, Philosophy & Culture (core)	3
<b>Credit Hours</b>	<b>15</b>

**Summer**

American History (core)	3
Component Area Option (core)	3
Social & Behavioral Sciences (core)	3
<b>Credit Hours</b>	<b>9</b>

**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
<b>Credit Hours</b>		<b>16</b>

**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
<b>Credit Hours</b>		<b>15</b>

**Summer**

MAT 4113	Computer Mathematical Topics	3
Government-Political Science (core)		3
<b>Credit Hours</b>		<b>6</b>

**Third Year**

**Fall**

MAT 3123	Fundamentals of Geometry	3
MAT 2313	Combinatorics and Probability	3
UTE 3023	Perspectives on Science and Mathematics	3
American History (core)		3
<b>Credit Hours</b>		<b>12</b>

**Spring**

ESL 3083	Second Language Teaching and Learning for Grades 7-12	3
MAT 3213	Foundations of Analysis	3
MAT 3233	Modern Algebra	3
SPE 3603	Introduction to Special Education	3
Approved upper-division elective		3
<b>Credit Hours</b>		<b>15</b>

**Fourth Year**

**Fall**

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
Approved upper-division elective		3
<b>Credit Hours</b>		<b>12</b>

**Spring**

CI 4616	Clinical Teaching: Early Childhood-Grade 6	6
<b>Credit Hours</b>		<b>6</b>
<b>Total Credit Hours</b>		<b>120</b>

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 Mathematics of Data and Computing

The Bachelor of Science (B.S.) degree in Mathematics of Data and Computing is offered as a joint program with the Department of Computer Science. The Mathematics of Data and Computing degree prepares students with strong interests in both mathematics and computer science to work in areas involving data science, data analysis, or computational mathematics.

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 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, the computer science requirements, and the mathematics requirements.

### Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. degree in Mathematics of Data and Computing must fulfill University Core Curriculum requirements. If courses are taken to satisfy both degree requirements and the 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
<b>Total Credit Hours</b>	<b>42</b>

### Gateway Courses

Students pursuing the B.S. degree in Mathematics of Data and Computing 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.

Code	Title	Credit Hours
CS 1714	Computer Programming II	
CS 2124	Data Structures	
MAT 1214	Calculus I	
MAT 1224	Calculus II	

## Mathematics of Data and Computing Degree Requirements

All candidates for the B.S. degree in Mathematics of Data and Computing must complete the following 28 semester credit hours of required courses in computer science, 29 hours of required courses in mathematics (this includes the 3 semester credit hours of the Core Curriculum requirement in mathematics), and 18 hours of upper-division computer science or mathematics coursework.

Code	Title	Credit Hours
<b>A. Computer Science courses</b>		
CS 1011	Essence of Computer Science	1
CS 1083	Programming I for Computer Scientists	3
CS 1714	Computer Programming II	4
CS 2124	Data Structures	4
CS 3343	Analysis of Algorithms	3
CS 3424	Systems Programming	4
CS 3443	Application Programming	3
CS 3743	Database Systems	3
CS 3843	Computer Organization	3
<b>B. Mathematics courses</b>		
MAT 1313	Algebra and Number Systems	3
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
MAT 2233	Linear Algebra	3
MAT 2313	Combinatorics and Probability	3
MAT 3013	Foundations of Mathematics	3
MAT 3233	Modern Algebra	3
MAT 3313	Logic and Computability	3
MAT 4353	Mathematical Foundations of Cryptography	3
<b>C. Upper Division Computer Science/Mathematics Electives</b>		
Students must complete 18 hours of upper-division computer science or mathematics electives as approved by the Undergraduate Advisor of Record in either the Computer Science or Mathematics Department.		18
<b>D. Free Electives</b>		
Select 6 semester credit hours of electives		6
<b>Total Credit Hours</b>		<b>81</b>

## Course Sequence Guide for B.S. Degree in Mathematics of Data and Computing

This course sequence guide is designed to assist students in completing their UTSA undergraduate Mathematics of Data and Computing 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 of Data and Computing – Recommended Four-Year Academic Plan

First Year		Credit Hours
<b>Fall</b>		
AIS 1203	Academic Inquiry and Scholarship (core)	3
MAT 1214	Calculus I (core)	4
MAT 1313	Algebra and Number Systems	3
WRC 1013	Freshman Composition I (core)	3
CS 1083	Programming I for Computer Scientists	3
CS 1011	Essence of Computer Science	1
<b>Credit Hours</b>		<b>17</b>
<b>Spring</b>		
MAT 1224	Calculus II	4
WRC 1023	Freshman Composition II (core)	3
CS 1714	Computer Programming II	4
Life and Physical Sciences (core)		3
<b>Credit Hours</b>		<b>14</b>
<b>Second Year</b>		
<b>Fall</b>		
Language, Philosophy, and Culture (core)		3
MAT 2233	Linear Algebra	3
MAT 2313	Combinatorics and Probability	3
CS 2124	Data Structures	4
Life and Physical Sciences (core)		3
<b>Credit Hours</b>		<b>16</b>
<b>Spring</b>		
MAT 3013	Foundations of Mathematics	3
CS 3343	Analysis of Algorithms	3
CS 3424	Systems Programming	4
Government-Political Science (core)		3
American History (core)		3
<b>Credit Hours</b>		<b>16</b>
<b>Third Year</b>		
<b>Fall</b>		
MAT 3233	Modern Algebra	3
CS 3443	Application Programming	3
CS 3743	Database Systems	3
Government-Political Science (core)		3
Approved upper-division CS/MAT elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
MAT 3313	Logic and Computability	3
CS 3843	Computer Organization	3
Creative Arts (core)		3

Approved upper-division CS/MAT elective		3
Component area option (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Fall</b>		
Approved upper-division CS/MAT elective		3
Approved upper-division CS/MAT elective		3
Free Elective		3
American History (core)		3
Social and Behavioral Science (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
MAT 4353	Mathematical Foundations of Cryptography	3
Approved upper-division CS/MAT elective		3
Approved upper-division CS/MAT elective		3
Free Elective		3
<b>Credit Hours</b>		<b>12</b>
<b>Total Credit Hours</b>		<b>120</b>

## 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.

Code	Title	Credit Hours
<b>A. Required courses</b>		
MAT 1214	Calculus I	4
MAT 1224	Calculus II	4
MAT 2214	Calculus III <sup>1</sup>	3-4
or CS 3333	Mathematical Foundations of Computer Science	
MAT 2233	Linear Algebra	3
MAT 3613	Differential Equations I <sup>2</sup>	3
<b>B. Approved upper-division mathematics electives</b>		
Select a minimum of 6 semester credit hours of approved upper-division mathematics electives		6
<b>Total Credit Hours</b>		<b>23-24</b>

<sup>1</sup> For Computer Science majors, substitute CS 3333 Mathematical Foundations of Computer Science.

<sup>2</sup> 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 Molecular Microbiology and Immunology

## Mission Statement

The mission of the department is to conduct outstanding research and provide exceptional educational experiences in a collegial, diverse, and inclusive environment. At the same time, we transform academic experiences from classroom to careers by merging scholarly activities with practical skills in translational science, vaccine development, microbial pathogenesis, and immunology.

The Department of Molecular Microbiology and Immunology holds to the core values of integrity in academic studies and research; respect, diversity, and inclusion; responsibility and accountability; and fostering a culture of community and communication.

## General Information

The Department of Molecular Microbiology and Immunology connects outstanding research programs to the academic mission of preparing students for professional careers in microbiology and immunology, medical and public health service fields, education, research, and industry. The Department of Molecular Microbiology and Immunology is committed to providing students with foundations to link their educational experience to basic and translational biomedical research activities built by department faculty with expertise in the areas of vaccine development, microbial pathogenesis, and mechanisms of immune dysregulation in health and disease.

## Degrees

The Department of Molecular Microbiology and Immunology offers a Bachelor of Science (B.S.) degree in Microbiology and Immunology. The program of study is structured around a comprehensive core curriculum that includes upper-division level course work designed to achieve a deeper knowledge, understanding, and experience in several specialized areas of microbiology and immunology.

## Health Careers Pathways

The Department of Molecular Microbiology and Immunology offers programs that supports students interested in pursuing professional or graduate programs in health-related professions (e.g., the Medical Laboratory Science Early Acceptance Program-MSLEAP, a partnership program between UTSA and UT-Health San Antonio that allows undergraduate students to earn a B.S. degree from UTSA and a Master of Science in Medical Laboratory Sciences from UT-Health, and medical, pharmacy, and veterinarian among others). See the Degrees (p. 329) page for more information. Students can also visit the UTSA Health Professions office (<https://www.utsa.edu/healthprofessions/>) for more information.

## Sophomore Biology Research Initiative (SBRI)

The Sophomore Biology Research Initiative offers eligible second-year students to engage in authentic research with faculty and graduate students while earning academic credit. The opportunity to be part of the SBRI is limited, students should register early. See the Degrees (p. 329) page for more information about SBRI.

## Bachelor of Science Degree in Microbiology and Immunology

The Bachelor of Science (B.S.) degree in Microbiology and Immunology is designed to prepare students for careers in the medical/health professions and service fields, research, education, and industry. The minimum number of semester credit hours required for degree, including the Core Curriculum requirements, is 120. Thirty-nine (39) of the total semester credit hours required for the degree must be at the upper-division level (3000-4000). All major and support work courses and the required prerequisites must be completed with a grade of "C-" or better.

Due to extensive curriculum overlap, 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.

### Educational Objectives

Graduates with a B.S. in Microbiology and Immunology will be able to:

- Understand the foundations of host-pathogen interactions and immune-related diseases.
- Understand how to relate core methods of microbiology and immunology into the science of vaccine development, microbial pathogenesis, and human disease.
- Apply microbiology and immunology knowledge to solve current health problems.
- Effectively communicate microbiology- and immunology-related methods and results in written and oral form.

### Sophomore Biology Research Initiative

In the sophomore year, students can either take the required Molecular Genetics Laboratory (BIO 2362) and Molecular Biochemistry Laboratory (BIO 3362) or participate in the Sophomore Biology Research Initiative (SBRI). Through SBRI, students working in teams will conduct their own research projects on a specific biological problem over two semesters. Several different research topics will be available to choose from. There will be approximately two hours of lecture/lab meeting and six hours of lab work per week. Students will receive credit for BIO 2362 and BIO 3362 and be concurrently enrolled in three semester credit hours of Independent Study to reflect the additional hours required to complete their research. Students will present their final data in poster format at an organized symposium.

### 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 1203, BIO 1223, PHY 1943 or PHY 1963.

### 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.

Code	Title	Credit Hours
BIO 1203	Biosciences I for Science Majors	3
BIO 1223	Biosciences II for Science Majors	3
BIO 2313	Genetics	

### Degree Requirements

Code	Title	Credit Hours
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#### A. Required major courses

1. Required biology courses (27 credit hours):		
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors	4
BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors	4
BIO 2313	Genetics	3
BIO 3513	Biochemistry	3
NDRB 3813	Cell Biology	3
MMI 3713 & MMI 3722	Microbiology and Microbiology Laboratory	5
MMI 4743 & MMI 4752	Immunology and Immunology Laboratory	5
2. One of the following laboratory options (4-7 credit hours):		4-7
Option 1 Standard Laboratory Classes		
BIO 2362	Molecular Genetics Laboratory	
BIO 3362	Molecular Biochemistry Laboratory	
Option 2 Sophomore Biology Research Initiative		
BIO 2362 & BIO 4911	Molecular Genetics Laboratory and Independent Study	
BIO 3362 & BIO 4912	Molecular Biochemistry Laboratory and Independent Study	
Note: In Laboratory Option 1, students will learn laboratory techniques in standard class setting. In Laboratory Option 2, students will learn laboratory techniques while conducting research on a specific biological problem over two semesters.		
3. In combination, 5 courses from the following lists (15 credit hours)		15
3a. Complete two to four of the following courses:		
MMI 3743	Bacteriology	
MMI 4483	Medical Mycology	
MMI 4723	Virology	
MMI 4763	Parasitology	
3b. Complete one to three of the following courses:		
MMI 3013	Introduction to Clinical Medicine and Pathology	
ES 3103	Environmental Microbiology	
MMI 3323	Evolution	

MMI 4473	Advanced Clinical Medicine and Pathology
MMI 4773	Microbial Ecology and Metagenomics
MMI 4783	Microbial Genomes and Virulence
MMI 4923	Laboratory Research
MMI 4953	Special Studies

**B. Required support courses**

The support courses listed below are mandatory prerequisites for various Microbiology and Immunology and/or Biology courses. 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 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 credit hours):**

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 3643 & CHE 3652	Organic Chemistry II and Organic Chemistry II Laboratory	5

**2. Required mathematics and statistics courses (6 credits):**

MAT 1193	Calculus for the Biosciences	3
STA 1403	Probability and Statistics for the Biosciences	3

**3. Required physics courses; select one option (8 credits):** 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	

**C. Free electives (6-9 credit hours)** 6-9

Select 6-9 semester credit hours of free electives, depending on the Laboratory Option chosen under section A2, to complete 120 hours. For students who selected Laboratory Option 1, at least 1 semester credit hour must be at the upper-division level to reach the minimum requirement of 39 upper-division semester credit hours.

**Total Credit Hours** 87

## Course Sequence Guide for B.S. Degree in Microbiology and Immunology

### 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 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors (core and major)	4
CHE 1103 & CHE 1121	General Chemistry I and General Chemistry I Laboratory	4
WRC 1013	Freshman Composition I (core)	3

**Credit Hours** 14

**Spring**

BIO 1223 & BIO 1221	Biosciences II for Science Majors and Biosciences II Laboratory for Science Majors (core and major)	4
CHE 1113 & CHE 1131	General Chemistry II and General Chemistry II Laboratory	4
MAT 1193	Calculus for the Biosciences (core and major)	3
WRC 1023	Freshman Composition II (core)	3

**Credit Hours** 14

**Second Year**

**Fall**

BIO 2313	Genetics	3
Select one of the following Laboratory Options:		2-3

Option 1 Standard Laboratory Class

BIO 2362	Molecular Genetics Laboratory	
Or		

Option 2 Sophomore Biology Research Initiative

BIO 2362 & BIO 4911	Molecular Genetics Laboratory and Independent Study	
CHE 2603 & CHE 2612	Organic Chemistry I and Organic Chemistry I Laboratory	5

Select one of the following: 4

PHY 1603 & PHY 1611 Algebra-based Physics I and Algebra-based Physics I Laboratory

Or

PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory (core)	
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**Credit Hours** 14-15

**Spring**

Select one of the following Laboratory Options: 2-4

Option 1 Standard Laboratory Class

BIO 3362	Molecular Biochemistry Laboratory	
Or		

Option 2 Sophomore Biology Research Initiative

BIO 3362 & BIO 4912	Molecular Biochemistry Laboratory and Independent Study	
CHE 3643 & CHE 3652	Organic Chemistry II and Organic Chemistry II Laboratory	5

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



Or		
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory (core and major)	
<b>Credit Hours</b>		<b>14-16</b>
<b>Third Year</b>		
<b>Fall</b>		
BIO 3513	Biochemistry	3
MMI 3713	Microbiology	3
MMI 3722	Microbiology Laboratory	2
Upper-Division Microbiology and Immunology elective		3
American History (core)		3
Social & Behavioral Sciences (core)		3
<b>Credit Hours</b>		<b>17</b>
<b>Spring</b>		
NDRB 3813	Cell Biology	3
MMI 4743	Immunology	3
MMI 4752	Immunology Laboratory	2
American History (core)		3
Creative Arts (core)		3
Upper-division free elective for those choosing Laboratory Option 1.		3-0
<b>Credit Hours</b>		<b>17</b>
<b>Fourth Year</b>		
<b>Fall</b>		
Upper-division Microbiology and Immunology elective		3
Upper-division Microbiology and Immunology elective		3
Government-Political Science (core)		3
Language, Philosophy, & Culture (core)		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
Upper-division Microbiology and Immunology elective		3
Upper-division Microbiology and Immunology elective		3
Government-Political Science (core)		3
Component Area Option (core)		3
Free elective (to meet 120 hour minimum)		0-3
<b>Credit Hours</b>		<b>15-12</b>
<b>Total Credit Hours</b>		<b>120</b>

Note: Some courses are only offered once a year: Fall or Spring. Check with the Department of Molecular Microbiology and Immunology for scheduling of courses.

## Department of Neuroscience, Developmental and Regenerative Biology

### Mission Statement

The mission of the Department of Neuroscience, Developmental and Regenerative Biology is to conduct high impact, internationally recognized research and to educate and train the next generation of leaders in biological sciences. As a department of neuroscientists, and developmental and regenerative biologists, we focus on understanding organismal, tissue and cellular function from molecules to behavior in health and disease.

### General Information

The Department of Neuroscience, Developmental and Regenerative Biology study key questions relating to how the brain works in normal and disease states (neuroscience) and how cells and tissues are formed, maintained, and repaired (developmental and regenerative). Collectively and collaboratively, we seek to learn, investigate, and communicate knowledge in these fields. Our diverse and recognized faculty and state-of-the-art laboratory facilities provide students with opportunities for personal interaction, mentorship, and undergraduate research projects.

### Neuroscience

**Neuroscience** research at UTSA is interdisciplinary and explores neural function from molecules to cells to neural networks to behavior. Students will find a highly collaborative atmosphere across the department. Our neuroscience laboratories employ behavioral, cellular, computational, developmental, and molecular approaches to answer questions associated with neural function. Many of our faculty are leading investigators attempting to understand debilitating brain diseases, including Alzheimer's Disease, Parkinson's Disease, and Epilepsy. Students also can participate in various neuroscience-related activities supported by the UTSA Neurosciences Institute and UTSA's Brain Health Consortium, including weekly seminar and special seminar programs. Undergraduate study in the neurosciences is directly supported through a Bachelor of Science (B.S.) in Neuroscience degree and a Minor in Neuroscience.

### Developmental and Regenerative Biology

Faculty and students in the areas of **Developmental and Regenerative Biology** study a wide range of questions relating to stem cells, cancer and cell cycle regulation, tissue regeneration, epigenetic regulation of cell fate and function, gene expression, fertility, and "Disease-in-a-Dish" models, including "organoid" systems. State-of-the-art technologies include genomics, epigenomics, proteomics, cell sorting, and cell imaging. A wide range of lecture courses are available to undergraduate students in Developmental and Regenerative Biology, along with opportunities for seminar classes, independent study, and directed research. Many of our faculty and students are associated with UTSA's Institute of Regenerative Medicine, a joint collaborative initiative between UTSA's Colleges of Engineering and Sciences, and multiple research institutions in San Antonio. Undergraduate students with interests in Developmental and Regenerative Biology are encouraged to attend a weekly Cell and

Molecular Biology seminar series that frequently highlights research in this area.

## Degrees

Neuroscience is the interdisciplinary study of the nervous system across various levels – from molecules, to cells, through circuits, and behavior. Neuroscience represents a unique academic field, requiring students to understand and utilize a diverse knowledge base across multiple disciplines. The Department of Neuroscience, Developmental and Regenerative Biology offers a B.S. degree in Neuroscience and a Minor in Neuroscience for an interdisciplinary undergraduate experience for students interested in how the brain works.

The B.S. in Neuroscience curriculum is conceptually structured around i) an interdisciplinary foundation in the biological, psychological, and computational sciences, ii) a broad scope of electives for students to individualize their degree or pursue one of three neuroscience concentrations (Behavioral, Molecular, and Pre-medical), and iii) opportunities for research/practical experience. At its foundation, all students will take an introductory course in Neuroscience (Introduction to Neuroscience), Biology (Biosciences I), and Psychology (Introduction to Psychology). In subsequent years all students will take an upper-division class and laboratory in Neurobiology. Their first two years will also include a strong set of required courses in the sciences, math, and statistics. The remaining two years of the program is designed for the student to explore neuroscience across a wide range of disciplines, along with free electives, allowing for maximum flexibility in their chosen program of study. The B.S. in Neuroscience degree prepares students for careers in neuroscience-related fields, graduate-level study in masters and doctoral-level programs, and medical and dental school. Because of the broad training afforded by this program, graduates may find employment in many industries, including companies or government agencies associated with public health, biomedical engineering, education, psychology, and research.

The Minor in Neuroscience provides formal recognition for students who have focused a significant portion of their academic work in the interdisciplinary area of neuroscience. The minor can accommodate majors from all other departments.

## Studies in Developmental and Regenerative Biology

The department offers several classes with a focus on biological principles of mammalian/human development, maintenance, and repair, from fertilized egg throughout adulthood. Students wishing to earn an undergraduate degree specializing in these fundamental questions can seek a B.S. in Biology with a Concentration in Cell and Molecular Biology from the Department of Integrative Biology, including courses in this area within the concentration's program of study.

## Student Success

The Department and Faculty supporting the B.S. in Neuroscience and Minor in Neuroscience, and B.S. in Biology with a Concentration in Cell and Molecular Biology, are committed to championing and developing the next generation of Neuroscience, Developmental and Regenerative Biology students at UTSA through multiple avenues of engagement and academic support. In addition to an innovative academic program, opportunities for participation in cutting-edge research, a vibrant "student-life", and strong priorities of inclusion will foster student accomplishment within prestigious programs of study.

## Health Careers Pathways

The Department of Neuroscience, Developmental and Regenerative Biology offers programs that supports students interested in pursuing professional or graduate programs (e.g., medical, dental, pharmacy and veterinarian) in health-related professions. See the Degrees (p. 332) page for more information. Students can also visit the UTSA Health Professions office (<https://www.utsa.edu/healthprofessions/>) for more information.

## Sophomore Biology Research Initiative (SBRI)

The Sophomore Biology Research Initiative offers eligible second-year students to engage in authentic research with faculty and graduate students while earning academic credit. The opportunity to be part of the SBRI is limited, students should register early. See the Degrees (p. 332) page for more information about SBRI.

- 
- B.S. degree in Neuroscience (p. 332)
    - Concentration in Behavioral Neuroscience (p. 334)
    - Concentration in Molecular Neuroscience (p. 334)
    - Concentration in Pre-Medical Neuroscience (p. 334)

## Bachelor of Science Degree in Neuroscience

The B.S. in Neuroscience is an interdisciplinary degree that will provide students the opportunity to pursue an integrated course of study in Neuroscience. Neuroscience represents a unique academic field in that it requires students to understand and utilize a set of diverse knowledge from multiple disciplines. Neuroscience impacts almost all areas of science and business, and this degree is intended to prepare students for a wide range of careers in this area.

A minimum number of 120 semester credit hours is required for the B.S. in Neuroscience, including 42 hours of Core Curriculum requirements. 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 required prerequisites, must be completed with a grade of "C-" or better.

## Program Outcomes

Graduates of the B.S. in Neuroscience program will be able to:

- Communicate across the biological, psychological, and computational sciences.
- Identify and explain fundamental concepts in molecular neuroscience, cellular neurophysiology and signaling, neuroanatomy, neural information processing, and behavior.
- Develop and conduct appropriate experimentation, analyze and interpret data, and use judgment to draw conclusions.

## Sophomore Biology Research Initiative

Students may apply to participate in the Sophomore Biology Research Initiative. After acceptance, students will take NDRB 2953 Special Topics in two consecutive semesters during their sophomore year after completing their first 30 hours. Students should apply after their first semester. A total of six hours will be completed. Several different research topics will be available to choose from. There will be approximately two hours of lecture/lab meeting and six hours of lab work per week. Students will present their final data in poster format at an

organized symposium. The opportunity to be part of the SBRI is limited, so students should register early.

## Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. degree in Neuroscience 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.
- PSY 1013 may be used to satisfy the core requirement in Social and Behavioral Sciences as well as a major requirement.
- BIO 1203 & PHY 1943 may be used to satisfy the core requirement in Life and Physical Sciences, as well as major requirements.
- 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
<b>Total Credit Hours</b>	<b>42</b>

## Degree Requirements

Code	Title	Credit Hours
<b>A. Foundation Courses</b>		
1. Required Biology Courses		
BIO 1203	Biosciences I for Science Majors	3
BIO 1201	Biosciences I Laboratory for Science Majors	1
BIO 2313	Genetics	3
2. Neuroscience required courses		
NDRB 2113	Introduction to Neuroscience	3
NDRB 3433	Neurobiology	3
NDRB 3442	Neurobiology Laboratory	2
PSY 1013	Introduction to Psychology	3
3. Math requirement		
MAT 1193	Calculus for the Biosciences	3
4. Data Analysis - pick one of the following		
CS 1063	Introduction to Computer Programming I	3
CS 1173	Data Analysis and Visualization	3
DS 4003	Introduction to Data Science	3
DS 4013	Programming for Data Science	3

5. Chemistry Requirements		
CHE 1103	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory	1
CHE 1113	General Chemistry II	3
CHE 1131	General Chemistry II Laboratory	1
6. Statistics		
STA 1403	Probability and Statistics for the Biosciences	3
	or PSY 2073	Statistics for Psychology
7. Physics. Select from one of the following options:		
Option 1		
PHY 1603	Algebra-based Physics I	
PHY 1611	Algebra-based Physics I Laboratory	
Option 2		
PHY 1943	Physics for Scientists and Engineers I	
PHY 1951	Physics for Scientists and Engineers I Laboratory	

### B. Support Courses

1. Neuroscience. Select eight of the following:			24
NDRB 3213	Animal Behavior		
NDRB 3453	Neuroscience and Our Future		
NDRB 3463	Brain Diseases		
NDRB 3623	Neuropsychopharmacology		
NDRB 4483	Developmental Neuroscience: From Zygote to Brain Circuits		
NDRB 4583	Emergent Properties of Neural Circuits		
NDRB 4683	Neural Data Science		
NDRB 4783	Computational Neuroscience		
NDRB 4813	Brain and Behavior		
NDRB 4823	Cognitive Neuroscience		
	or PSY 4343	Cognitive Neuroscience	
NDRB 4913	Independent Study		
NDRB 4923	Laboratory Research		
NDRB 4953	Special Studies		
2. Additional Electives. Select four of the following:			12
Courses not taken in B.1 (above) can be taken as Additional Electives			
NDRB 3813	Cell Biology		
BIO 3513	Biochemistry		
	or CHE 3313	Biochemistry I	
NDRB 3913	Molecular Biology		
PSY 2503	Developmental Psychology		
PSY 2513	Abnormal Psychology		
PSY 2563	Cognitive Psychology		
PSY 3153	Sensation and Perception		
PSY 3403	Experimental Psychology		
PSY 4253	Psychology of Health		
STA 3003	Applied Statistics		
STA 3013	Multivariate Analysis for the Life and Social Sciences		
PHI 3033	Philosophy of Science		
PHI 3083	Philosophy of Mind		
PHI 3203	Biomedical Ethics		

### C. Free Electives

Select 12-18 semester credit hours of free electives, depending on the student's choice of Core Courses, to complete 120 hours, including a minimum requirement of 39 upper-division semester credit hours.

**Total Credit Hours 87-93**

### Concentrations

The Department of Neuroscience, Developmental and Regenerative Biology, within the B.S. in Neuroscience degree, offers three areas of concentration. To declare a concentration or obtain advice, students should consult an undergraduate academic advisor in the Life and Health Sciences Advising Center. To receive credit for a concentration, students must successfully complete all requirements for the B.S. degree, along with the requirements for the respective concentration. Students who do not successfully complete all courses of a given concentration area will receive a standard B.S. degree in Neuroscience.

#### Concentration in Behavioral Neuroscience

The coursework within the Behavioral Neuroscience concentration must be completed with a minimum cumulative grade point average of 3.0 or better. Students are also encouraged to enroll in NDRB 4923 Laboratory Research as part of their program of study.

Code	Title	Credit Hours
Select four of the following:		
NDRB 3213	Animal Behavior	
NDRB 4823	Cognitive Neuroscience	
NDRB 4923	Laboratory Research	
PSY 3153	Sensation and Perception	
PSY 3403	Experimental Psychology	
PSY 2563	Cognitive Psychology	
<b>Total Credit Hours</b>		<b>12</b>

#### Concentration in Molecular Neuroscience

The coursework within the Molecular Neuroscience concentration must be completed with a minimum cumulative grade point average of 3.0 or better. Students are also encouraged to enroll in NDRB 4923 Laboratory Research as part of their program of study.

Code	Title	Credit Hours
NDRB 3913	Molecular Biology	3
Select three of the following:		
NDRB 3813	Cell Biology	
NDRB 4143	Developmental Biology	
NDRB 4453	Endocrinology	
NDRB 4923	Laboratory Research	
BIO 3413	General Physiology	
BIO 3513	Biochemistry	
<b>Total Credit Hours</b>		<b>12</b>

#### Concentration in Pre-Medical Neuroscience

The B.S. degree in Neuroscience with a concentration in Pre-Medical Neuroscience is designed to prepare students for professional programs in medicine. This concentration has a recommended curriculum that is designed to meet the requirements for entry medical school and to prepare students for the MCAT examination. For completion of the Pre-Medical Neuroscience Concentration students must have both an

overall math/science 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 Neuroscience must complete the following:

Code	Title	Credit Hours
CHE 2603	Organic Chemistry I	3
CHE 2612	Organic Chemistry I Laboratory	2
CHE 3643	Organic Chemistry II	3
Biochemistry - Select one of the following:		3
BIO 3513	Biochemistry	
CHE 3313	Biochemistry I	
Select one of the two Physics options:		4
Option 1		
PHY 1623	Algebra-based Physics II	
PHY 1631	Algebra-based Physics II Laboratory	
Option 2		
PHY 1963	Physics for Scientists and Engineers II	
PHY 1971	Physics for Scientists and Engineers II Laboratory	
<b>Total Credit Hours</b>		<b>15</b>

### Course Sequence Guide for the B.S. in Neuroscience Degree

First Year		Credit Hours
<b>Fall</b>		
AIS 1263	AIS: Life and Health Sciences	3
BIO 1203 & BIO 1201	Biosciences I for Science Majors and Biosciences I Laboratory for Science Majors (core and major)	4
WRC 1013	Freshman Composition I (core)	3
MAT 1193	Calculus for the Biosciences	3
<b>Credit Hours</b>		<b>13</b>
<b>Spring</b>		
PSY 1013	Introduction to Psychology (core and major)	3
NDRB 2113	Introduction to Neuroscience	3
CHE 1103	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory	1
WRC 1023	Freshman Composition II (core)	3
STA 1403	Probability and Statistics for the Biosciences	3
<b>Credit Hours</b>		<b>16</b>
<b>Second Year</b>		
<b>Fall</b>		
BIO 2313	Genetics	3
PHY 1943	Physics for Scientists and Engineers I (core)	3
PHY 1951	Physics for Scientists and Engineers I Laboratory	1
POL 1013	Introduction to American Politics (core)	3
CHE 1113	General Chemistry II	3

CHE 1131	General Chemistry II Laboratory	1
<b>Credit Hours</b>		<b>14</b>
<b>Spring</b>		
CS 1173	Data Analysis and Visualization	3
NDRB 3433	Neurobiology	3
NDRB 3442	Neurobiology Laboratory	2
American History (core)		3
Language, Philosophy & Culture (core)		3
Additional Neuroscience Elective (B.2)		3
<b>Credit Hours</b>		<b>17</b>
<b>Third Year</b>		
<b>Fall</b>		
POL 1133	Texas Politics and Society (core)	3
Neuroscience Support Course (B.1)		3
Neuroscience Support Course (B.1)		3
Additional Neuroscience Elective (B.2)		3
Elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
American History (core)		3
Neuroscience Support Course (B.1)		3
Neuroscience Support Course (B.1)		3
Additional Neuroscience Elective (B.2)		3
Elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Fall</b>		
Creative Arts (core)		3
Neuroscience Support Course (B.1)		3
Neuroscience Support Course (B.1)		3
Additional Neuroscience Elective (B.2)		3
Elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
Neuroscience Support Course (B.1)		3
Neuroscience Support Course (B.1)		3
Elective		3
Elective		3
Elective		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120</b>

## Minor in Neuroscience

The Minor in Neuroscience is open to all majors in the University. To declare a Minor in Neuroscience or obtain advice, students should consult with their academic advisor. All students pursuing the minor must complete a minimum of 18 semester credit hours of neuroscience courses. It should be noted that students seeking a minor must also complete applicable support coursework in biology, chemistry, computer science, physics, mathematics and statistics, as needed to fulfill the normal prerequisites for any course listed below. All neuroscience 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.

Code	Title	Credit Hours
<b>A. Required Courses</b>		
		<b>12</b>
BIO 1203	Biosciences I for Science Majors	
BIO 1201	Biosciences I Laboratory for Science Majors	
NDRB 2113	Introduction to Neuroscience	
NDRB 3433	Neurobiology	
NDRB 3442	Neurobiology Laboratory	
<b>B. Organized Neuroscience Courses (Select 6 credit hours from the following)</b>		
		<b>6</b>
NDRB 3213	Animal Behavior	
NDRB 3453	Neuroscience and Our Future	
NDRB 3463	Brain Diseases	
NDRB 3623	Neuropsychopharmacology	
NDRB 4483	Developmental Neuroscience: From Zygote to Brain Circuits	
NDRB 4583	Emergent Properties of Neural Circuits	
NDRB 4683	Neural Data Science	
NDRB 4783	Computational Neuroscience	
NDRB 4823	Cognitive Neuroscience	
NDRB 4923	Laboratory Research	
<b>Total Credit Hours</b>		<b>18</b>

## Department of Physics and Astronomy

### Mission Statement

The mission of the Physics and Astronomy department is to provide science and engineering students at UTSA with a solid background in physics, problem-solving skills, and equip students with invaluable research experience.

### General Information

The Department of Physics and Astronomy at The University of Texas at San Antonio is a comprehensive academic unit that offers Bachelor of Arts, Bachelor of Science, Master of Science, and Doctoral degrees.

Our faculty members conduct research in a variety of areas including Astrophysics and Cosmology; Biophysics; Computational Physics; Experimental and Theoretical Condensed Matter Physics; Materials Science; and Nanotechnology and Ultramicroscopy. Students may choose to train in semiconductor technology, solid-state physics, computer visualization, lasers, biophotonics, and theoretical physics. We also offer courses in the exciting areas of astrophysics, cosmology, and relativity for those interested in that frontier.

We strive to provide UTSA science and engineering students with a solid background in physics and problem-solving skills, critical to their future work, regardless of the nature of that work. We also aim to provide students with as much research experience as possible, to better prepare them for their future careers. The jobs available to physics graduates are more varied than what most science majors can find. They range from



pure science, to engineering, to finance, to public policy, and, of course, to education.

The academic environment in the Department fosters extensive mentoring of the students, individual contact with instructors, and advanced teaching methodologies. We also offer great opportunities for continuous undergraduate research. Many of our undergraduate students have publications in peer-reviewed journals as well as presentations at regional or national conferences. As a result, our students have been admitted to some of the top graduate programs in the U.S. as well as found employment in the private sector as innovative teachers in public and private schools.

Central goals of the Physics and Astronomy Department are to:

- Become one of the outstanding programs of its kind in the country, in which teaching and research are carefully interwoven for the benefit of the students and the community.
- Encourage groups underrepresented in physics to consider physics or astronomy as their primary career path.
- Be responsive to the needs, both educational and research-related, indispensable in any career but particularly important in science.

## Degrees

The Department of Physics and Astronomy offers a Bachelor of Science (B.S.) degree in Physics, a Bachelor of Arts (B.A.) degree in Physics (with the option to pursue a Concentration in 6-12 Physical Science Teacher Certification). The department also offers a Minor in Astronomy/Astrophysics and a Minor in Physics.

The B.S. offers a complete curriculum of advanced undergraduate courses which includes two semesters of Electricity and Magnetism, Quantum Mechanics and Mathematical Physics, as well as rigorous introduction to Classical Mechanics and Statistical Thermodynamics. The Bachelor of Science in Physics provides opportunities for preparation for careers in industry and governmental agencies and for graduate study in physics or in college- and university-level teaching and research. Nationally, about half of all B.S. physics students go on to graduate school, either in physics, engineering or another professional area.

The B.A. is intended for students seeking a foundation in physics as a liberal arts degree, but who typically do not intend to become physicists. The flexibility in this degree program allows students to gain significant educational breadth in other disciplines. The B.A. also offers the opportunity for students to pursue teacher certification through completing UTeachSA requirements.

- B.S. Degree in Physics (p. 336)
- B.A. Degree in Physics (p. 338)
- B.A. Degree in Physics with a Concentration in Grades 6-12 Physical Science Teacher Certification (p. 338)

## 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
<b>Total Credit Hours</b>	<b>42</b>

## 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.

Code	Title	Credit Hours
PHY 2103 & PHY 2111	Modern Physics and Modern Physics Laboratory	
PHY 2823	Mathematical Physics I	
PHY 3203	Classical Mechanics I	

## Degree Requirements

Code	Title	Credit Hours
<b>A. Physics and Astronomy courses</b>		
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	
AST 3023	Introduction to Astrophysics	
PHY 3313	Materials Physics	
PHY 3453	Lasers: Theory and Applications	
PHY 3603	Cosmology	
PHY 4013	Relativity: Special and General	
PHY 4623	Nanotechnology	
PHY 4833	Molecular Biophysics	
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 or CS 1173 or CS 2073	Introduction to Computer Programming I Data Analysis and Visualization Computer Programming with Engineering Applications	3
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 course sequence is only 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	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory <sup>1</sup>	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 (core)	3
<b>Credit Hours</b>		<b>17</b>

### Spring

CHE 1113	General Chemistry II	3
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
WRC 1023	Freshman Composition II (core)	3
<b>Credit Hours</b>		<b>14</b>

### Second Year

#### Fall

MAT 2214	Calculus III	4
MAT 2233	Linear Algebra	3
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory (core and major)	4
POL 1013	Introduction to American Politics (core)	3
<b>Credit Hours</b>		<b>14</b>

#### 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
<b>Credit Hours</b>		<b>16</b>

### Third Year

#### Fall

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
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
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
<b>Credit Hours</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Fall</b>		
PHY 4423	Quantum Mechanics II	3
College of Sciences elective		3
Upper-division AST or PHY elective <sup>2</sup>		3
Upper-division AST or PHY elective <sup>2</sup>		3
American History (core)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
PHY 4983	Unifying Concepts in Physics	3
College of Sciences elective		2
Upper-division AST or PHY elective <sup>2</sup>		3
Creative Arts (core)		3
Component Area Option (core)		3
<b>Credit Hours</b>		<b>14</b>
<b>Total Credit Hours</b>		<b>120</b>

<sup>1</sup> This laboratory course includes a lecture component as indicated on the University Schedule of Classes.

<sup>2</sup> 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
<b>Total Credit Hours</b>	<b>42</b>

## 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.

Code	Title	Credit Hours
PHY 2103 & PHY 2111	Modern Physics and Modern Physics Laboratory	
PHY 2823	Mathematical Physics I	
PHY 3203	Classical Mechanics I	

## Degree Requirements

Code	Title	Credit Hours
<b>A. Physics and Astronomy courses</b>		
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:		6
AST 3013	Fundamentals of Astronomy	
AST 3023	Introduction to Astrophysics	
PHY 3313	Materials Physics	
PHY 3443	Modern Optics	
PHY 3603	Cosmology	
PHY 4013	Relativity: Special and General	
PHY 4263	Quantum Mechanics I	

**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
<b>Total Credit Hours</b>		<b>87</b>

**Concentrations**

The B.A. degree in Physics offers one concentration for students interested in becoming 6-12th grade Physical Sciences teacher offered through the UTeachSA program.

**Concentration in Grades 6–12 Physical Science Teacher Certification**

The B.A. degree in Physics with a Concentration in Grades 7-12 Physical Science Teacher Certification is designed to prepare students for professional careers in teaching Physical Science, including physics and chemistry, at the secondary level. The program of study is structured around a comprehensive Physics curriculum and state requirements for grades 6–12 physical science teaching certification. Students cannot receive a B.A. degree with Teacher Certification without completing the teacher certification coursework. A student who does not complete the Physical Science teacher certification must transfer to the general B.A. or B.S. in Physics program.

The coursework within the Concentration in Grades 6–12 Physical Science Teacher Certification must be completed with a minimum cumulative grade point average of 2.5 or better.

**Criminal Background Check**

Teacher preparation programs at UTSA requires fieldwork in public schools. This requires that a student be able to pass a criminal background check conducted by the school districts. It is the responsibility of the student to determine if their criminal history background will present a problem before applying for admission to the teacher preparation program. Students with a problematic criminal history will encounter difficulty in completing any fieldwork requirements and may not be able to complete the program.

All candidates for the Concentration in Grades 6–12 Physical Teacher Certification must complete the following:

Code	Title	Credit Hours
ESL 3083	Second Language Teaching and Learning for Grades 7-12	3
LTED 3773	Reading and Writing Across the Disciplines- Grades 7–12	3
SPE 3603	Introduction to Special Education	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 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
<b>Total Credit Hours</b>		<b>30</b>

**Course Sequence Guides for B.A. Degree in Physics**

This course sequence guide is designed to assist students in completing their UTSA undergraduate Physics degree requirements. *This course sequence 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		Credit Hours
Fall		
AIS 1203	Academic Inquiry and Scholarship (core)	3
CHE 1103	General Chemistry I	3
CHE 1121	General Chemistry I Laboratory <sup>1</sup>	1
CS 1063	Introduction to Computer Programming I	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 (core)	3
<b>Credit Hours</b>		<b>17</b>

Spring		Credit Hours
CHE 1113	General Chemistry II	3
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
WRC 1023	Freshman Composition II (core)	3

College of Sciences elective <sup>2</sup>	2
<b>Credit Hours</b>	<b>16</b>
<b>Second Year</b>	
<b>Fall</b>	
MAT 2214	Calculus III 4
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory (core and major) 4
Social & Behavioral Sciences (core)	3
American History (core)	3
<b>Credit Hours</b>	<b>14</b>
<b>Spring</b>	
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
<b>Credit Hours</b>	<b>16</b>
<b>Third Year</b>	
<b>Fall</b>	
PHY 3293	Thermal Physics 3
PHY 3423	Electricity and Magnetism 3
College of Sciences elective <sup>2</sup>	3
College of Sciences elective <sup>2</sup>	3
Language, Philosophy & Culture (core)	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
PHY 3343	Physics Research Laboratory 3
POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America 3
College of Sciences elective <sup>2</sup>	3
College of Sciences elective <sup>2</sup>	3
<b>Credit Hours</b>	<b>12</b>
<b>Fourth Year</b>	
<b>Fall</b>	
POL 1013	Introduction to American Politics (core) 3
College of Sciences elective <sup>2</sup>	3
College of Sciences elective <sup>2</sup>	3
College of Sciences elective <sup>2</sup>	3
Upper-division AST or PHY elective <sup>3</sup>	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
College of Sciences elective <sup>2</sup>	3
College of Sciences elective <sup>2</sup>	3
College of Sciences elective <sup>2</sup>	3
Upper-division AST or PHY elective <sup>3</sup>	3

Creative Arts (core)	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

- <sup>1</sup> This laboratory course includes a lecture component as indicated on the University Schedule of Classes.
- <sup>2</sup> At least 18 semester credit hours of College of Sciences electives must be at the upper-division level.
- <sup>3</sup> 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.

**B.A. in Physics with a Concentration in 6-12 Physical Science Teacher Concentration – Recommended Four-Year Academic Plan**

<b>First Year</b>	
<b>Fall</b>	
AIS 1203	Academic Inquiry and Scholarship (core) 3
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) 4
UTE 1111	Introduction to STEM Teaching Step 1 1
WRC 1013	Freshman Composition I (core) 3
<b>Credit Hours</b>	<b>14</b>
<b>Spring</b>	
MAT 1224	Calculus II 4
PHY 1943 & PHY 1951	Physics for Scientists and Engineers I and Physics for Scientists and Engineers I Laboratory (core) 4
UTE 1122	Introduction to STEM Teaching Step 2 2
WRC 1023	Freshman Composition II (core) 3
American History (core)	3
<b>Credit Hours</b>	<b>16</b>
<b>Summer</b>	
American History (core)	3
Component Area Option (core)	3
Social and Behavioral Sciences (core)	3
<b>Credit Hours</b>	<b>9</b>
<b>Second Year</b>	
<b>Fall</b>	
CHE 1103	General Chemistry I 3
CHE 1121	General Chemistry I Laboratory 1
PHY 1963 & PHY 1971	Physics for Scientists and Engineers II and Physics for Scientists and Engineers II Laboratory 4



UTE 3203	Knowing and Learning in Mathematics and Science	3
Creative Arts (core)		3

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**Credit Hours** **14**

**Spring**

UTE 3213	Classroom Interactions	3
MAT 2214	Calculus III	4
Government-Political Science (core)		3
Government-Political Science (core)		3
Language, Philosophy and Culture (core)		3

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**Credit Hours** **16**

**Third Year****Fall**

CHE 1113	General Chemistry II	3
PHY 2103	Modern Physics	3
PHY 2111	Modern Physics Laboratory	1
UTE 3023	Perspectives on Science and Mathematics	3
Upper-division PHY elective		3
Upper-division PHY elective		2

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**Credit Hours** **15**

**Spring**

PHY 2823	Mathematical Physics I	3
PHY 3203	Classical Mechanics I	3
PHY 3343	Physics Research Laboratory	3
SPE 3603	Introduction to Special Education	3
UTE 4203	Project-Based Instruction	3

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**Credit Hours** **15**

**Fourth Year****Fall**

ESL 3083	Second Language Teaching and Learning for Grades 7-12	3
LTED 3773	Reading and Writing Across the Disciplines-Grades 7-12	3
PHY 3423	Electricity and Magnetism	3
PHY 3293	Thermal Physics	3
Upper-division PHY elective		3

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**Credit Hours** **15**

**Spring**

UTE 4646	Clinical Teaching	6
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**Credit Hours** **6**

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**Total Credit Hours** **120**

**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. 341)
- Minor in Physics (p. 341)

## 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.

Code	Title	Credit Hours
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**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**

PHY 3603	Cosmology	
AST 4203	Stellar Astrophysics	
AST 4953	Special Studies in Astronomy	

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**Total Credit Hours** **20**

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.

Code	Title	Credit Hours
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**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.

# 10. 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 Academic Inquiry and Scholarship, the Writing Program, and the Reserve Officer Training Corps (ROTC) Programs. The University College also offers the Bachelor of Arts degree in Multidisciplinary Studies, the Bachelor of Science degree in Multidisciplinary Studies, and partners with other University offices to offer coursework that is accessible to students from all majors.

- B.A. degree in Multidisciplinary Studies (p. 342)
- B.A. degree in Multidisciplinary Studies Online (p. 342)
- B.S. degree in Multidisciplinary Studies (p. 344)

## 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 B.A. degree in Multidisciplinary Studies is also offered in a 100 percent online format (<https://online.utsa.edu/>). Students pursuing the 100 percent online format must fulfill all degree requirements in the same manner as residential students. The following disciplinary areas are available to online students: Business, Data Science, Health, Sociology, and Communication.

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
<b>Total Credit Hours</b>	<b>42</b>

## Degree Requirements

All candidates for the B.A. degree in Multidisciplinary Studies must complete the following 51 semester credit hours.

Code	Title	Credit Hours
<b>A. Multidisciplinary Studies Foundation Courses</b>		
Technology Requirement. Select one of the following:		3
CS 1063	Introduction to Computer Programming I	
CS 1083	Programming I for Computer Scientists	
CS 1173	Data Analysis and Visualization	
DS 4003	Introduction to Data Science	
DS 4013	Programming for Data Science	
IS 1413	Excel for Business Information Systems	
IS 2053	Programming Languages I with Scripting	
Communications Requirement. Select one of the following:		3
COM 1043	Introduction to Communication	
COM 1053	Business and Professional Speech	
COM 2113	Public Speaking	
COM 2343	Introduction to Mass Communication	
COM 2733	Introduction to Digital Communication	
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: 39

1. Focus Area One: 15 semester credit hours of courses within a single discipline, content area, or certificate program with at least 9 hours at the upper-division level.

2. Focus Area Two: 12 semester credit hours of courses within a single discipline, content area, or certificate program with at least 6 hours at the upper-division level.

3. Focus Area Three: 12 semester credit hours of courses within a single discipline, content area, or certificate program with at least 6 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 27

All candidates for this degree must complete 27 semester hours of free electives, at least 15 of which must be at the upper-division level.

**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 (core)	3
Mathematics (core)		3
<b>Credit Hours</b>		<b>15</b>

#### 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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CS 1063 or CS 1083 or IS 1413	Introduction to Computer Programming I or Programming I for Computer Scientists or Excel for Business Information Systems	3
WRC 1023	Freshman Composition II (core)	3
Focus Area 1 lower-division course		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

#### 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
Focus Area 2 lower-division course		3
Focus Area 3 lower-division course		3
Life & Physical Sciences (core)		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

POL 1133 or POL 1213	Texas Politics and Society (core) or Civil Rights in Texas and America	3
Focus Area 1 lower-division course		3
Focus Area 2 lower-division course		3
Creative Arts (core)		3
Language, Philosophy & Culture (core)		3
<b>Credit Hours</b>		<b>15</b>

#### Third Year

##### Fall

Focus Area 1 upper-division course		3
Focus Area 2 upper-division course		3
Focus Area 3 lower-division course		3
Social and Behavioral Sciences (core)		3
Component Area Option (core)		3
<b>Credit Hours</b>		<b>15</b>

##### Spring

Focus Area 1 upper-division course		3
Focus Area 2 upper-division course		3
Focus Area 3 upper-division course		3
Free elective		3
Free elective		3
<b>Credit Hours</b>		<b>15</b>

#### Fourth Year

##### Fall

Focus Area 1 upper-division course		3
Focus Area 3 upper-division course		3
Free elective (upper division)		3
Free elective		3

Free elective (upper division)	3
<b>Credit Hours</b>	<b>15</b>
<b>Spring</b>	
MDS 4983 Senior Seminar for Multidisciplinary Studies	3
Free elective	3
Free elective (upper division)	3
Free elective (upper division)	3
Free elective (upper division)	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120</b>

## Bachelor of Science Degree in Multidisciplinary Studies

The Bachelor of Science (B.S.) degree in Multidisciplinary Studies allows students to develop a degree program around academic themes or niche areas, such as Artificial Intelligence, Cyber Intelligence, Data Science, and Geoinformatics (<https://www.utsa.edu/uc/mdst/interdisciplinary.html>), that fall outside traditional disciplinary boundaries and helps support student achievement of 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, one of which must be housed in the College of Sciences, or the College of Engineering and Integrated Design, or be STEM oriented.

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 degree program will provide a vehicle for students whose interests lie in multiple areas.

Students selecting the Multidisciplinary Studies major will be expected to achieve the following learning outcomes:

1. Ability to gather information and demonstrate an understanding of concepts and principles from three different fields of study.
2. Ability to apply concepts from three areas of focus and demonstrate their mastery of the knowledge and skills in a capstone course.
3. Ability to show through a final project that they have integrated different areas of study in order to examine a question, problem, or phenomenon.
4. Ability to demonstrate communication and computer competencies.

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 Science degree in Multidisciplinary Studies may not receive a double major or a minor.

### Core Curriculum Requirements (42 semester credit hours)

Students seeking the B.S. 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
<b>Total Credit Hours</b>	<b>42</b>

### Degree Requirements

All candidates for the B.S. degree in Multidisciplinary Studies must complete the following 69 semester credit hours.

Code	Title	Credit Hours
<b>A. Multidisciplinary Studies Foundation Courses</b>		
Technology Requirement. Select one of the following:		3
CS 1063	Introduction to Computer Programming I	
CS 1083	Programming I for Computer Scientists	
CS 1173	Data Analysis and Visualization	
DS 4003	Introduction to Data Science	
DS 4013	Programming for Data Science	
IS 1413	Excel for Business Information Systems	
IS 2053	Programming Languages I with Scripting	
Communications Requirement. Select one of the following:		3
COM 1043	Introduction to Communication	
COM 1053	Business and Professional Speech	
COM 2113	Public Speaking	
COM 2343	Introduction to Mass Communication	
COM 2733	Introduction to Digital Communication	
ENG 2413	Technical Writing	
<b>B. Multidisciplinary Studies Fields of Study</b>		
All candidates for the degree must select courses to satisfy the requirements of the following three focus areas based on three distinct disciplines:		57
1. Focus Area One: 21 semester credit hours of courses within a single discipline with at least 9 hours at the upper-division level.		
2. Focus Area Two: 18 semester credit hours of courses within a single discipline with at least 9 hours at the upper-division level.		
3. Focus Area Three: 18 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 Sciences or the College of Engineering.		
<b>C. Multidisciplinary Studies Courses</b>		
MDS 2023	Introduction to Multidisciplinary Studies	3

MDS 4983	Senior Seminar for Multidisciplinary Studies	3
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**D. Free Electives 9**

All candidates for this degree must complete 9 semester hours of free electives, at least 6 of which must be at the upper-division level.

**Total Credit Hours 78**

## Course Sequence Guide for B.S. 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.S. in Multidisciplinary Studies – Four-Year Academic Plan

#### First Year

##### Fall Credit Hours

AIS 1203	Academic Inquiry and Scholarship (core)	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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CS 1063 or IS 1413	Introduction to Computer Programming I or Excel for Business Information Systems	3
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WRC 1013	Freshman Composition I (core)	3
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Mathematics (core)		3
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**Credit Hours 15**

##### Spring

WRC 1023	Freshman Composition II (core)	3
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Focus Area 1 lower-division course		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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Free elective		3
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**Credit Hours 15**

#### 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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Focus Area 1 lower-division course		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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Free elective		3
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**Credit Hours 15**

##### Spring

MDS 2023	Introduction to Multidisciplinary Studies	3
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POL 1013	Introduction to American Politics (core)	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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Focus Area 3 lower-division course		3
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**Credit Hours 15**

#### Third Year

##### Fall

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 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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Life & Physical Sciences (core)		3
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**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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Focus Area 1 upper-division course		3
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Focus Area 3 upper-division course		3
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Life & Physical Sciences (core)		3
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Free elective		3
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**Credit Hours 15**

#### Fourth 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 upper-division course		3
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Social & Behavioral Sciences (core)		3
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Creative Arts (core)		3
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**Credit Hours 15**

##### Spring

MDS 4983	Senior Seminar for Multidisciplinary Studies	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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Component Area Option (core)		3
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Language, Philosophy, & Culture (core)		3
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**Credit Hours 15**

**Total Credit Hours 120**

- Certificate in Community Engaged Leadership (p. 346)
- Certificate in Legal Studies (p. 346)
- Certificate in Data Science (p. 347)



## Certificate in Community Engaged Leadership

The Certificate in Community Engaged Leadership is open to all majors in the University. The certificate integrates coursework with experiential learning opportunities within UTSA, San Antonio, and Bexar County communities, in order to foster knowledge, understanding, skills, and virtues of community leaders.

Students pursuing the Certificate in Community Engaged Leadership must complete 15 semester credit hours:

Code	Title	Credit Hours
<b>A. Required course:</b>		
UCS 4013	UTSA Advanced Engagement	3
<b>B. Service-learning/community engaged learning designated electives:</b>		<b>12</b>
12 semester credit hours of electives from service-learning designated courses or non-designated courses with the approval from the faculty, Director of the Center for Civic Engagement, and Associate Dean for Undergraduate Programs in University College.		
At least 6 of the 12 semester credit hours of electives must be earned from the service-learning designated courses. Approval of the non-designated courses as electives will be based on the service-learning hours and a requirement to complete a service-learning project.		
<b>C. Civic Engagement Summit or UTSA Undergraduate Research Showcase:</b>		
Participation in at least one Civic Engagement Summit, UTSA Undergraduate Research Showcase or other approved event.		
<b>Total Credit Hours</b>		<b>15</b>

## Certificate in Legal Studies

The Certificate in Legal Studies is open to all majors in the University. The certificate offers courses to assist students hone their analytical reasoning, logic, and writing skills; give exposure to the law; and gain experiential learning, with the opportunity to develop the American Bar Association (ABA) recommended skills to pursue a legal education.

Students pursuing the Certificate in Legal Studies must complete 15 semester credit hours:

Code	Title	Credit Hours
<b>A. Required courses:</b>		
PHI 2043	Introductory Logic	9
UCS 4933	Internship in Prelaw Studies	
or PAL 4933	Internship in Politics and Law	
or POL 4933	Internship in Political Science	
WRC 3013	Writing Strategies for the Pre-law Student	
or PAL 3023	Legal Research and Writing	
<b>B. Elective courses (listed by ABA recommended skills areas):</b>		<b>6</b>
1. Problem Solving		
PAL 4123	Legal and Philosophical Reasoning	
2. Critical Reading		
PHI 1043	Critical Thinking	
ANT 3733	Political and Legal Anthropology	

ECO 3113	Introduction to Mathematical Economics <sup>1</sup>
ECO 3123	Introduction to Econometrics <sup>1</sup>
HON 3513	Archer: Policy-Making Process
MKT 3013	Principles of Marketing
PHI 3063	Philosophy of Law
PHI 3213	Ethics
PAL 4133	Legal Analysis and Argumentation
PHI 4123	Contemporary Continental Philosophy
3. Writing and Editing	
ENG 3383	Writing in Public and Professional Contexts
ENG 3413	Specialized Technical & Professional Writing
ENG 4433	Advanced Professional Writing
4. Oral Communication	
COM 3113	Argumentation and Debate
MGT 3123	Organizational Communication <sup>1</sup>
MGT 3253	Interpersonal Communication <sup>1</sup>
5. Research	
HON 3021	Honors Essay Writing
SOC 3323	Introduction to Social Research
PAL 3023	Legal Research and Writing
UCS 4913	Independent Study in Prelaw
6. Organization and Management	
EDL 3003	Introduction to Leadership
7. Public Service and Promotion of Justice	
HON 3103	Honors Service
PAL 3113	Minorities and the Law
HIS 3623	History of the Civil Rights Movement
GLA 3043	International Human Rights
8. Relationship-building and Collaboration	
PSY 4193	Relationships
PSY 4213	Social Cognition
9. Background Knowledge	
HIS 4223	Environmental History of the United States
10. Exposure to the Law	
CRJ 2623	Substantive Criminal Law
CRJ 3573	Restorative Justice
CRJ 4633	Constitutional Criminal Procedure
CS 3113	Principles of Cyber Security
CSM 4633	Construction Law
ES 3203	Environmental Law
FIN 3433	Principles of Real Estate
GLA 3003	International Law
GLA 3733	National Security Law
GLA 4133	Conflict, Law, and Security in Global Affairs
IS 3533	Cyber Law and Legal System
MGT 4643	Human Resources Law <sup>1</sup>
PAD 3153	Administrative Law and Policy
PAL 3013	The American Legal Process
or POL 3013	The American Legal Process
PAL 3313	The Supreme Court
or POL 3313	The Supreme Court

PAL 3343	Constitutional Analysis
PAL 3513	Trial and Appellate Advocacy
PAL 3583 or POL 3583	Jurisprudence Jurisprudence
PAL 3843 or POL 3843	Campaign and Election Law Campaign and Election Law
PAL 3853 or POL 3853	Immigration Law Immigration Law
PAL 3863	Contracts
POL 3323	Constitutional Law I
POL 3333	Constitutional Law II
POL 3373	The Legislative Process
PAL 4223	Torts through the Case Method
PAL 4233	Federal Courts
SOC 3113	Criminology
SPE 3693	Special Education Law
<b>Total Credit Hours</b>	<b>15</b>

DS 4033	Data Mining and Machine Learning	3
<b>Total Credit Hours</b>		<b>15</b>

Courses may offer skill development in more than one area, but are only listed once.

<sup>1</sup> Students need to complete the proper prerequisites to take these courses.

## Certificate in Data Science

The Undergraduate Certificate in Data Science is open to all undergraduate students at UTSA, including non-degree seeking students, regardless of their college or major. Applicants who are currently enrolled in an undergraduate degree program at UTSA have already met University requirements for admission. Applicants who are not currently enrolled in an undergraduate degree program at UTSA will be required to apply for admission to UTSA as a special undergraduate (non-degree-seeking) student and to indicate their intent to seek admission into a certificate program.

The certificate is designed for individuals from all academic disciplines to build analytical and computational foundation to investigate data science problems. This certificate program is created to fill the industry need for more data-science capable professionals and to prepare individuals for a career in data science related fields. Individuals completing this certificate will gain the foundational data science knowledge as well as practical skills in data curation, data analytics, data visualization, data mining, and machine learning. The certificate is administered by the University College in conjunction with the School of Data Science. The certificate program is also offered in a 100 percent online format (<https://online.utsa.edu/program/data-science-undergraduate-certificate/>).

Students pursuing the Undergraduate Certificate in Data Science must complete 15 semester credit hours:

Code	Title	Credit Hours
<b>A. Required Courses:</b>		
DS 3023	Statistical Analysis for Data Science	3
DS 4003	Introduction to Data Science	3
DS 4013	Programming for Data Science	3
DS 4023	Data Organization and Visualization	3

## Academic Inquiry and Scholarship

Academic Inquiry & Scholarship Studies (AIS) courses are designed to orient first-year students to the different fields of study within their Academic Studies. The AIS Studies courses address various academic skills necessary to succeed beyond the first year in college.

## Air Force Reserve Officer Training Corps (AFROTC) Program

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 and Space 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.

All students in Air Force ROTC have access to study materials and uniforms for use in AFROTC. In addition, most upper level 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 School and Research Building (GSR), Room 1.220.

UTSA and participating crosstown school students may enroll in courses that are required in order to become a commissioned officer in the United States Air Force and United States Space Force. The Air Force Reserve Officer Training Corps (ROTC) (<https://www.utsa.edu/afrotc/>) is voluntary and open to all qualified students, male and female. The requirements are as follows:

1. Must be at least 14 (with parents' consent)
2. Good moral character
3. Good physical condition
4. Full-time student

Students attending the following participating crosstown schools are eligible to enroll: Trinity University, St. Mary's University, The University of the Incarnate Word, Our Lady of the Lake University, Texas A&M University-San Antonio, Schreiner University, and any Alamo Colleges District system school. Crosstown students will enroll in Air Force ROTC at UTSA. All AFROTC courses & training are held at the UTSA Main Campus. Contact us at (210)458-4624, or [AFROTCDet842@utsa.edu](mailto:AFROTCDet842@utsa.edu) for more information.

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 and/or Space Force, a baccalaureate degree in one of the disciplines offered by UTSA or participating crosstown schools 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 are 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 in 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 two-week field training course (If selected by HQ AFROTC board) the summer between their sophomore and junior years.

All POC students enlist in the Air Force Reserve (Obligated Reserve Status) 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/Space Force officer within a realistic Air Force/Space Force organizational framework. It also provides cadets with opportunities to learn about the conduct of Air Force/Space Force missions and operations through guest lectures and professional development training. Cadets are also required to attend physical fitness training a minimum of two times per 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 curriculum. A Minor in Aerospace Studies (ASC) will develop a well-rounded perspective of a future Air Force/Space 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.

Code	Title	Credit Hours
<b>A. Required core courses</b>		
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>B. Additional courses</b>		
Select 3 of the following, two of which must be at the upper-division level:		9
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	
<b>C. Additional courses</b>		
Select 3 of the following, 2 of which must be at the upper-division level:		9
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 Global Politics	
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 Developing 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	
<b>Total Credit Hours</b>		<b>20</b>

To declare a Minor in Aerospace Studies, obtain advice, or seek approval of substitutions for course requirements, students should consult the Department Chair/Professor of Aerospace Studies 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) 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.

The Army Reserve Officer Training Corps (ROTC) (<https://armyrotc.utsa.edu/>) 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.

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.

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 23 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 1122, MSC 2012, and MSC 2022, which are designed for beginning students who want to qualify for entry into the Advanced Training Course and those who may want to try military science without incurring a military commitment. A number of popular and challenging extracurricular activities are associated with these courses. Students can qualify for entry into the Advanced Training Course by completing the Leader's Training Course, a paid summer internship program.

Students may compress the Basic Course into one academic year with the approval of the professor of military science. The Basic Course may be waived without credit for students with prior military service and/or junior ROTC.

## Two-Year Program

This program consists of the Advanced Training Course, which incorporates the last two years of the Four-Year Program. The Advanced Training Course consists of MSC 3013, MSC 3023, MSC 3033, MSC 4013, and MSC 4023. It is open only to students who have completed the Basic Course or earned placement credit. The Advanced Training Course is designed to qualify a student for a commission as an officer in the United States Army. Students must complete the 6-week paid leadership training (Advanced Camp) 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.

The program requirements for the Basic and Advanced courses are as follows:

MSC 1012	Introduction to the Army and Critical Thinking	2
MSC 1122	Adaptive Leadership and Professional Competence	2
MSC 2012	Leadership and Decision Making	2
MSC 2022	Army Doctrine and Team Development	2
MSC 3013	Training Management and the Warfighting Functions	3
MSC 3023	Applied Leadership in Small Unit Operations	3
MSC 3033	American Military History	3
MSC 4013	The Army Officer	3
MSC 4023	Company Grade Leadership	3
<b>Total Credit Hours</b>		<b>23</b>

## 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.

Code	Title	Credit Hours
<b>A. Required Courses:</b>		
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>B. Select 3 of the following:</b>		<b>9</b>
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 Developing World	
POL 3493	Politics of the Middle East	
POL 3523	Force in International Politics	
POL 3563	Current Issues in World Politics	
<b>Total Credit Hours</b>		<b>21</b>

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.

## 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.

# 11. FIRST YEAR EXPERIENCE

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The First Year Experience Program (<https://www.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.

All first-year college students 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 an Academic Inquiry and Scholarship (AIS) course, 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. Additionally, peer mentors connect students to various campus events designed to enhance the success of first-year students.

# 12. 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 highly committed and talented students. 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 experiential honors curricula in the nation. The Honors College uses 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 equally dedicated students from 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. The Honors College helps students to emerge as culturally aware global citizens, live engaged and intentional lives, and acquire skills that will help them to flourish.

In the Honors College, we genuinely value our community, devoted to seeking new and significant ways to help students 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 well-being 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

Professional Development

Intellectual Achievement and Research

Cultural Exploration

Engaged Living

Skill Development

We have intentionally designed our curriculum to help students produce demonstrable achievements and leadership in each of these areas.

### Our Ethos

UTSA Honors promotes 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.

### Our Learning Outcomes

Our Honors curriculum is open to all majors. Our learning outcomes, or C.A.P.A.C.I.T.I.E.S., reflect our emphasis on knowledge discovery and application through personal development and civic engagement.

Creative Courage

Adaptability & Resilience

Project Management

Agency through Accomplishment

Communicating Effectively

Intellectual Dexterity

Team/Independent Learning and Decision Making

Intercultural Confidence

Ethical Reasoning

Self-Reflection and Awareness

## 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. Students are also admitted to the Honors College upon selection of one of the Special Scholar Programs for incoming Freshmen, Honors College Programs Open to Non-Honors College Students, and Jointly Sponsored Programs (listed below). Students admitted to the University of Texas Coordinated Admissions Program (CAP) are ineligible for admission. Admission information is available through the Honors College website (<https://honors.utsa.edu/>).

### Retention in the Honors College

#### Good Academic Standing

Policies on Good Academic Standing in the Honors College vary program to program. Please contact your program administrator or your Honors

College Academic Counselor for specific program policies. Note that students at graduation need a UTSA grade point average (GPA) of 3.3 or higher to be classified as an Honors College graduate. Students need to maintain at least a 3.0 GPA to remain members in good standing with the Honors College; for more information, please see your program administrator or Honors College Academic Counselor.

### Dismissal

Students who are not in Good Academic Standing as of July 1 may be dismissed, depending on their program requirements. Please contact your program administrator for details.

### 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 website (<https://honors.utsa.edu/>) for probation procedures.

## Benefits and Services

The UTSA Honors College provides the following opportunities to members of the College:

### Early Registration

Honors students have early registration benefits, which means they may register for classes on the first day of priority 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 addition to advising in their college of major, Honors students have an Honors Academic Counselor who helps them in their undergraduate careers at UTSA. Honors students also have Honors peer coaches to help them find the best opportunities in which to get involved. Our Honors academic counseling team helps students to find and develop study abroad, service learning, professional development, internship, and other S.P.I.C.E.S opportunities, all the while ensuring that students stay 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 grade point average as determined by the specific scholarship and complete an Honors course each semester. More information on scholarships is available through the Honors College website (<https://honors.utsa.edu/>).

### Honors Events

The heart of the honors community is student life, including events. Honors students host many events each year that are funded by honors student fees. These events are social, ceremonial, academic, or sometimes just fun. This is the best way for an Honors student to build their network.

### Honors Study Abroad

The Honors College works with UTSA's 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. Multiple scholarships are available through the International Education Fund and the Honors College.

## Professional Networking

Every year honors students have access to many unique professional, academic, and cultural networking opportunities that are not available to other students.

## Honors Residential Life

Honors students have the opportunity to live with other Honors students in campus housing, where they have Honors events and activities throughout the school year.

## Recognition for Honors Graduation

Members of the Honors College who complete curricular and non-curricular requirements listed in this catalog and maintain the requisite GPA 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 to the official university commencement ceremony. Recognition for Honors graduates at the UTSA Graduation includes a notation on the transcript and diploma and mention in the university 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,
- Have a minimum UTSA grade point average of 3.30 on a 4.00 scale, **and**
- Complete the below-listed Honors College Curricular 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 S.P.I.C.E.S.: **s**ervice, **p**rofessional development, **i**ntellectual achievement and research beyond the classroom, **c**ultural exploration, **e**ngaged living, and **s**kill 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), to potentially graduate early, and to utilize previously acquired credits, our curriculum is intentionally flexible.

Honors students have the opportunity to meet most curricular requirements in two ways. The first way is traditional Honors coursework, which includes Honors College courses, Honors sections offered in other colleges, independent studies, graduate courses, and other experiential courses. The second way to meet certain curricular requirements is through out of classroom Experiences. Out of classroom Experiences include study abroad, internships, service projects, research, and other independently designed activities that meet the Honors College Learning Outcomes. After completing out of classroom Experiences, students enroll in the appropriate 0 SCH course, present in the Experiential Learning Fair for assessment and professional development, and once

they pass the Experiential Learning Fair, fulfill an Honors curricular requirement, detailed below.

Overall, Honors curricular requirements are comparable to course equivalencies of 25 or more credit hours. The intentional curricular flexibility and malleability 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, Honors' curricular flexibility with out of classroom Experiences allows a student to graduate with as few as 7 credit hours of formal Honors coursework.

There are two paths to graduate from the Honors College. Path placement depends on how many cumulative Student Credit Hours (SCH) students have earned when they accept the invitation to join the Honors College: less than 60 semester credit hours and 60 or more semester credit hours.

### Noncurricular Requirements for All Honors Students

In addition to the below-mentioned Honors College curricular requirements, all Honors College students must attend a minimum of three (3) Honors designated Events per semester (see the Honors College website (<https://honors.utsa.edu/>) for details).

### Curricular Requirements for Student who Accept the Invitation to Join Honors with Less Than 60 Semester Credit Hours

All Honors coursework and equivalencies must earn a grade of C- (70%) or better in order to fulfill an Honors College curricular requirement, except Experiential Learning Fair scores and Contracted courses, which must be a grade of B- (80%) or better. Honors credits earned at other institutions of higher education will be substituted in on a credit-for-credit basis.

#### I. Lower Division Coursework (7 SCH)

7

Complete all of the following:

HON 1000	Honors 101
HON 2301	Honors: The Civic Ethos
CSH 1213	Topics in World Cultures (This must be an Honors section.)
WRC 1023	Freshman Composition II (This must be an Honors section unless passed before entering the Honors College.)

#### II. Upper Division Coursework in the S.P.I.C.E.S. (9 SCH)

9

These may include any HON course, Honors contracted course, or any Honors section with a non-HON prefix. With the exception of HON 1000, HON courses with a course number ending in 0 (e.g., HON 3100, 3310, etc.) substitute for 3 SCH of Honors Electives if not used to fulfill the SPICES requirements above.

##### Service

HON 3103	Honors Service (May substitute HON 3100, HON 3533, or any 3 SCH Honors section designated as Service)
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##### Professional Development

HON 3263	Honors Professional Development (May substitute HON 3260, HON 4933, HON 4936, any 3 SCH Honors section designated as Professional Development, or any internship course)
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##### Intellectual Achievement and Research

HON 3313	Honors Intellectual Achievement and Research (May substitute HON 3310, HON 4993, HON 4913, any Independent Study course, any Thesis course, or any 3 SCH Honors section designated as Intellectual Achievement and Research)
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##### Cultural Exploration

HON 3403	Honors Cultural Exploration (May substitute HON 3400 or any 3 SCH Honors section designated as Cultural Exploration)
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##### Engaged Living

HON 3503	Honors Engaged Living (May substitute HON 3500 or any 3 SCH Honors section as Engaged Living)
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##### Skill Development

HON 3603	Honors Skill Development (May substitute HON 3600 or any 3 SCH Honors section designated as Skill Development)
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### III. Upper or Lower Division Honors Electives (9 SCH)

9

These may include any HON course, Honors contracted course, or any Honors section with a non-HON prefix. With the exception of HON 1000, HON courses with a course number ending in 0 (e.g., HON 3100, 3310, etc.) substitute for 3 SCH of Honors Electives if not used to fulfill the SPICES requirements above. Select non-Honors courses, including those listed below, can also count toward Honors Experiences, including Electives.

Up to 6 SCH of graduate level coursework taken for undergraduate credit may be applied to Honors Electives

Up to 6 SCH of Internship, regardless of course prefix, may be applied to Honors Electives

Up to 6 SCH of Independent Study, regardless of course prefix, may be applied to Honors Electives

Up to 6 SCH of Thesis, regardless of course prefix, may be applied to Honors Electives

Up to 6 SCH of research coursework, regardless of course prefix, may be applied to Honors Electives

#### Total Credit Hours

25

### Curricular Requirements for Student who Accept the Invitation to Join Honors with 60 or More Semester Credit Hours

All Honors coursework and equivalencies must earn a C- (70%) or better in order to fulfill an Honors College curricular requirement, except Experiential Learning Fair scores and Contracted courses, which must be a B- (80%) or better.

#### I. Lower Division Coursework (7 SCH)

7

Complete all of the following:

HON 1000	Honors 101
HON 2301	Honors: The Civic Ethos
CSH 1213	Topics in World Cultures (This must be an Honors section unless passed before entering the Honors College.)
WRC 1023	Freshman Composition II (This must be an Honors section unless passed before entering the Honors College.)

#### II. Upper Division Coursework in the S.P.I.C.E.S. (9 SCH)

9



These may include any HON course, Honors contracted course, or any Honors section with a non-HON prefix. With the exception of HON 1000, HON courses with a course number ending in 0 (e.g., HON 3100, 3310, etc.) substitute for 3 SCH of Honors Electives if not used to fulfill the SPICES requirements above. Select non-Honors courses, including those listed below, can also count toward Honors Experiences, including Electives.

Service	
HON 3103	Honors Service (May substitute HON 3100, HON 3533, or any 3 SCH Honors section designated as Professional Development)
Professional Development	
HON 3263	Honors Professional Development (May substitute HON 3260, HON 4933, HON 4936, any 3 SCH Honors section designated as Professional Development)
Intellectual Achievement and Research	
HON 3313	Honors Intellectual Achievement and Research (May substitute HON 3310, HON 4993, HON 4913, any Independent Study course, any Thesis course, or any 3 SCH Honors section designated as Intellectual Achievement and Research)
Cultural Exploration	
HON 3403	Honors Cultural Exploration (May substitute HON 3400 or any 3 SCH Honors section designated as Cultural Exploration)
Engaged Living	
HON 3503	Honors Engaged Living (May substitute HON 3500 or any 3 SCH Honors section designated as Engaged Living)
Skill Development	
HON 3603	Honors Skill Development (May substitute HON 3600 or any 3 SCH Honors section designated as Skill Development)
<b>Total Credit Hours</b>	<b>16</b>

### Honors College Graduation with Distinction

A student may graduate from the Honors College “With Distinction” by meeting the following conditions:

**1. Complete Requirements for Graduation from the Honors College 25-34**

Complete all above-mentioned curricular and noncurricular requirements for graduating from the Honors College

**2. 9 SCH Additional Honors Electives** **9**

These may include any HON course, Honors contracted course, or any Honors section with a non-HON prefix. With the exception of HON 1000, HON courses with a course number ending in 0 (e.g., HON 3100, 3310, etc.) substitute for 3 SCH of Honors Electives if not used to fulfill the SPICES requirements above.

**3. Capstone Requirement: complete one of the following (any SCH varies accumulated in completing the capstone requirement will be counted toward Graduation from the Honors College)**

- An Honors College or Departmental Honors Thesis
- The Citymester Program
- The Archer Program
- The Legislative Scholars Program

Any other UTSA college's honors program or double major	
<b>Total Credit Hours</b>	<b>34-43</b>

### 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 at least 3.0 upon graduation and being in good standing in the semester of graduation. Students who are Honors College Members in good standing in special programs but not pursuing the Honors College curriculum will also graduate as Honors College Members.

### Honors College Programs Open to Non-Honors College Students and Jointly Sponsored Programs

The UTSA Honors College partners with several programs on our campus. Some programs are also open to non-Honors College students.

#### The Archer Program

The Bill Archer Fellowship Program was established by The University of Texas System in conjunction with Former U.S. Representative Bill Archer as a way to bring highly motivated and accomplished students from Texas to Washington, D.C. to participate in varied internships and take part in classes focusing on policy, history, and advocacy. Students earn 15 hours of upper-division course credit, including six hours of course credit for their internship experience. Our students work with organizations such as the United Nations Information Centre, the US Department of State, many offices within the White House and on the Hill, with federal agencies, and with non-profit organizations. Our selection process is rigorous, in order to bring only the best representatives from throughout Texas. Information and application forms can be found on the Bill Archer Fellowship UTSA website (<https://honors.utsa.edu/students/programs/>).

**HON 3513. Archer. 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. Course Fee: DL01 \$75.

**HON 3523. Archer. 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. Archer. 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 4936. Honors Internship. (0-0) 6 Credit Hours.**

Prerequisite: Membership 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 each semester.

**The Legislative Program**

Created in September 2004, the UTSA Legislative Scholars Program is a collaborative initiative started between Texas State Representative Ruth Jones McClendon and The University of Texas at San Antonio. Coordinated by the UTSA Honors College, the program provides undergraduate and graduate students with the opportunity to serve as interns in the Texas House of Representatives during regular legislative sessions. Students with an interest in public policy and a commitment to public service, as exemplified by Representative McClendon, are encouraged to apply. Information and application can be found at the UTSA Legislative Scholars website (<https://honors.utsa.edu/programs/>).

**UTSA College Honors Programs**

Several UTSA colleges have or are developing college honors programs, including the College of Business, the College of Sciences, the College of Engineering, and the College of Health, Community and Policy. When implemented, they will be available to Honors College students who meet criteria for admission. See your Honors Academic Counselor for details when a new college honors program begins that could apply to your plans.

**UTSA Citymester**

UTSA Citymester is a semester-long academic immersion 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 fastest growing city and seventh largest city. Students who successfully complete Citymester meet three (3) Honors requirements as SPICES or Honors Electives.

**Required coursework:**

HON 3103	Honors Service (Course will be titled "Citymester: City Solutions".)
HON 3263	Honors Professional Development (Course will be titled "Citymester: City Skills")
HON 4403	Citymester: City Sites

## 13. 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. **Fee amounts listed in course descriptions are current at the time of publication and are subject to change.**

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.

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*.

### Incidental Course and Program Fees

Charge/Fee Name	Code	Amount	Charged Per	Charge/Fee Description
Certification Charge (COEHD) - College of Liberal & Fine Arts Majors	SELS	\$20	Semester	This charge is assessed all undergraduate College of Liberal and Fine Arts and College of Sciences majors seeking teacher certification to defray costs associated with group advising, individual advising, processing applications for admission to the Program, processing applications for certification to the State Board, outreach via classroom visits and mobile advising at student events.
Certification Charge (COEHD) - Graduate Students	SEGR	\$20	Semester	This charge is assessed graduate students seeking various professional certifications. Services for graduate students are provided only during their final semester. The fee will be attached to EDL 6941-3 for Educational Leadership students and may be assessed for other professional certification courses for principals, school counselors and Master Reading teachers.
Certification Charge (COEHD) - Post-Baccalaureate Students	SECC	\$105	Semester	This charge is assessed all post-baccalaureate students seeking initial teacher certification to defray costs of providing transcript evaluation, group and individual advising, and processing of certification applications to the State Board.
College of Engineering and Integrated Design (CEID) Programs Fee	SAP1	\$25	Course	This fee is assessed students enrolled in certain lower-division undergraduate courses in the architecture curriculum who use any of the studios under the direction of the College of Engineering and Integrated Design (CEID). This fee is to defray costs of supplies, materials, equipment, and services for students enrolled in Architecture, Interior Design, and Construction Science and Management curriculum
Counseling Support Fee	COUN	\$35	Course	All students registered in certain counseling department courses are charged this fee to defray costs of services and training designed to prepare counselors.
Dietetics and Nutrition Program Service Charge	DNPS	\$75	Semester	This charge is assessed all undergraduate and graduate students enrolled in the Coordinated Program in Dietetics (CDP) to defray costs associated with annual student orientation, training for students and off-site preceptors, administrative services to support student internship placement, tracking of practicum/internship hours, and other reports and systems required for ACEND accreditation.
Dietetics Teaching Kitchen Fee	DNMF	\$225	Credit Hour	This fee is assessed all students enrolled in certain Dietetics and Nutrition Program courses to defray costs associated with the purchase of foods, consumable supplies and materials to be used in a kitchen laboratory.

Dietetics and Nutrition Practicum Fee	DNPF	\$20	Credit Hour	This fee is assessed all students enrolled in certain Dietetics and Nutrition Program courses to defray costs associated with supervision of students at affiliation sites at various locations; including student liability coverage costs associated with the practicum courses, related faculty travel, recruitment and meetings with preceptors, field trips, instructional support materials, recognition events and training for the preceptors.
Dietetics and Nutrition Testing Fee	DNTM	\$112	Credit Hour	This fee is assessed all students enrolled in certain Dietetics and Nutrition Program capstone courses to defray costs associated with the purchase of educational materials for assessing student learning using computer-based testing in preparation for the national credentialing exam and including, but not limited to, the purchase of revised materials and annual subscriptions to online manuals.
Digital Learning Fee	DL01	\$25	Credit Hour	This fee is assessed each student enrolled in certain hybrid or online courses with a maximum charge of \$150 per semester to defray costs associated with managing, maintaining, upgrading and general operations of the University's Learning Management System (LMS) and online course development activities.
Education Assessment Course Fee (COEHD)	LEA1/ LEA2	\$15/ \$25	Course	A fee of \$15 per undergraduate course and \$25 per graduate course will be assessed all students registered in certain College of Education and Human Development courses to defray costs of development and maintenance of a collection of professional assessment materials.
Education TExES Charge	CETC	\$65	Semester	This charge is assessed all students pursuing teaching or professional certification through the College of Education and Human Development to defray costs associated with providing materials and services mandated by the Texas Education Agency, to support student success on the Texas Examinations of Educator Standards (TExES). Services offered include individual and group tutorials, workshops and large review sessions, implementation of Practice TExES exams, instructional materials, supplies, and salaries.
Educational Field Clinical Instruction Fee - College of Education and Human Development	STF1	\$75	Course	This fee will be assessed all students during their semester of student teaching and students in special education practicum settings, counseling practica, and student internships to defray costs associated with providing materials and services associated with field-based courses and practica, to include supervision of student teachers, interns, and students in field placement at both the graduate and undergraduate levels, appreciation items for student teaching supervisors, mileage costs and salaries, training in the use of educational technology, and travel to mandatory state-wide Texas Education Agency training.
Educational Field Instruction Fee - KIN	STFK	\$57	Semester	This fee will be assessed all students during their semester of student teaching and students in special education practicum settings, counseling practica, and student internships to defray costs associated with providing materials and services associated with field-based courses and practica, to include supervision of student teachers, interns, and students in field placement at both the graduate and undergraduate levels, appreciation items for student teaching supervisors, mileage costs and salaries, training in the use of educational technology, and travel to mandatory state-wide Texas Education Agency training.

### 13. Course Fees

Equipment and Materials Fee - Department of Physics and Astronomy	MEPA	\$18	Course	This fee is assessed all students registered for certain courses in the Department of Physics and Astronomy to defray costs associated with purchase and maintenance of demonstration equipment, printing supplies, and acquisition of WEBASSIGN to enhance learning and wages.
Equipment and Materials Fee - Political Science and Geography, Media Equipment and Materials	MST1	\$30/ \$35	Course	A fee of \$30 per undergraduate student and \$35 per graduate student is assessed all students registered for certain courses in the Department of Political Science and Geography to defray costs of the media studio and salaries for tutorial instruction.
Equipment and Materials Fee - Political Science and Geography, Geographic Information Systems Materials	GIS1	\$32/ \$40	Course	A fee of \$32 per undergraduate student and \$40 per graduate student is assessed all students registered for certain courses in the Department of Political Science and Geography to defray costs of printing equipment and supplies and salaries for tutorial instruction.
Field Trip Fee - Biology	STFB	\$40	Course	A supplementary fee is assessed students in certain Biology and Environmental Science and Ecology courses to pay for the expenses of field trips.
Field Trip Fee - Environmental Science and Ecology	STFE	\$40	Course	A supplementary fee is assessed students in certain Biology and Environmental Science and Ecology courses to pay for the expenses of field trips.
Foreign Language Multimedia Learning Center Fee	MM01	\$7	Course	This fee is assessed each student who registers at UTSA in a foreign language course to defray costs of supplies, printing, equipment and part-time lab helpers in the Multimedia Learning Center.
Global Business Skills Charge - College of Business International Programs	BISP	\$10	Course	This fee will be assessed all students enrolled in certain lower-division undergraduate College of Business classes to defray costs of programs that develop students' global business skills including: programs that give participating students on-campus or U.S.-based access to study, research, or practicums related to global business; programs that immerse participating students in global business environments for study, research or practicums in U.S. or international locations; and, costs to administer programs related to developing global business skills.
Graduate Services Charge - College of Education and Human Development	GH01	\$30	Credit Hour	This charge is assessed all students enrolled in graduate or doctoral courses in the College of Education and Human Development to defray costs associated with advising, orientation, certification, placement, research support, recruitment, professional education, meetings, and other administrative and support services.
Graduate Services Charge - College of Engineering and Integrated Design (CEID)	CEGS	\$60/ \$30	Semester	A charge of \$60 per semester (\$30 per summer session) is assessed all students enrolled in graduate courses of the College of Engineering and Integrated Design (CEID) curriculum to defray the cost of providing advising, orientation, and administrative services.
Graduate Services Charge – College for Health, Community and Policy	GHC1	\$25	Credit Hour	This charge is assessed all students enrolled in graduate courses in the College for Health, Community and Policy (HCAP) to defray cost of hiring graduate assistants; support graduate student travel to present their research at national conferences; orientation, recruiting and reception for new graduate students; support for hiring teaching assistants for grad student summer teaching; and staff support.
Graduate Services Charge - College of Liberal and Fine Arts	GL01	\$30	Credit Hour	This charge is assessed all students enrolled in graduate courses of the College of Liberal and Fine Arts to defray costs associated with services to master's and doctoral students including advising, orientation, graduation, certification, placement, research support, professional education meetings, seminars, administrative services, graduate student travel, assistantships, and other support services.



Graduate Services Charge - College of Sciences	GS01	\$30	Credit Hour	This charge is assessed all students enrolled in graduate or doctoral courses of the College of Sciences curriculum to provide advising, research support, recruitment, professional meetings, assistantships, administrative services, and seminars.
Honors Experiential Enrichment Fee	EEHC	\$240	Fall/Spring Semester	A fee of \$240 per Fall and Spring semester is assessed all students enrolled in the Honors College to defray costs associated with specialized counseling within Honors, specialized advising within student majors, design of new opportunities for study-abroad, purchase of consumables for undergraduate research, faculty training and access to experiential tutorial sequences to improve readiness for graduate school and professional/board exams.
Individual Instruction Fee – Art Studio	SAF2	\$50	Credit Hour	A fee is assessed each student enrolled in Art studio classes will be used to defray the instructional costs associated with individual instruction as required by individual competencies held by students who take Art studio courses.
Individual Instruction Fee – Music	M001	\$154	Credit Hour	This fee is assessed all students in certain Music courses to defray the costs associated with instrument purchases, sponsoring artist teachers, master class and workshops for music majors, better tutoring opportunities for performing ensembles and to establish an opera budget.
Installment Plan Fee	IPP3	\$16	Semester	This charge is assessed when a student elects to pay tuition, fees, and charges under the installment payment plan. This charge is normally included in the first installment payment. A \$10 charge is assessed for each delinquent installment payment.
Instrument Users Fee (COS) - Department of Chemistry	IUC1	\$15	Course	This fee is assessed all students registered in certain Department of Chemistry courses to defray costs of repairing and replacing teaching equipment and salaries for technicians.
Instrument Users Fee (COS) - Department of Computer Science	IUCS	\$15	Credit Hour	This fee is assessed all students registered in certain Department of Computer Science courses to defray costs of hardware and software instruments, peripheral devices, software licenses and maintenance of the computer science lab equipment, and administrative support.
Instrument Users Fee (COS) - Department of Earth and Planetary Sciences	IUE1	\$15	Course	This fee is assessed all students registered in certain Department of Earth and Planetary Sciences courses to defray costs of repairing and replacing teaching equipment.
Instrument Users Fee (COS) - Department of Integrative Biology	IUS1	\$15	Course	This fee is assessed all students registered in certain Department of Integrative Biology courses to defray costs of repairing and replacing teaching equipment.
Instrument Users Fee (COS) - Department of Molecular Microbiology and Immunology	IUB2	\$10	Course	This fee assessed all students registered in certain Department of Molecular Microbiology and Immunology courses to defray costs of repairing and replacing teaching equipment.
Instrument Users Fee (COS) - Department of Neuroscience, Developmental and Regenerative Biology	IUB1	\$10	Course	This fee assessed all students registered in certain Department of Neuroscience, Developmental and Regenerative Biology courses to defray costs of repairing and replacing teaching equipment.
Instrument Users Fee (COS) - Department of Physics and Astronomy	IUP1	\$20	Course	This fee is assessed all students registered in certain Department of Physics and Astronomy courses to defray costs of purchase, repair and maintenance of teaching equipment and salaries for technicians.
Instrument Users Fee (COLFA) - School of Music	IUM1	\$30	Credit Hour	This fee is assessed all students registered in certain Music courses to defray costs of musical instrument technical training and the replacement and maintenance of musical instruments.

### 13. Course Fees

International Student Insurance Fee	HIF1/ HIF2/ HIF3	Varies		All international students are required to purchase the UT System Student Health Insurance Plan, which covers basic medical expenses for injury and sickness. The plan is in compliance with the United States Information Agency's regulations. The fee is assessed as part of the regular tuition and fee charges. A waiver of this fee is available, provided 1) the student presents proof of coverage by a comparable U.S. health plan, and 2) UTSA approves the comparable health coverage.
International Student Program Charge	OIP1	\$125	Semester	This charge is assessed all international students to defray costs of programs and services for international students in the Office of International Programs.
Internship Fee - College of Education and Human Development	INT1	\$50	Credit Hour	This fee is assessed each student enrolled in designated internship courses in the departments of BBL, ILT, ELPS, EDP, COU, KHN, and REGSS. To defray costs associated with the creation, development, coordination, placement, and supervision of students engaged in these internship courses and support administrative cost for an internship coordinator.
Internship Fee - Department of Criminal Justice	CJIF	\$65	Semester	This fee is assessed each student enrolled in Department of Criminal Justice courses to defray costs associated with creating, developing, and implementing internships including salaries and material costs.
ISCS Course Resource Fee (COB) - Department of Information Systems & Cyber Security	ISCS	\$25	Credit Hour	This fee is assessed all undergraduate and graduate students enrolled in certain Information System courses in the College of Business to defray the cost of providing materials including but not limited to technology maintenance, administrative and equipment support, and direct and indirect costs to upgrade the student's classroom and virtual learning experience such as Virtual Desktop Infrastructure (VDI), cyber range time and specialized software.
ISCU Education Abroad Course Fee	ISCU	\$40	Credit Hour	This fee is assessed all students attending Study-Abroad courses in Urbino, Italy, to defray cost associated with the oversight, administration, program accounting, creation/ adjustment, and on-site management of courses taught in Urbino.
Laboratory Fee	L001	\$2 - \$30	Course	In certain courses, a laboratory fee, not to exceed the actual cost of materials and supplies and no less than \$2 nor more than \$30, may be charged. When a laboratory fee is charged, the online schedule of classes indicates the associated fee.
Learning Resource Fee - Core Curriculum	LRC1	\$4	Credit Hour	A fee is assessed each student enrolled in Core Curriculum courses to provide materials, services and administrative support to enhance student success and to defray costs for funding Graduate Assistants, Teaching Assistants and materials to upgrade the student's classroom experience.
Learning Resource Fee - Writing Program	LRF1	\$10	Credit Hour	A fee is assessed each student enrolled in Writing Program courses to provide materials, services and administrative support to enhance student success and to defray costs for funding Graduate Assistants, Teaching Assistants and materials to upgrade the student's classroom experience.
Learning Resource Fee - Academic Inquiry (AIS)	LRU1	\$12.50	Credit Hour	A fee is assessed each student enrolled in certain University College courses to provide materials, services and administrative support to enhance student success and to defray costs for funding Graduate Assistants, Teaching Assistants and materials to upgrade the student's classroom experience.

Learning Resource Fee - College of Business	LRB1	\$15.41	Course	A fee is assessed each student enrolled in certain lower-division undergraduate College of Business courses to provide materials, services and administrative support to enhance student success and to defray costs for funding Graduate Assistants, Teaching Assistants and materials to upgrade the student's classroom experience.
Learning Resource Fee - College of Education and Human Development	LRH1	\$20.54	Course	A fee is assessed each student enrolled in College of Education and Human Development undergraduate and graduate courses to provide materials, services and administrative support to enhance student success and to defray costs for funding Graduate Assistants, Teaching Assistants and materials to upgrade the student's classroom experience.
Learning Resource Fee - College of Engineering and Integrated Design (CEID)	LRE1	\$25	Course	A fee is assessed each student enrolled in certain lower-division undergraduate College of Engineering and Integrated Design (CEID) courses to provide materials, services and administrative support to enhance student success and to defray costs for funding Graduate Assistants, Teaching Assistants and materials to upgrade the student's classroom experience.
Learning Resources Fee - College for Health, Community and Policy	LRHC	\$10	Course	This fee is assessed all students registered in certain Departments of Kinesiology, Health & Nutrition, Sociology, & Psychology in the College for Health, Community and Policy (HCAP) to defray costs to provide materials & course supplies, individual and/or group advising, hiring supplemental instruction reader/graders, coaching, tutorials, discussions and study skills sessions, reviews and instructional support lab materials.
Learning Resource Fee - College of Liberal and Fine Arts	LRLF	\$10.27	Course	A fee is assessed each student enrolled in College of Liberal and Fine Arts courses to provide materials, services and administrative support to enhance student success and to defray costs for funding Graduate Assistants, Teaching Assistants and materials to upgrade the student's classroom experience.
Learning Resource Fee - College of Sciences	LRS1	\$15.40	Credit Hour	A fee is assessed each student enrolled in certain lower-division undergraduate College of Sciences courses to provide materials, services and administrative support to enhance student success and to defray costs for funding Graduate Assistants, Teaching Assistants and materials to upgrade the student's classroom experience.
Learning Resource Fee - Multidisciplinary Studies	LRMS	\$12.50	Credit Hour	This fee is assessed all students enrolled in Multidisciplinary courses to provide materials, providing personnel and equipment support of instructional design incorporating new technologies, services and administrative support to enhance student success and to defray costs for funding Graduate Assistants, Teaching Assistants and materials to upgrade the student's classroom experience.
Learning Resource Fee - Non-Course Based Instruction (NCB)	LRNC	\$12.50	Credit Hour	This fee is assessed all students enrolled in NCB courses to provide materials, providing personnel and equipment support of instructional design incorporating new technologies, services and administrative support to enhance student success and to defray costs for funding Graduate Assistants, Teaching Assistants and materials to upgrade the student's classroom experience.

### 13. Course Fees

Learning Resource Fee - ROTC	LRRT	\$12.50	Credit Hour	This fee is assessed all students enrolled in ROTC courses to provide materials, providing personnel and equipment support of instructional design incorporating new technologies, services and administrative support to enhance student success and to defray costs for funding Graduate Assistants, Teaching Assistants and materials to upgrade the student's classroom experience.
Learning Resource Fee – School of Data Science	LRDS	\$12.50	Credit Hour	This fee is assessed all students enrolled in Data Science course to provide materials, providing personnel and equipment support of instructional design incorporating new technologies, services and administrative support to enhance student success and to defray costs for funding Graduate Assistants, Teaching Assistants and materials to upgrade the student's classroom experience.
Manipulatives Fee - Department of Mathematics	MFSM	\$30/ \$35	Course	A fee of \$30 per undergraduate course and \$35 per graduate course is assessed all students in certain mathematics courses to defray costs of manipulatives used in courses for pre-service and in-service mathematics teachers and payment of salaries for assistance with manipulatives.
Music Course Fee	MC01	\$25	Credit Hour	This fee is assessed Music majors and non-Music majors that perform in and/or attend university ensemble concerts, dance minors, and students registered in music courses that are in the core curriculum and thus required to attend university performances. To defray costs of concert quality instruments, custom music chairs, music stands, sheet music, lighting, sound, and storage equipment, residency activities and guest artists/performers.
National Student Exchange Program Application Fee	NSEC	\$95	App.	This fee is assessed students participating in the National Student Exchange program to defray costs associated with the application fee charged by NSE for student participation.
Physical Education - Golf Activity Fee	PAH1	\$80	Semester	A fee of \$80 for a semester or summer term is required for physical education golf activity courses to defray costs of equipment for use of driving range.
Physical Education - Kinesiology Activity Fee	PAG1	\$20	Course	This fee is assessed students in certain Kinesiology courses to defray costs associated with equipment used in the instruction of kinesiology activity classes including golf, tennis, soccer, football, basketball, badminton, volleyball, resistance training and elementary PE activities. Additional expenses include the rental of exercise and sport facilities for course instruction.
Physical Education - Kinesiology Supply and Maintenance Fee	KSM1	\$10	Course	This fee is assessed all students registered in certain Kinesiology courses to defray costs associated with purchase of disposable or consumable materials and maintenance of equipment in instructional classes.
Physical Education - Outdoor Activity Fee	PARC	\$40	Semester	This fee is assessed all students enrolled in certain Kinesiology courses to defray costs associated with repair and purchase of equipment and transportation.
PreClinical & Outbound Clinical Fee	OCTF	\$500	Semester	This fee is assessed certain COEHD teacher candidates during their clinical teaching semester to defray costs associated with hiring a clinical faculty member to supervise the students and to pay for faculty travel to school sites outside of Bexar county.
Professional Affiliation, Accreditation, and Development Fee – College of Education and Human Development	EHPA	\$20	Semester	To defray costs associated with maintaining affiliations and accreditations with national professional organizations, administrative staff support, professional development of faculty, staff and students associated with various organizations.

Professional Affiliation and Development Fee - Department of Social Work	SWPA	\$25	Semester	This fee is assessed each student enrolled in certain social work courses to defray costs associated with affiliation expenses for professional organizations (accreditation fees, membership, travel, etc.) and professional development for social work graduate students (registration, travel, honorarium, etc.).
Professional Development and Enrichment Fee - College of Liberal and Fine Arts	LFPE	\$60	Semester	This fee is assessed to College of Liberal and Fine Arts students each semester to defray the costs associated with providing student enrichment experiences including experiential learning, immersion/alternative break experiences, and programming to develop marketable skills, professional development & growth, internship & externship support services, and associated personnel & operational costs.
Professional Development Charge - College of Business - Undergraduate	BPD1	\$60	Semester	This fee is assessed all Sophomore, Junior and Senior College of Business students each semester to defray costs associated with providing personnel, training, and other support for professional development programs, placement, and internship support services.
Professional Development Charge - College of Business - Graduate	BPD2	\$150	Semester	This fee is assessed all Graduate College of Business Students each semester to defray costs associated with providing personnel, training and other support for professional development programs, placement, and internship support services.
Program Charge - Education Abroad Application Fee	SAAF	\$75	Semester	This fee is assessed all students applying to participate in study abroad and exchange programs.
Program Charge - Education Abroad Program Fee	SARF	\$150/ \$75	Semester	A charge of \$150 per semester is assessed all students registered in for-credit study abroad and exchange programs, and \$75 per semester for research and non-credit programs.
Program Charge - Education Abroad Services Health Insurance Fee	SAHF	\$20	Week	This fee is assessed all students each week they are abroad, while enrolled in a study-abroad program, to defray the costs of insurance, International SOS, and administrative expenses.
Program Charge - Honors College	PCHC	\$100	Fall/Spring Semester	A charge of \$100 per Fall and Spring semester is assessed all students enrolled in the Honors College to defray costs associated with providing services for initiatives of the honors student leadership team, such as enhanced community building opportunities and attendance of conferences and programs to provide extensive experiential learning opportunities for both curricular and non-curricular initiatives.
Program Charge - Roadrunner Camp Charge	CAMP	\$125	Student	This fee is assessed each student attending Roadrunner Camp.
School Psychology Support Fee	SPS1	\$14	Credit Hour	This fee is assessed all students enrolled in the School Psychology Master's Program to defray costs associated with services and training necessary to prepare School Psychologists for practicum, school-based internships, job placement, and for clinic operations and support.
Studio Art Fee	SAF1	\$45	Course	This fee is assessed students enrolled in art (ART) courses in the visual arts curriculum that will use any of the studios under the direction of the School of Art to defray costs associated with set up and maintenance of the art studios, instructional exhibitions, wages for graduate assistants and costs of supplies and materials.
Supplementary and Special Fees		Varies	Course	Some art, music, and other courses may require supplementary or special fees. When such fees are assessed, the online schedule of classes indicates the associated fee.
Technology Services and Instructional Support Charge - College of Business	BTSI	\$15.41	Course	This fee is assessed all students registered in certain lower-division undergraduate College of Business courses to defray costs associated with personnel and equipment support for instruction.



### 13. Course Fees

Technology Services and Instructional Support Charge - College of Education and Human Development	STSH	\$10.27	Credit Hour	This fee is assessed all students registered in College of Education and Human Development courses to defray costs associated with providing personnel and technology support for Web design, procurement, maintenance and support, computer hardware and software, and other support necessary to maintain laboratory operations as well as technology for student needs and distance learning. Will improve services through the conversion of computer labs to Technology Teaching and Learning labs where students will receive integrated and graduated training, develop hands-on expertise in ISTE standards appropriate to their future roles as educators, school counselors, school psychologists and educational leaders.
Technology Services and Instructional Support Charge - College of Engineering and Integrated Design (CEID)	STSE	\$10	Credit Hour	This fee is assessed all students enrolled in certain lower-division undergraduate College of Engineering and Integrated Design (CEID) courses to defray costs associated with providing additional personnel, calibration of equipment, computer software/hardware, service contracts, and other laboratory equipment maintenance.
Technology Services and Instructional Support Charge - College for Health, Community and Policy	STHC	\$6	Credit Hour	This fee is assessed all students registered in the College for Health, Community and Policy courses to defray costs to upgrade technology in student labs, purchase software and technology agreements, and to provide new learning resources for distance and collaborative learning. The funds will also support A/V tech fees for student academic programs, meetings and events.
Technology Services and Instructional Support Fee - College of Liberal and Fine Arts	STLF	\$6.16	Credit Hour	This fee is assessed all students registered in COLFA courses to defray costs associated with providing personnel and technology support for Web design, procurement, maintenance and support, computer hardware and software, personnel, and other support necessary to maintain laboratory/computer technology-based teaching, research, and learning operations.
Technology Services and Instructional Support Charge - College of Sciences	STSI	\$7.20	Credit Hour	This fee is assessed all students registered in certain lower-division undergraduate College of Sciences courses to defray costs associated with providing additional personnel and equipment support for instruction, technology support for Web design and maintenance, Web accessible course information, support for academic reporting and distance learning, service contracts, and other support necessary to maintain laboratory equipment.
Technology Services and Instructional Support Charge - Writing Program	STSF	\$2	Credit Hour	This fee is assessed all students enrolled in certain Writing Program courses to defray costs associated with providing personnel and equipment support of instructional design incorporating new technologies.
Three-Attempt Enrollment Charge	TTEC	\$512.85	Credit Hour	This charge is assessed all undergraduate students enrolled in the same course for the third and subsequent times to defray revenue lost as a result of nonfunding by the state.
Undergraduate Credit Limitation Charge - 45-Hour Limitation	CL45	\$512.85	Credit Hour	Resident undergraduate students who initially enrolled from the Fall 1999 Semester through the Summer 2006 Semester and who enroll in courses in excess of 45 semester credit hours above those required for completion of their degree program will be assessed an additional charge of \$512.85 per semester credit hour to defray UTSA's loss of formula funding revenue from the state. Students with questions or who wish to appeal this policy due to extenuating circumstances should contact their advising center. Please refer to "Undergraduate Credit Limitation" in General Academic Regulations.

Undergraduate Credit Limitation Charge - 30-Hour Limitation	CL30	\$512.85	Credit Hour	Effective Fall 2006, all new undergraduate resident students will be assessed the higher tuition rate of \$512.85 per semester credit hour for hours attempted in excess of 30 semester credit hours above those required for completion of a degree to defray UTSA's loss of formula funding revenue from the state. Students with questions or who wish to appeal this policy due to extenuating circumstances should contact their advising center. Please refer to "Undergraduate Credit Limitation" in General Academic Regulations.
Doctoral Credit Limitation Charges	CL99	\$997.10	Credit Hour	Doctoral students who enroll in courses in excess of 99 semester credit hours of doctoral work will be assessed an additional charge of \$997.10 per semester credit hour to defray UTSA's loss of formula funding revenue from the state
UTSA Card Replacement Charge	YIR1	\$10		This charge is assessed for replacement of a lost and/or stolen student identification card.
Writing Materials Fee	LB01	\$5	Course	This fee is assessed for composition courses.

# 14. 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. 358) in this catalog.

## A

- Academic Inquiry and Scholarship (AIS) (p. 370)
- Accounting (ACC) (p. 371)
- Aerospace Studies (ASC) (p. 372)
- African American Studies (AAS) (p. 373)
- American Studies (AMS) (p. 374)
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# 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 may be applied toward the First Year Experience Core Curriculum requirement. (AIS 1203, AIS 1223, AIS 1233, AIS 1243, AIS 1253, AIS 1263, and AIS 1273 are equivalent. Credit cannot be earned for more than one of these courses.) Generally offered: Fall. Course Fees: DL01 \$75; LRC1 \$12; LRU1 \$37.50.

### **AIS 1213. AIS: Architecture, Construction, and Planning. (3-0) 3 Credit Hours.**

Academic Inquiry and Scholarship is designed to orient first-year college students to the fields of study related to architecture, construction, and interior design. 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. This course may be applied toward the First Year Experience Core Curriculum requirement. (AIS 1203, AIS 1213, AIS 1223, AIS 1233, AIS 1243, AIS 1253, AIS 1263, and AIS 1273 are equivalent. Credit cannot be earned for more than one of these courses.) Course Fees: LRC1 \$12; LRU1 \$37.5.

### **AIS 1223. AIS: Arts and Humanities. (3-0) 3 Credit Hours.**

Academic Inquiry and Scholarship is designed to orient first-year college students to the fields of study related to arts and humanities. 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. This course may be applied toward the First Year Experience Core Curriculum requirement. (AIS 1203, AIS 1223, AIS 1233, AIS 1243, AIS 1253, AIS 1263, and AIS 1273 are equivalent. Credit cannot be earned for more than one of these courses.) Course Fees: LRC1 \$12; LRU1 \$37.50; DL01 \$75.

### **AIS 1233. AIS: Business. (3-0) 3 Credit Hours.**

Academic Inquiry and Scholarship is designed to orient first-year college students to the fields of study related to business. 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. This course may be applied toward the First Year Experience Core Curriculum requirement. (AIS 1203, AIS 1223, AIS 1233, AIS 1243, AIS 1253, AIS 1263, and AIS 1273 are equivalent. Credit cannot be earned for more than one of these courses.) Course Fees: LRC1 \$12; LRU1 \$37.50; DL01 \$75.

### **AIS 1243. AIS: Engineering, Mathematics, and Sciences. (3-0) 3 Credit Hours.**

Academic Inquiry and Scholarship is designed to orient first-year college students to the fields of study related to engineering, mathematics, and physical science. 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. This course may be applied toward the First Year Experience Core Curriculum requirement. (AIS 1203, AIS 1223, AIS 1233, AIS 1243, AIS 1253, AIS 1263, and AIS 1273 are equivalent. Credit cannot be earned for more than one of these courses.) Course Fees: LRC1 \$12; LRU1 \$37.50; DL01 \$75.

### **AIS 1253. AIS: Interdisciplinary Education. (3-0) 3 Credit Hours.**

Academic Inquiry and Scholarship is designed to orient first-year college students to the fields of study related to education. 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. This course may be applied toward the First Year Experience Core Curriculum requirement. (AIS 1203, AIS 1213, AIS 1223, AIS 1233, AIS 1243, AIS 1253, AIS 1263, and AIS 1273 are equivalent. Credit cannot be earned for more than one of these courses.) Course Fees: LRC1 \$12; LRU1 \$37.50; DL01 \$75.

### **AIS 1263. AIS: Life and Health Sciences. (3-0) 3 Credit Hours.**

Academic Inquiry and Scholarship is designed to orient first-year college students to the fields of study related to life and health sciences. 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. This course may be applied toward the First Year Experience Core Curriculum requirement. (AIS 1203, AIS 1213, AIS 1223, AIS 1233, AIS 1243, AIS 1253, AIS 1263, and AIS 1273 are equivalent. Credit cannot be earned for more than one of these courses.) Course Fees: LRC1 \$12; LRU1 \$37.50; DL01 \$75.

### **AIS 1273. AIS: Social Sciences and Public Policy. (3-0) 3 Credit Hours.**

Academic Inquiry and Scholarship is designed to orient first-year college students to the fields of study related to social science and public policy. 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. This course may be applied toward the First Year Experience Core Curriculum requirement. (AIS 1203, AIS 1213, AIS 1223, AIS 1233, AIS 1243, AIS 1253, AIS 1263, and AIS 1273 are equivalent. Credit cannot be earned for more than one of these courses.) Course Fees: LRC1 \$12; LRU1 \$37.50; DL01 \$75.

### **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)

## 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 Carlos Alvarez College of Business. Generally offered: Fall, Spring. Course Fees: BISP \$10; BTSI \$15.41; DL01 \$75; LRB1 \$15.41.

### 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 \$15.41; DL01 \$75; LRB1 \$15.41.

### 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 \$15.41; DL01 \$75; LRB1 \$15.41.

### 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 Carlos Alvarez 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. Differential Tuition: \$126. Course fee: DL01 \$75.

### ACC 3033. Intermediate Accounting II. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in ACC 3023 and declared accounting major. 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. Differential Tuition: \$126. Course fee: DL01 \$75.

### ACC 3043. Federal Income Taxation. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in ACC 3023 and declared accounting major. 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. Differential Tuition: \$126. Course fee: DL01 \$75.

### 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. Differential Tuition: \$126. Course fee: DL01 \$75.

### ACC 3071. Professional Issues and Topics in Accounting I. (1-0) 1 Credit Hour.

Prerequisites: A grade of "C-" or better in ACC 2013 and ACC 2033 and concurrent enrollment in ACC 3023. A study of accounting practice, professionalism, certification, department, research, discussion, writing, and presentation. Will apply to a bachelor's degree. Will not count toward hours required to qualify for the CPA examination. Differential Tuition: \$42.

### ACC 3081. Professional Issues and Topics in Accounting II. (1-0) 1 Credit Hour.

Prerequisites: A grade of "C-" or better in ACC 3071. An advanced study of accounting practice, professionalism, certification, department, research, discussion, writing, and presentation. Will apply to a bachelor's degree. Will not count toward hours required to qualify for the CPA examination. Differential Tuition: \$42.

### 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. 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. Differential Tuition: \$126. Course fee: DL01 \$75.

### ACC 3123. Cost Analysis. (3-0) 3 Credit Hours.

Prerequisites: A grade of "C-" or better in ACC 2033 and declared accounting major. 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. Differential Tuition: \$126. Course fee: DL01 \$75.

### 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 Carlos Alvarez 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. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. 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. Differential Tuition: \$126. Course fee: DL01 \$75.

**ACC 4091. Professional Issues and Topics in Accounting III. (1-0) 1 Credit Hour.**

Prerequisites: A grade of "C-" or better in ACC 3081. An applied study of accounting practice, professionalism, certification, department, research, discussion, writing, and presentation. Will apply to a bachelor's degree. Will not count toward hours required to qualify for the CPA examination. Differential Tuition: \$42.

**ACC 4163. Contemporary Issues in Accounting Practice. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in ACC 3023, ACC 3033, ACC 3043, ACC 3113, ACC 3123, ACC 3163 and declared accounting major; 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. Differential Tuition: \$126.

**ACC 4911. Independent Study. (0-0) 1 Credit Hour.**

Prerequisites: A 3.0 Carlos Alvarez College of Business grade point average and permission in writing from the instructor, the Department Chair, and the Dean of the Carlos Alvarez 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. Differential Tuition: \$42.

**ACC 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: A 3.0 Carlos Alvarez College of Business grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the Carlos Alvarez 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. Differential Tuition: \$126.

**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 Carlos Alvarez 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. Differential Tuition: \$126.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

# 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. Course Fee: LRRT \$12.50.

**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. Course Fee: LRRT \$12.50.

**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. Course Fee: LRRT \$37.50.

**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. Course Fee: LRRT \$37.50.

**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: DL01 \$75; LRC1 \$12; LRH1 \$20.54; STSH \$30.81.

**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 \$20.54; STSH \$30.81; DL01 \$75.

**AAS 3013. Black Communities and Culture. (3-0) 3 Credit Hours.**

This course examines Black communities and their cultural expressions (e.g., art, music, film, literature, cultural identity). The substantive and disciplinary emphasis can vary from one semester to another. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**AAS 3023. Global Blackness and Afro-Latinidad. (3-0) 3 Credit Hours.**

This course offers a survey of the African Diaspora from a cultural perspective exploring the ways African descendent peoples in the Americas have created Black selves, community, and struggle through transnational imagination and action. The role of Afro-Latinidad, Black social movements, culture, music, and the arts will be considered in terms of how they have come to shape the African Diaspora as an evolving space of Black social making and moving. Course fees: LRH1 \$20.54; STSH \$30.81.

**AAS 3113. Doing Black Studies Research. (3-0) 3 Credit Hours.**

This course introduces students to the practice of conducting independent research. Though it concentrates on the empirical study of Black communities and experiences, this course provides useful introductions to both quantitative and qualitative methods for students in the humanities and social sciences, regardless of major. Students will learn and practice a diverse set of methodologies, and consider the ethics of Black Studies research before proposing their own project. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**AAS 3123. Civil Rights Movement and 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: DL01 \$75; LRH1 \$20.54; STSH \$30.81.

**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 \$20.54; STSH \$30.81.

**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: DL01 \$75; LRH1 \$20.54; STSH \$30.81.

**AAS 4023. Black and Brown Youth Resistance. (3-0) 3 Credit Hours.**

This course examines theories of youth resistance, and specifically the ways in which youth of color have and continue to resist, whether through organizing social justice movements, self-expression, and/or cultural production. Drawing from Critical Youth Studies, Ethnic Studies, and Women of Color feminisms, this course explores how youth as a whole, and youth of color specifically are socially constructed in the U.S. and the impact of these constructions of race, gender, sexuality, and age structurally on youth in terms of the policies that are created that impact their everyday lives. This course also explores the contributions youth of color have made and continue to make in society, not only through organizing but also through their everyday forms of resistance such as their behaviors, languaging, forms of self-expression, engagement with popular culture, and resulting cultural production. Same as MAS 4023, credit cannot be earned for both AAS 4023 and MAS 4023. Course fees: LRH1 \$20.54; STSH \$30.81.

**AAS 4033. Women of Color Feminisms. (3-0) 3 Credit Hours.**

This course centers feminist epistemological contributions of Women of Color. As a result of their positionalities, Women of Color have developed their own organizations, printing presses, research approaches, and critical theories, and have contributed to social change. This course examines critical theories that make up Black, Chicana/x and Latina/x, Indigenous, and Asian/Asian American feminisms. Women of Color feminisms have advanced change through their scholarship, activism, community organizing, participation in mutual aid, cultural production, and critique of and resistance to coloniality in all of its forms. This course uses an intersectional approach to examining the contributions of Women of Color feminisms across disciplines to include, but not limited to, education, public health, popular culture, community organizing, policy, and cultural production. Same as MAS 4033 and WGSS 4033, credit cannot be earned for both AAS 4033, WGSS 4033, and MAS 4033. Course fees: LRH1 \$20.54; STSH \$30.81.

**AAS 4043. Intersectionality. (3-0) 3 Credit Hours.**

Beginning with the violence of the Jim Crow South, and the ongoing segregation in the north and west, this course examines a variety of Black social movements through the current day. Readings, discussions, and assignments will explore the life cycle and impact of each Black social movement, as well as the historical, economic, and political contexts in which they developed. Ethnographies and oral histories from movement participants will be at the center of this exploration. Course fees: LRH1 \$20.54; STSH \$30.81.

**AAS 4103. Writing Black Lives. (3-0) 3 Credit Hours.**

This course is an examination of selected works detailing the complexities of Black lives across the Diaspora. Focused on developing both critical reading and critical writing skills, this course allows students to study Black life writers and simultaneously consider how self-invention, creativity, and imagination are used in the writing of Black lives. Black life writing, as practice, combats white supremacist stereotypes about Black characters, both historical and present day. We will read various approaches to Black life writing, and students will develop life writing skills in areas critical to Black experiences, culminating in a writing project in the genres of their choosing (essay, short story, folk tale, novel, or autobiography, for example). Course fees: LRH1 \$20.54; STSH \$30.81.

**AAS 4113. The Black Church and Social Change in the 20th-Century. (3-0) 3 Credit Hours.**

This course examines key characteristics, leaders, and theological shifts across a wide of array of religious institutions known as the "Black Church." The course focuses on the Black Church's varied influences on the development of social organizations, cultural expressions, localized, national leadership, and educational institutions that serve the needs and desires of Black communities throughout the 20th century. Course fees: LRH1 \$20.54; STSH \$30.81.

**AAS 4133. Black Social Movements. (3-0) 3 Credit Hours.**

Beginning with the violence of the Jim Crow South, and the ongoing segregation in the north and west, this course examines a variety of Black social movements through the current day. Readings, discussions, and assignments will explore the life cycle and impact of each Black social movement, as well as the historical, economic, and political contexts in which they developed. Ethnographies and oral histories from movement participants will be at the center of this exploration. Course fees: LRH1 \$20.54; STSH \$30.81.

**AAS 4213. Senior Capstone. (3-0) 3 Credit Hours.**

Prerequisites: AAS 2013, AAS 3013, and REGS 2003. This course is designed to facilitate the work of African American Studies majors as they complete their capstone projects. Working with the professor, and in collaboration with their classmates, students will produce an original contribution to the field grounded in African American Studies methods and theory. Over the course of the semester, we will examine and work through the challenges of producing original research. Course fees: LRH1 \$20.54; STSH \$30.81.

**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 \$10.

**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 \$20.

**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 \$20.54; STSH \$30.81.

**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 \$20.54; STSH \$30.81.

## 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 \$10.27; STLF \$18.48; DL01 \$75.



**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**AMS 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: Permission in writing (form available) from 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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 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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

## 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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**ANT 1513. Anthropology Matters. (3-0) 3 Credit Hours.**

This course will showcase the strategic value of the anthropology baccalaureate degree across a range of possible career paths. You will learn about people who have used their training to launch careers in public health, human rights activism, conservation, forensic investigation, heritage management, genetics, non-human primate research and care taking, product design, museum curation, and other fields. Take this class to 1) explore your interests in anthropology, 2) design a plan of course work and internships tailored to your goals, and 3) discover what anthropology can do for you. Course Fees: LRLF \$10.27; STLF \$18.48.

**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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.



**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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**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 \$10.27; STLF \$18.48; DL01 \$75.

**ANT 2113. Anthropology Goes to the Movies. (3-0) 3 Credit Hours.**

This course explores the representation of core anthropological themes, such as human and cultural evolution, cultural representation, and archaeological discovery, through popular film. It looks at how anthropological content and theory shape popular film and how popular film shapes attitudes about anthropology. This course may be repeated for credit if taught by a different instructor. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**ANT 3033. Anthropology of Care. (3-0) 3 Credit Hours.**

What is "care"? In this course, we will critically examine this question from the perspective of sociocultural and medical anthropology. We will engage with dominant theories of what care is and put those theories into conversation with case studies from contemporary communities all over the world. We will discuss how care is shaped by both local and global meanings and structures of power. This course is ideal for anyone considering going into a caring profession (e.g. pre-med) as it will provide you with a well-informed, critical perspective on care and its role in broader social processes. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**ANT 3213. Human Ecology Across the Ages. (3-0) 3 Credit Hours.**

Human ecology is the study of how humans interact with their environments by extracting resources to support people and their infrastructure. In this class we will study how human ecology has evolved and diversified over time, from the behavior of our hominid ancestors, the evolution of hunter-gatherer societies, and the emergence of agriculture, to the development of cities and space stations. Take this class if you are interested in understanding the long-term causes and consequences of the role humans play on planet Earth and what the future may look like. Course Fees: LRLF \$10.27; STLF \$18.48.

**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") Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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") Course Fees: LRLF \$10.27; STLF \$18.48.

**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 culture 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") Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**ANT 3313. Curing and Killing: The Anthropology of Shamanism. (3-0) 3 Credit Hours.**

In this course, we will analyze the practice of shamanism globally with a specific focus on Amazonia. Class materials will include ethnographic case studies, focused articles, and documentary films. The course will examine how peoples in shamanic cultures conceptualize and experience illness, how they diagnose the ailments that afflict them, and how they use shamanic curing to return to a state of health. We will also discuss the psychopharmacology of plants used in shamanism, the roles of shamans in political movements, and how contemporary non-indigenous people in North America and Europe have incorporated shamanic practices, instruments, and hallucinogens into their spiritual traditions. Course Fees: LRLF \$10.27; STLF \$18.48.

**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") Course Fees: LRLF \$10.27; STLF \$18.48.

**ANT 3343. Pacific Island Societies and Cultures. (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. (Formerly The Contemporary Pacific.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$36.96.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**ANT 3443. Anthropocene: Age of Extinction. (3-0) 3 Credit Hours.**

Many species are threatened by extinction or have already gone extinct during recent times. This is sometimes referred to as the Anthropocene mass extinction. This course will focus on this controversial topic by exploring patterns of mass extinctions, defining what the Anthropocene is, describing current extinction trends, and discussing solutions for bringing species back from the brink of extinction. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**ANT 3573. Digital Archaeology. (3-0) 3 Credit Hours.**

This course introduces students to a broad range of digital techniques for collecting, analyzing, and visualizing objects, spaces, and landscapes through a series of lab exercises and case studies. Lab exercises include hands-on activities using techniques such as 3D modeling and database design. Case studies will explore what these techniques can reveal about ancient and modern materials and social life. Course content will build skills in both data analysis and public engagement. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$36.96.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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") Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**ANT 3843. Primates of the World. (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. (Formerly Introduction to Primate Diversity.) Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**ANT 3893. Primate Behavior and 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. (Formerly Primate Ecology.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**ANT 4173. Politics of the Past. (3-0) 3 Credit Hours.**

This course explores and critically examines how archaeological materials and places of the past are meaningful to people today as cultural heritage. It reviews a series of case studies surrounding how archaeological remains are presented, interpreted, valued, claimed, destroyed, and politicized. Topics include: ethical issues and methodologies in scholarly research, conflicts between personal, political, indigenous, and national identities, illicit trade of antiquities, tourism site preservation, museum design and access, repatriation, stakeholder collaboration, and public education. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**ANT 4233. Primate Conservation. (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. (Formerly Conservation of Primates in Global perspective.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.



**ANT 4313. Anthropology of Age and Aging. (3-0) 3 Credit Hours.**

This course will explore the sociocultural construction of the human life course across contemporary communities worldwide. We will examine case studies from across the globe to learn about the diversity of meanings, values, and performances of phases of the life course (e.g. childhood, adulthood, old age) across sociocultural groups. We will also investigate how these meanings, values, and performances of the life course are interwoven with broader sociocultural and political structures, such as family/kinship, healthcare/medicine, gender, race/ethnicity, and class. A specific phase of the life course (e.g. old age) may be focused on at the instructor's discretion. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**ANT 4413. Genes, Health, and Ancestry. (3-0) 3 Credit Hours.**

Prerequisite: ANT 2033 recommended. What's in your genes? Consumer genomics and DNA testing have made genetic data cheap and largely available to everyone. But how accurate are those results? And what can DNA really tell us about our ancestry and our health? This course is a journey into the promises, pitfalls and limitations of genetics in understanding human diversity, ancestry and health. It explores how technological advancements have improved our understanding of human evolution and adaptation, and have also led to new concerns about personal privacy and bioethics. We will explore the potential and misapplications of genetic testing and gene editing and we will discuss the role of science in society. (Formerly Genes and Human Diversity.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$6.16.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$36.96.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

## Architecture (ARC)

### Architecture (ARC) Courses

**ARC 1113. Introduction to the Built Environment. (3-0) 3 Credit Hours. (TCCN = ARCH 1311)**

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; DL01 \$75.

**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 CSM 2133 in previous catalogs. Credit cannot be earned for both ARC 1133 and CSM 2133.) Course Fees: SAP1 \$25; STSA \$15.

**ARC 1213. Design 1. (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 in previous catalogs. Credit cannot be earned for more than one of the following: ARC 1213, ARC 1214, or COA 1213.) Course Fees: SAP1 \$25; STSA \$15; DL01 \$75.

**ARC 1223. Design 2. (1-8) 3 Credit Hours. (TCCN = ARCH 1304)**

Prerequisites: ARC 1213 and ARC 1313. Introduction to design as a broadly creative practice that investigates the design process from conceptual development through representational visualization and conventions. Exploration of spatial experience, context, program, order, typology, architectural elements, materials, human factors, color, light, precedent in the design of human environments. (Formerly ARC 1224. Credit cannot be earned for both ARC 1224 and ARC 1223.) Course Fees: SAP1 \$25; STSE \$30.



**ARC 1313. Design Visualization 1. (0-8) 3 Credit Hours. (TCCN = ARCH 1307)**

Prerequisites: Completion of or concurrent enrollment in ARC 1213. Engages students in an exploration of graphic processes, tools, and techniques used in the design of human environments within the design laboratory. Advances in critical thinking and ability to visualize, diagram, design, describe, and analyze human environments. Develops thinking and making skills in 2D and 3D across multiple scales. Course Fees: SAP1 \$25; STSA \$15; DL01 \$75.

**ARC 1331. Design Visualization 2. (0-3) 1 Credit Hour.**

Prerequisites: ARC 1313, ARC 1213, and completion of or concurrent enrollment in ARC 1223. Building on the discoveries and techniques of Design Visualization 1, this course engages students in an exploration of digital processes, platforms, and tools within a laboratory environment. Advances critical thinking and ability to visualize, diagram, design, and analyze human environments. Develops thinking and making skills in 2D and 3D across multiple scales. Course fees: LRE1 \$25; STSE \$10.

**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 that 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; DL01 \$75.

**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: DL01 \$75; SAP1 \$25; STSA \$15.

**ARC 2156. Design 3. (0-14) 6 Credit Hours. (TCCN = ARCH 2603)**

Prerequisite: Enrollment as an ARC or IDE major and have passed Gateway. Continued development of design processes through the exploration of the nature and impact of place, land, and climate within the design process. Focuses on the design of environmentally responsive buildings that includes consideration of structure, material, space, form, site, climate, and context. Utilizes a range of digital tools, environments, and platforms. Course Fees: SAP1 \$25; STSA \$30; DL01 \$150.

**ARC 2166. Design 4. (0-14) 6 Credit Hours. (TCCN = ARCH 2604)**

Prerequisites: ARC 2156. Continued development and refinement of design processes through the exploration of the nature and impact of place, city, and culture within the design of human environments. Focuses on the design of place-specific buildings that includes consideration of structure, material, space, form, site, climate, and urban context. Utilizes a range of more advanced digital tools, environments, and platforms in design and representation. 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; DL01 \$75.

**ARC 2413. Global History of Architecture and Urbanism: Prehistory to Medieval. (3-0) 3 Credit Hours. (TCCN = ARCH 1301)**

Introduction to the history of architecture, urbanism, and material culture from prehistory to the late Middle Ages. Explores the varied ways in which architecture reflects and shapes the social, religious, and political concerns of civilizations in the global context. May be applied toward the core curriculum requirement in Creative Arts. Course Fees: LRC1 \$12; SAP1 \$25; STSA \$15; DL01 \$75.

**ARC 2423. Global History of Architecture and Urbanism: Renaissance to 19th Century. (3-0) 3 Credit Hours. (TCCN = ARCH 1302)**

Introduction to the history of architecture, urbanism, and material culture from the Renaissance to the mid-19th century. Explores the varied ways in which architecture reflects and shapes the social, religious, and political concerns of civilizations in the global context. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Course Fees: SAP1 \$25; STSA \$15; DL01 \$75.

**ARC 3113. Advanced Design Visualization. (0-6) 3 Credit Hours.**

Prerequisite: ARC 1313, ARC 1331, and enrollment as an Architecture or an Interior Design major or consent of instructor. Advanced exploration of graphic processes and techniques utilized in the analysis, design, visualization, or construction of human environments. May be repeated for credit when topics vary. Course Fees: SAP1 \$25; STSA \$15; DL01 \$75. Differential Tuition: \$165.

**ARC 3133. Advanced Digital Visualization. (0-6) 3 Credit Hours.**

Prerequisites: ARC 1313 and ARC 1331, or consent of instructor. Advanced exploration of digital graphic design, theory, and communication modes and techniques utilized in the design of human environments for representation, analysis, and visualization. May be repeated for credit when the topics vary. Differential Tuition: \$165.

**ARC 3433. Topics in Architecture and Thought. (3-0) 3 Credit Hours.**

Prerequisites: ARC 2166 or 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. Course Fees: DL01 \$75; SAP1 \$25; STSA \$15. Differential Tuition: \$165.

**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 or IDE 2413 and IDE 2423 is recommended for Architecture and Interior Design majors. Course Fees: SAP1 \$25; STSA \$15; DL01 \$75. Differential Tuition: \$165.

**ARC 4103. Architectural Lighting Design. (3-0) 3 Credit Hours.**

Prerequisite: ARC 2166 or consent of instructor. Considers the aesthetics of light, color and materials, luminaire design, architectural lighting systems, guidelines, energy codes, controls, introduction to lighting simulation, and human visual perception/comfort. Differential Tuition: \$165.

**ARC 4143. Architecture Topics. (3-0) 3 Credit Hours.**

Prerequisites: ARC 2156 and ARC 2166. A course exploring issues in architecture. May be repeated for credit when topics vary. Course Fees: SAP1 \$25; STSA \$15. Differential Tuition: \$165.

**ARC 4156. Building Design Studio. (0-14) 6 Credit Hours.**

Prerequisites: ARC 2166, ARC 2133, and ARC 2233. Advanced architectural design that focuses on building design. Topics may range from building technology, systems, materials and assemblies, to typologies, theories, and processes of design, and from place-making and human experience to the inter-relationship of building, environment, and society. Course may be repeated for credit. No more than 12 credit hours of ARC 4156 may count towards the degree. Course Fees: SAP1 \$25; STSA \$30; DL01 \$150. Differential Tuition: \$330.

**ARC 4183. Environmental Systems. (2-2) 3 Credit Hours.**

Prerequisites: 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. Differential Tuition: \$165.

**ARC 4213. Design and Fabrication Workshop. (0-8) 3 Credit Hours.**

Focuses on essential elements of furniture or product design and fabrication, emphasizing relations to human environments, architectural space, human factors, and the use of materials, processes, and methods. May include digital design technologies and processes. Course Fees: SAP1 \$25; STSA \$15. Differential Tuition: \$165.

**ARC 4223. Topics in Design Computing. (2-2) 3 Credit Hours.**

Prerequisite: ARC 2166 or consent of instructor. Theory-practice seminar course exploring critical, spatial, and philosophical issues related to the impact of digital technologies within human environments. Involves 2-D and 3-D digital media. Course Fees: SAP1 \$25; STSA \$15. Differential Tuition: \$165.

**ARC 4233. Computer Projects in Design. (2-2) 3 Credit Hours.**

Prerequisite: ARC 2166 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 and allied theories 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; DL01 \$75. Differential Tuition: \$165.

**ARC 4246. Building 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; DL01 \$150. Differential Tuition: \$330.

**ARC 4283. Architectural Structures. (2-2) 3 Credit Hours.**

Prerequisites: ARC 2166 and ARC 2133. 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. Differential Tuition: \$165.

**ARC 4333. Practicum/Internship. (0-0) 3 Credit Hours.**

Prerequisites: 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. Course Fees: SAP1 \$25; STSA \$15. Differential Tuition: \$165.

**ARC 4816. International Studies Studio. (0-14) 6 Credit Hours.**

Prerequisites: ARC 2166 or consent of instructor. An architecture or planning studio associated with a study abroad program. (Formerly IDE 4816 in previous catalogs. Credit cannot be earned for both ARC 4816 and IDE 4816.) Course Fees: SAP1 \$25; STSA \$30. Differential Tuition: \$330.

**ARC 4823. International Studies Theory Seminar. (3-0) 3 Credit Hours.**

Prerequisites: ARC 2166 or consent of instructor. A lecture/seminar course associated with a study abroad program; involves field trips. (Formerly IDE 4823 in previous catalogs. Credit cannot be earned for both ARC 4823 and IDE 4823.) Course Fees: SAP1 \$25; STSA \$15. Differential Tuition: \$165.

**ARC 4833. International Studies Drawing Seminar. (0-8) 3 Credit Hours.**

Prerequisites: ARC 2166 or consent of instructor. A drawing course associated with a study abroad program; involves field trips. (Formerly IDE 4833 in previous catalogs. Credit cannot be earned for both ARC 4833 and IDE 4833.) Course Fees: SAP1 \$25; STSA \$15. Differential Tuition: \$165.

**ARC 4843. International Studies History Seminar. (3-0) 3 Credit Hours.**

Prerequisites: ARC 2166 or consent of instructor. A lecture/seminar course associated with a study abroad program; involves field trips. (Formerly IDE 4843 in previous catalogs. Credit cannot be earned for both ARC 4843 and IDE 4843.) Course Fees: SAP1 \$25; STSA \$15. Differential Tuition: \$165.

**ARC 4911. Independent Study. (0-0) 1 Credit Hour.**

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the School Director, 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. Differential Tuition: \$55.

**ARC 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the School Director, 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. Differential Tuition: \$165.

**ARC 4916. Independent Study. (0-0) 6 Credit Hours.**

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the School Director, 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. Differential Tuition: \$330.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$330.

## 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. Foundations I. (0-6) 3 Credit Hours. (TCCN = ARTS 1311)**

Prerequisite: 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 media, with an emphasis on the development of creative and critical skills. This course may not be applied to Core Curriculum requirements. (Formerly: "Two Dimensional Foundations.") Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48; DL01 \$75.

**ART 1013. Foundations II. (0-6) 3 Credit Hours. (TCCN = ARTS 1312)**

Prerequisite: 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 "Three Dimensional Foundations.") Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**ART 1023. Foundations III. (0-6) 3 Credit Hours.**

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 Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48; DL01 \$75.

**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: DL01 \$75; LRC1 \$12; LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**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: DL01 \$75; LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**ART 1213. Drawing I. (0-6) 3 Credit Hours. (TCCN = ARTS 1316)**

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 Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48; DL01 \$75.

**ART 1223. Drawing II. (0-6) 3 Credit Hours. (TCCN = ARTS 1317)**

Prerequisite: ART 1213. 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 Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48; DL01 \$75.

**ART 2113. Painting: Basic. (0-6) 3 Credit Hours. (TCCN = ARTS 2316)**

Prerequisites: ART 1003 and ART 1223. Corequisite: concurrent enrollment with a paired course for art majors. Instruction in basic painting concepts, skills, and materials. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**ART 2223. New Media: Basic. (0-6) 3 Credit Hours.**

Prerequisite: ART 1003 and ART 1023. Corequisite: concurrent enrollment with a paired course for art majors. 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, animation projection, and multimedia installation. Basic digital concepts covered may include Mac OSX operating system techniques, digital capturing of A/V media, non-linear editing, digital and stop-motion animation, storage and backup of media files, and file conversions. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**ART 2313. Photography: Basic. (0-6) 3 Credit Hours. (TCCN = ARTS 2356)**

Prerequisite: ART 1003 and ART 1023. Corequisite: concurrent enrollment with a paired course for art majors. This introductory level course offers instruction on 35mm camera controls, digital color image editing and printing, and black & white analog film and print development. 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 ART 3513 Photography: Intermediate and ART 4533 Photography: Advanced). (Formerly ART 2513 in previous catalogs. Credit cannot be earned for both ART 2513 and ART 2313.) Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**ART 2413. Printmaking: Basic. (0-6) 3 Credit Hours. (TCCN = ARTS 2333)**

Prerequisites: ART 1003 and ART 1213. Corequisite: concurrent enrollment with a paired course for art majors. Introduction to printmaking processes, concepts, and materials. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**ART 2613. Sculpture: Basic. (0-6) 3 Credit Hours. (TCCN = ARTS 2326)**

Prerequisites: ART 1003 and ART 1013. Corequisite: concurrent enrollment with a paired course for art majors. Instruction in basic sculptural concepts and materials. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**ART 2713. Ceramics: Basic. (0-6) 3 Credit Hours. (TCCN = ARTS 2346)**

Prerequisite: ART 1013. Corequisite: concurrent enrollment with a paired course for art majors. 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 Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48; DL01 \$75.

**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 Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48; DL01 \$75.

**ART 3033. Interdisciplinary Contemporary Studio Topics. (0-6) 3 Credit Hours.**

Corequisite: AHC 4353. Prerequisite: Satisfactory completion of 9 semester credit hours of any three 2000-level art courses, and 6 semester credit hours of AHC courses. Interdisciplinary contemporary studio projects generated from lectures, readings and discussion, focusing on critical and cultural issues from contemporary art. Projects encourage collaborative efforts and nontraditional solutions and focus on interdisciplinary practice and conceptual development. Must take corresponding AHC 4353 Art History topics course. B.F.A. degree candidates must take two different topics prior to taking ART 4983. Required of all B.A. in Art and B.F.A. degree candidates. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**ART 3113. Painting: Intermediate. (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. May be repeated for credit. Generally offered: Fall, Spring. Course Fee: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**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 Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**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 Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48; DL01 \$75.

**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. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**ART 3933. Studio Seminar: Professionalism. (0-6) 3 Credit Hours.**

Prerequisites: Completion of Foundation and Lower Division courses. This course covers marketing and business knowledge required of the working artist. Units include: marketing, résumé development, cover letter development, digital documentation of personal artwork, website analyses and choices, gallery conduct and professional protocols, and public speaking. Advanced business skills covered include: various forms of business organization, business law, writing a business plan, taxes, studio safety and insurance, bookkeeping and other recordkeeping, the use of contractual agreements, zoning and other studio considerations, and computer resources and software. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**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 Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.



**ART 4133. Painting: Advanced. (0-6) 3 Credit Hours.**

Prerequisites: ART 3113 and AHC 4113. Development of an individual direction in painting (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. 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. May be repeated for credit. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**ART 4233. Drawing: Advanced. (0-6) 3 Credit Hours.**

Prerequisites: ART 3233 and AHC 4113. 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 Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48; DL01 \$75.

**ART 4313. New Media: Advanced. (0-6) 3 Credit Hours.**

Prerequisite: ART 2223 and AHC 4113. 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 toward the interests and investigations of the student. (Formerly titled "Multimedia Art.") Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**ART 4433. Printmaking: Advanced. (0-6) 3 Credit Hours.**

Prerequisites: ART 2413 and AHC 4113. 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 Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.



**ART 4533. Photography: Advanced. (0-6) 3 Credit Hours.**

Prerequisites: ART 2313 and AHC 4113. 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 Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**ART 4673. Sculpture. (0-6) 3 Credit Hours.**

Prerequisites: 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 their developing artistic direction measured against performance in prior semesters, and, 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 Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**ART 4753. Ceramics: Advanced. (0-6) 3 Credit Hours.**

Prerequisites: 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 their developing artistic direction measured against performance in prior semesters, and, 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 Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48; DL01 \$75.

**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 Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**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 Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**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 Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**ART 4973. B.A. Senior Seminar. (0-6) 3 Credit Hours.**

Prerequisites: B.A. in Art students 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. Course Fees: DL01 \$75; LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48.

**ART 4983. B.F.A. Senior Seminar and Project. (0-6) 3 Credit Hours.**

Prerequisites: Must have completed 15 credit hours in upper-division studio area. This course prepares the student in the professional concerns of aesthetics, art practices, and exhibition. The student will complete 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 Fees: LRLF \$10.27; SAF1 \$45; SAF2 \$150; STLF \$18.48; DL01 \$75.

**ART 4993. B.F.A. Senior Seminar and Exhibition. (3-0) 3 Credit Hours.**

Prerequisite: Must have completed application for graduation for the Bachelor of Fine Arts in Art, and the course must be taken in the last semester of degree completion. Course fees: SAF1 \$45; SAF2 \$150; LRLF \$10.27; STLF \$18.48.

## Art History and Criticism (AHC)

### Art History and Criticism (AHC) Courses

**AHC 1113. Art History I. (3-0) 3 Credit Hours. (TCCN = ARTS 1303)**

A critical and historical study of art and architecture as it developed from Paleolithic times to the 14th century 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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**AHC 1123. Art History II. (3-0) 3 Credit Hours. (TCCN = ARTS 1304)**

A critical and historical study of art and architecture as it developed in Europe and the Americas from the 14th century 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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**AHC 4113. 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 from 1960 to the present. (Formerly AHC 3113. Credit cannot be earned for both AHC 3113 and AHC 4113.) Generally offered: Fall, Spring, Summer. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**AHC 4353. Topics in Art History and Criticism. (3-0) 3 Credit Hours.**

Focus on a specific theoretical and critical issue within the history and criticism of art. Must take corresponding ART 3033 Interdisciplinary Contemporary Studio Topic course. May be repeated for credit when topics vary. Generally offered: Fall, Spring, Summer. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**AHC 4423. 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 AHC 3423. Credit cannot be earned for both AHC 3423 and AHC 4423.) Course Fees: LRLF \$10.27; STLF \$18.48.

**AHC 4523. 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. (Formerly AHC 3523, students cannot receive credit for both AHC 3523 and AHC 4523) Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**AHC 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisite: Permission in writing (departmental 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 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

## 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 \$46.20; MEPA \$18; STSI \$21.60; DL01 \$75.

**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: LRC1 \$4; LRS1 \$15.40; MEPA \$18; STSI \$7.20.

**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 \$46.20; MEPA \$18; STSI \$21.60; DL01 \$75.

**AST 3013. Fundamentals of Astronomy. (3-0) 3 Credit Hours.**

Prerequisites: PHY 1963 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 in previous catalogs. Credit cannot be earned for both AST 3013 and AST 2063.) Generally offered: Summer. Differential Tuition \$150. Course fees: DL01 \$75; MEPA \$18.

**AST 3023. Introduction to Astrophysics. (3-0) 3 Credit Hours.**

Prerequisite: AST 3013 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 in previous catalogs. Credit cannot be earned for more than one of the following: AST 3003, AST 3023 or PHY 4003.) Differential Tuition: \$150. Course Fee: MEPA \$18; DL01 \$75.

**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. Differential Tuition \$150.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

## 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, which includes quantitative data analysis. Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**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: DL01 \$75; LRC1 \$12; LRH1 \$20.54; STSH \$30.81.

**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: DL01 \$75; LRH1 \$20.54; STSH \$30.81.

**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 \$20.54; STSH \$30.81.

**BBL 2243. Bilingual Families, Communities, and Schools: National and Transnational Experiences. (3-0) 3 Credit Hours. (TCCN = ANTH 2351)**

Examines families, communities, and schools to support the achievement of Latinx bilingual children. Explores the historical, political, and social factors influencing access to a quality education for immigrant learners. Topics include: citizenship, cultural preservation, and biculturalism. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences. Course Fees: LRC1 \$12; LRH1 \$20.54; STSH \$30.81.

**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. Taught in Spanish and English. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**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 \$20.54; STSH \$30.81; DL01 \$75.

**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 \$20.54; STSH \$30.81.

**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. Field experience is required. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**BBL 3063. 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. (Same as MAS 3063. Credit cannot be earned for both BBL 3063 and MAS 3063.) Course Fees: LRH1 \$20.54; STSH \$30.81.

**BBL 3123. 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. (BBL 3023 in previous catalogs. Same as MAS 3123. Credit can be earned for only one of the following: BBL 3023, BBL 3123, or MAS 3123.) Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**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 \$20.54; STSH \$30.81; DL01 \$75.

**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. Generally offered: Fall and Spring. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**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, structural and institutional barriers faced by communities of color. Various pedagogical practices will be explored to identify culturally inclusive responses. Field experience required. Generally offered: Fall, Spring, Summer. Course Fees: DL01 \$75; LRH1 \$20.54; STSH \$30.81.

**BBL 3823. Reading Comprehension in Bilingual Settings. (3-0) 3 Credit Hours.**

Prerequisites: Admission to the Bilingual Teacher Certification Program, BBL 3053, and ECE 3143; must be taken concurrently with BBL 4033 and EED 3110 for Bilingual EC–6 Teacher Certification majors. Study of the reading comprehension process, including how textual, reader, psychological, contextual, and cultural factors affect understanding of text for bilingual children. 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 skills in the content areas. Field experience is required. Taught in Spanish. For EC–6 bilingual teacher candidates, this course must be completed with a grade of "B-" or better for it to serve as a prerequisite for CI 4611. Restricted course; advisor code required for registration. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.



**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 \$20.54; STSH \$30.81; DL01 \$75.

**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: Fall, Spring, Summer. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**BBL 4033. Equitable Assessment for Teaching and Learning in Bicultural-Bilingual Classrooms. (3-0) 3 Credit Hours.**

Prerequisites: Admission to the Bilingual Teacher Certification Program, BBL 3053, and ECE 3143; must be taken concurrently with BBL 3823 and EED 3110 for Bilingual EC-6 Teacher Certification majors. A survey of learning and motivation theory and examination of equitable 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. For EC-6 bilingual teacher candidates, this course must be completed with a grade of "B-" or better for it to serve as a prerequisite for CI 4611. Restricted course; advisor code required for registration. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**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 \$20.54; STF1 \$75; STSH \$30.81.

**BBL 4063. Bicultural-Bilingual Approaches to Teaching Social Studies and Integrating Other Content Areas. (3-0) 3 Credit Hours.**

Prerequisites: Admission to the Bilingual Teacher Certification Program, BBL 4073, BBL 4353, and BBL 4403; must be taken concurrently with CI 4621, ESL 3023, and LTED 3813 for Bilingual EC-6 Teacher Certification majors. An investigation of appropriate first language usage in bilingual classrooms, focusing on the different content areas with an emphasis on social studies, appropriate terminology for native language instruction, and the application of different strategies to use with bilingual learners. Field experience is required. Taught in Spanish. For EC-6 bilingual teacher candidates, this course must be completed with a grade of "B-" or better. Restricted course; advisor code required for registration. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**BBL 4073. Bicultural-Bilingual Approaches to Teaching Language Arts. (3-0) 3 Credit Hours.**

Prerequisites: Admission to the Bilingual Teacher Certification Program, BBL 3823, BBL 4033, and successful completion of the ALPS (Assessment of Language Proficiency in Spanish) sequence; must be taken concurrently with BBL 4353, BBL 4403, and CI 4611 for Bilingual EC-6 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 is required. Taught in Spanish. For EC-6 bilingual teacher candidates, this course must be completed with a grade of "B-" or better for it to serve as a prerequisite for CI 4621. Restricted course; advisor code required for registration. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**BBL 4353. Bicultural-Bilingual Approaches to Teaching Science EC-6. (2-2) 3 Credit Hours.**

Prerequisites: Admission to the Bilingual Teacher Certification Program, BBL 3823, BBL 4033, and successful completion of the ALPS (Assessment of Language Proficiency in Spanish) sequence; for Bilingual EC-6 Teacher Certification majors: must be taken concurrently with BBL 4073, BBL 4403, and CI 4611. 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. Field experience is required. Taught in Spanish. For EC-6 bilingual teacher candidates, this course must be completed with a grade of "B-" or better for it to serve as a prerequisite for CI 4621. Restricted course; advisor code required for registration. Same as CI 4353. Credit cannot be earned for both CI 4353 and BBL 4353. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**BBL 4403. Bicultural-Bilingual Approaches to Teaching Mathematics EC-6. (3-0) 3 Credit Hours.**

Prerequisites: Admission to the Bilingual Teacher Certification Program, BBL 3823, BBL 4033, and successful completion of the ALPS (Assessment of Language Proficiency in Spanish) sequence; must be taken concurrently with BBL 4073, BBL 4353, and CI 4611 for Bilingual 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 experience is required. Taught in Spanish. For EC-6 bilingual teacher candidates, this course must be completed with a grade of "B-" or better for it to serve as a prerequisite for CI 4621. Restricted course; advisor code required for registration. Same as CI 4403. Credit cannot be earned for both CI 4403 and BBL 4403. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.



**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 \$30.81.

**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 \$20.54; STSH \$30.81.

## 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. Same as NDRB 1033. Credit cannot be earned for both NDRB 1033 and BIO 1033. Generally offered: Fall, Spring. Course fees: LRC1 \$12; LRS1 \$46.20; DL01 \$75; STSI \$21.60.

**BIO 1053. Introductory Microbiology. (3-0) 3 Credit Hours. (TCCN = BIOL 2320)**

Prerequisite: BIO 1203 (formerly BIO 1404) or BIO 1233. A general study of microorganisms, their characteristics, isolation, growth, and importance in nature, industry, public health, and human disease. (Formerly AHS 1053. Same as MMI 1053. Credit can only be earned for one of the following courses: BIO 1053, AHS 1053, or MMI 1053. BIO 1053 cannot substitute for BIO 3713.) Generally offered: Fall, Spring. Course Fees: LRS1 \$46.20; STSI \$21.60.

**BIO 1061. Introductory Microbiology Laboratory. (0-3) 1 Credit Hour. (TCCN = BIOL 2120)**

Prerequisites: BIO 1233 or BIO 1203 (formerly 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 in previous catalogs and same as MMI 1061. Credit cannot be earned for more than one of BIO 1061, AHS 1061, or MMI 1061. BIO 1061 cannot substitute for BIO 3722.) Generally offered: Fall, Spring, Summer. Course Fees: IUS1 \$15; L001 \$30; LRS1 \$15.40; STSI \$7.20; DL01 \$25.

**BIO 1173. Introduction to Computational Biology. (3-0) 3 Credit Hours.**

Prerequisite: MAT 1193. Introduction to computation for biologists, using a modern, open-source programming language such as Python or R. Programming concepts, including data types, functions, loops, and logic are explored within a context of realistic biological problems and data sets. Basic data visualization techniques are also explored. Generally offered: Fall, Spring, Summer. IUS1 \$15; LRS1 \$46.20; STSI \$21.60.

**BIO 1201. Biosciences I Laboratory for Science Majors. (0-3) 1 Credit Hour. (TCCN = BIOL 1106)**

Prerequisite: Completion of or concurrent enrollment in one of the following: STA 1053, MAT 1023, MAT 1073, or higher. Corequisite: BIO 1203 for biology majors. This laboratory-based course accompanies BIO 1203, Biosciences I for Science Majors. Laboratory activities will reinforce the fundamental principles of living organisms, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Study and examination of the concepts of cytology, reproduction, genetics, and scientific reasoning are included. Course Fees: IUS1 \$15; L001 \$30; LRS1 \$15.40; STSI \$7.20.

**BIO 1203. Biosciences I for Science Majors. (3-0) 3 Credit Hours. (TCCN = BIOL 1306)**

Prerequisite: Completion of or concurrent enrollment in one of the following: STA 1053, MAT 1023, MAT 1073, or higher. Corequisite: BIO 1201 is required for biology majors. 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. May be applied toward the Core Curriculum requirement in Life and Physical Sciences. (Formerly BIO 1113 and BIO 1404 in previous catalogs. Credit can only be earned for one of the following courses: BIO 1203, BIO 1404, or BIO 1113). Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRS1 \$46.20; STSI \$21.60.

**BIO 1221. Biosciences II Laboratory for Science Majors. (0-3) 1 Credit Hour. (TCCN = BIOL 1107)**

Prerequisite: BIO 1203 and BIO 1201 (or equivalent). Corequisite: BIO 1223 is required for biology majors. This laboratory-based course accompanies BIO 1223, Biosciences II for Science Majors. Laboratory activities will reinforce study of the diversity and classification of life, including animals, plants, protists, fungi, and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals. Course Fees: IUS1 \$15; L001 \$30; LRS1 \$15.40; STSI \$7.20.

**BIO 1223. Biosciences II for Science Majors. (3-0) 3 Credit Hours. (TCCN = BIOL 1307)**

Prerequisite: BIO 1203. Concurrent enrollment in BIO 1221 is required for biology majors. This is the second course in a two-part introduction to the science of biology for students majoring in biology or interested in pre-health professions. Topics include evolutionary biology, biotic diversity, plant structure and function, and ecology. May be applied toward the Core Curriculum requirement in Life and Physical Sciences. (Course formerly listed as BIO 1143, BIO 1413, and BIO 1414 in previous catalogs. 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: LRC1 \$12; LRS1 \$46.20; STSI \$21.60.

**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 \$46.20; STSI \$21.60; DL01 \$75.

**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: DL01 \$75; LRC1 \$12; LRS1 \$46.20, STSI \$21.60.

**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 in previous catalogs. Credit cannot be earned for both BIO 2003 and BIO 1023.) Generally offered: Spring. Course Fees: LRS1 \$46.20; STSI \$21.60.

**BIO 2043. Nutrition. (3-0) 3 Credit Hours. (TCCN = BIOL 1322)**

Prerequisite: BIO 1233 or BIO 1203 (formerly 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 in previous catalogs. Same as NDT 2043. Credit cannot be earned for more than one of the following courses: AHS 2043, BIO 2043, or NDT 2043.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$46.20; STSI \$21.60; DL01 \$75.

**BIO 2051. Human Anatomy and Physiology Laboratory I. (0-3) 1 Credit Hour. (TCCN = BIOL 2101)**

Prerequisites: BIO 1203 or BIO 1233; previous or concurrent enrollment in BIO 2053 is required. This laboratory supplements the BIO 2053 lecture. Designed for pre-nursing and allied health students. Not recommended for pre-medical and pre-dental students. 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. (Same as BIO 3642. Credit cannot be earned for both BIO 2051 and BIO 3642. BIO 2051 cannot substitute for BIO 3422.) Generally offered: Fall, Spring, Summer. Course Fees: IUS1 \$15; L001 \$30; LRS1 \$15.40; STSI \$7.20; DL01 \$25.

**BIO 2053. Human Anatomy and Physiology I. (3-0) 3 Credit Hours. (TCCN = BIOL 2301)**

Prerequisite: BIO 1203 or BIO 1233; concurrent enrollment in BIO 2051 is required. Designed for pre-nursing and allied health students. Not recommended for pre-medical and pre-dental students. 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. (Same as BIO 3643. Credit cannot be earned for both BIO 2053 and BIO 3643. BIO 2053 cannot substitute for BIO 3413.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$46.20; STSI \$21.60; DL01 \$75.

**BIO 2061. Human Anatomy and Physiology Laboratory II. (0-3) 1 Credit Hour. (TCCN = BIOL 2102)**

Prerequisites: BIO 2051; previous or concurrent enrollment in BIO 2063 is required. Designed for pre-nursing and allied health students. Not recommended for pre-medical and pre-dental students. 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. (Same as BIO 3652. Credit cannot be earned for both BIO 2061 and BIO 3652. BIO 2061 cannot substitute for BIO 3422.) Generally offered: Fall, Spring, Summer. Course Fees: IUS1 \$15; L001 \$30; LRS1 \$15.40; STSI \$7.20; DL01 \$25.

**BIO 2063. Human Anatomy and Physiology II. (3-0) 3 Credit Hours. (TCCN = BIOL 2302)**

Prerequisite: BIO 2053; concurrent enrollment in BIO 2061 is required. Designed for pre-nursing and allied health students. Not recommended for pre-medical and pre-dental students. 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. (Same as BIO 3653. Credit cannot be earned for both BIO 2063 and BIO 3653. BIO 2063 cannot substitute for BIO 3413.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$46.20; STSI \$21.60; DL01 \$75.

**BIO 2073. Sophomore Research Experience. (1-4) 3 Credit Hours.**

Prerequisite: BIO 1203, BIO 1201, BIO 1223, and BIO 1221 with a grade of at least a 'C-'. Restricted to students who have completed 30 or more hours. The organizing principles of biology (such as molecular and cellular functions, reproduction, development, homeostatic mechanisms, and organismal physiology and behavior) are used within a comparative and evolutionary framework to train students in modern laboratory techniques, bioinformatics, experimental design, and interpretation of results. Generally offered: Fall and Spring.

**BIO 2313. Genetics. (3-0) 3 Credit Hours. (TCCN = BIOL 2316)**

Prerequisites: BIO 1223 and completion or concurrent enrollment in one of the following: MAT 1093 (or higher) or STA 1053. 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 \$46.20; STSI \$21.60; DL01 \$75.

**BIO 2362. Molecular Genetics Laboratory. (1-4) 2 Credit Hours.**

Prerequisites: BIO 1223, CHE 1103, and completion or concurrent enrollment in MAT 1093 or higher. A study of techniques used to investigate the inheritance of genetic information at the molecular level. Students will gain an understanding of the structure, function and regulation of genes. Techniques will include; nucleic acid biochemistry, molecular cloning mutagenesis and bioinformatics. (Formerly BIO 2322. Credit cannot be earned for both BIO 2362 and BIO 2322.) Generally offered: Fall, Spring, Summer. Course Fees: L001 \$30; LRS1 \$30.80; STSI \$14.40; DL01 \$50.

**BIO 2953. Special Topics 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 Topics may be repeated for credit when the topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree, regardless of discipline. No more than 6 semester credit hours of BIO 2953, BIO 4951, or BIO 4953 can be applied to a Bachelor of Science degree in Biology or Microbiology and Immunology. Course Fees: LRS1 \$46.20; STSI \$21.60.

**BIO 2992. Medical Terminology. (2-0) 2 Credit Hours.**

Prerequisite: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. This course covers the language of medicine that will be used as a foundation for understanding upper-division undergraduate and graduate-level courses to follow. It will include pronunciation, definition, usage, and origins of medical terms. Medical terms presented will be used to identify signs, symptoms, diagnoses, and treatment options for selected pathologies. With these skills the student will be able to effectively interpret and communicate in a healthcare setting. Generally offered: Fall. Course Fees: LRS1 \$30.80; STSI \$14.40.

**BIO 3013. Introduction to Clinical Medicine and Pathology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203, BIO 1223, BIO 2313, and BIO 2992. Introduction to concepts of human disease, diagnosis, and underlying pathology. Same as MMI 3013. Credit cannot be earned for both BIO 3013 and MMI 3013. Generally offered: Fall. Differential Tuition: \$150.

**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. (Same as UTE 3043. Credit cannot be earned for both BIO 3043 and UTE 3043.) Generally offered: Fall. Spring. Differential Tuition \$150.

**BIO 3053. Sophomore Research Experience. (1-4) 3 Credit Hours.**

Prerequisite: BIO 1203, BIO 1201, BIO 1223, and BIO 1221 with a grade of at least a 'C-'. Restricted to students who have completed 30 or more hours. The organizing principles of biology (such as molecular and cellular functions, reproduction, development, homeostatic mechanisms, and organismal physiology and behavior) are used within a comparative and evolutionary framework to train students in modern laboratory techniques, bioinformatics, experimental design, and interpretation of results. Generally offered: Spring. Differential Tuition: \$150.

**BIO 3073. Environmental Rhetoric and Technical Communication. (3-0) 3 Credit Hours.**

Prerequisite: ENG 2413. Restricted to students who have completed 60 or more hours. This course focuses on rhetoric, ecology, and technical/scientific communication in order to develop interdisciplinary, team-based, and applied research projects. This advanced professional writing and rhetoric course will examine ecological communications as an archetypal example of specialized technical communication. (Same as ES 3073. Credit cannot be earned for both BIO 3073 and ES 3073.) Generally offered: Fall, Spring. Differential tuition: \$150.

**BIO 3113. Ichthyology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. 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. (Same as ES 3113. Credit cannot be earned for both BIO 3113 and ES 3113.) Generally offered: Spring. Differential Tuition: \$150. Course Fees: IUS1 \$15; STFB \$40.

**BIO 3123. Comparative Vertebrate Anatomy. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. Not recommended for pre-medical and pre-dental students. A comparative analysis of developmental and adult anatomy of vertebrates (including humans). Emphasis is placed on phylogenetic relationships between form, function, and evolution. Generally offered: Spring. Differential Tuition: \$150. Course fee: DL01 \$75.

**BIO 3213. Animal Behavior. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. 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. (Same as NDRB 3213. Credit cannot be earned for both NDRB 3213 and BIO 3213.) Generally offered: Fall, Summer. Spring. Differential Tuition \$150. Course fee: DL01 \$75.

**BIO 3233. Survey of Insects. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. Course includes an introduction to basic insect biology, as well as in-depth coverage of insect systematics, including major orders and families. (Same as ES 3233. Credit cannot be earned for both BIO 3233 and ES 3233.) Generally offered: Spring even years. Differential Tuition: \$150.

**BIO 3253. R Coding in Environmental Science and Ecology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1173 or CS 1173 with a grade of at least a 'C-'. This course will teach the management of environmental and ecological data using Program R. The focus will be on the structure and linguistics of data in R and how to integrate R into a data science workflow. (Same as ES 3253. Credit cannot be earned for both BIO 3253 and ES 3253.) Generally offered: Fall. Differential tuition: \$150. Course fee: IUS1 \$15.

**BIO 3263. The Woody Plants. (2-3) 3 Credit Hours.**

Prerequisites: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more 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. Differential Tuition: \$150. Course Fee: STFB \$40.

**BIO 3273. Biology of Flowering Plants. (2-3) 3 Credit Hours.**

Prerequisites: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more 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. Differential Tuition \$150.

**BIO 3283. Principles of Ecology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1223. A study of the interaction of organisms with their environment, with focus on ecological principles, adaptations of organisms, environmental pollution, and principles of conservation. (Same as ES 3033. Credit cannot be earned for both BIO 3283 and ES 3033.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$150.



**BIO 3292. Principles of Ecology Laboratory. (0-6) 2 Credit Hours.**

Prerequisites: BIO 1223 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. (Same as ES 3042. Credit cannot be earned for both BIO 3292 and ES 3042.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$100. Course Fees: IUS1 \$15; L001 \$30; STFB \$40.

**BIO 3293. Mammalogy. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. A course covering various aspects of the biology of mammals, including anatomy, physiology, systematics, evolution, behavior, ecology, and biogeography. Field trips may be required. (Same as ES 3173. Credit cannot be earned for both BIO 3293 and ES 3173.) Generally offered in Fall of odd years. Differential Tuition: \$150. Course Fee: IUS1 \$15.

**BIO 3303. Entomology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. A course covering various aspects of the biology of insects, including anatomy, physiology, evolution, behavior, ecology, and biogeography. (Same as ES 3183. Credit cannot be earned for both BIO 3303 and ES 3183.) Generally offered: Spring odd years. Field trips may be required. Differential Tuition: \$150.

**BIO 3323. Evolution. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203, BIO 1223, and BIO 2313 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. A discussion of theories and possible mechanisms for evolutionary changes at various levels of organization. (Same as MMI 3323. Credit cannot be earned for both BIO 3323 and MMI 3323.) Generally offered: Spring. Differential Tuition: \$150. Course fee: DL01 \$75.

**BIO 3333. Plants and Society. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. 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 listed as BIO 2343 in previous catalogs. Credit cannot be earned for both BIO 3333 and BIO 2343.) Generally offered: Spring. Differential Tuition \$150.

**BIO 3343. Plant Cell Biology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. 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. Differential Tuition \$150.

**BIO 3353. Herpetology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. A course covering various aspects of the biology of amphibians and reptiles, including anatomy, physiology, systematics, evolution, behavior, ecology, and biogeography. (Same as ES 3193. Credit cannot be earned for both BIO 3353 and ES 3193.) Field trips may be required. Differential Tuition: \$150. Course Fee: IUS1 \$15.

**BIO 3362. Molecular Biochemistry Laboratory. (1-4) 2 Credit Hours.**

Prerequisites: BIO 2362, CHE 1103, and completion or concurrent enrollment in MAT 1093 or higher. A study of the microscopic, biochemical and molecular techniques used to investigate biochemical reactions and the structure and function of proteins in cells and tissues. Techniques will include; protein extraction, protein characterization, enzyme kinetics, chromatography, western blotting, Immunofluorescence and bioinformatics. (Same as BIO 3522, BIO 3822, NDRB 3362, and BME 3114. Credit cannot be earned for both BIO 3362 and any of the following: BIO 3522, BIO 3822, NDRB 3362, or BME 3114.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$100. Course Fees: IUS1 \$15; L001 \$30; DL01 \$50.

**BIO 3382. Sophomore Research Initiative Peer Mentor. (0-0) 2 Credit Hours.**

Prerequisites: BIO 3362, completion of the Sophomore Research Initiative, and instructor consent. Student will be a peer mentor for students in the Sophomore Research Initiative (SRI) in a laboratory in which they were previously enrolled, and which they completed with a grade of "A" or "B". Students will work under the guidance of a graduate teaching assistant or laboratory coordinator. Besides assisting in the laboratory, students will be expected to attend group meetings associated with the laboratory, help with setup of the laboratories and complete a written assignment at the end of the semester. Students will not have any student grading responsibility. Cannot be repeated for credit. Differential Tuition: \$100. Course Fees: IUS1 \$15; L001 \$30.

**BIO 3413. Physiology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Physiology of systems of higher animals and plants, including circulation, regulation of body fluids, nervous system, muscle, sensory systems, and photosynthesis. Generally offered: Fall, Spring, Summer. Differential Tuition: \$150. Course fee: DL01 \$75.

**BIO 3422. Physiology Laboratory. (1-5) 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. Generally offered: Fall, Spring, Summer. Differential Tuition: \$100. Course Fees: DL01 \$50; IUS1 \$15; L001 \$30.

**BIO 3433. Neurobiology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1203 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. Anatomy and physiology of nervous systems; the mechanisms of neuronal functions. Same as NDRB 3433. Credit cannot be earned for both BIO 3433 and NDRB 3433. Generally offered: Fall, Spring. Differential Tuition: \$150. Course fee: DL01 \$75.

**BIO 3442. Neurobiology Laboratory. (0-4) 2 Credit Hours.**

Prerequisites: BIO 1203 with a grade of at least a C, and completion of or concurrent enrollment in BIO 3433. Restricted to students who have completed 60 or more hours. A laboratory course emphasizing principles presented in BIO 3433. Same as NDRB 3442. Credit cannot be earned for both BIO 3442 and NDRB 3442. Generally offered: Fall, Spring. Differential Tuition: \$100. Course Fees: IUS1 \$15; L001 \$30; DL01 \$50.

**BIO 3513. Biochemistry. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203, BIO 1223, and CHE 3643 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. Introduction to biochemistry: amino acids, protein structure, enzymes, lipids, metabolism, nucleic acid structure, bioenergetics, and carbohydrates. (Same as CHE 4303. Credit cannot be earned for both BIO 3513 and CHE 4303.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$150. Course fee: DL01 \$75.

**BIO 3523. Advanced Computational Biology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1173 or CS 1173 with a grade of at least a 'C-'. Development and application of computational approaches to biological questions, with focus on formulating interdisciplinary problems as computational problems and then solving these problems using algorithmic techniques. Generally offered: Spring. Differential tuition: \$150. Course fee: IUS1 \$15.

**BIO 3623. Neuropsychopharmacology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. 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. (Same as NDRB 3623. Credit cannot be earned for both BIO 3623 and NDRB 3623.) Generally offered: Fall. Differential Tuition: \$150. Course fee: DL01 \$75.

**BIO 3642. Clinical Anatomy Laboratory I. (0-6) 2 Credit Hours.**

Prerequisite: BIO 2992 and BIO 3413 with a grade of at least a 'C-'. Concurrent enrollment in 3643 required. Designed for pre-medical and pre-dental students. Not recommended for pre-nursing and allied health students. This is the first laboratory course in a two part series that teaches the structure of the human body at a level required for clinical medicine. Same as BIO 2051. Credit cannot be earned for both BIO 2051 and BIO 3642. Generally offered: Fall. Differential Tuition: \$100. Course Fees: IUS1 \$15; L001 \$30.

**BIO 3643. Advanced Physiology I. (3-0) 3 Credit Hours.**

Prerequisite: BIO 2992 and BIO 3413 with a grade of at least a 'C-'. Concurrent enrollment in 3642. This is the first lecture course in a two part series that teaches the structure and functions of the human body at a level required for clinical medicine. The course covers normal physiology, as well as selected diseases. This course will cover foundational basics on the cell, body fluids, the autonomic nervous system, and endocrine system. The ultimate goal is for students to develop an understanding of the integrated functions of the normal body and "problem solving" and "critical thinking" skills in evaluating clinical situations. Same as BIO 2053. Credit cannot be earned for BIO 2053 and BIO 3643. Generally offered: Fall. Differential Tuition: \$150.

**BIO 3652. Clinical Anatomy Laboratory II. (0-6) 2 Credit Hours.**

Prerequisite: BIO 3643 and BIO 3642 with a grade of at least a 'C-'. Concurrent enrollment in BIO 3653 required. Designed for pre-medical and pre-dental students. Not recommended for pre-nursing and allied health students. This is the second laboratory course in a two part series that teaches the structure of the human body at a level required for clinical medicine. Same as BIO 2061. Credit cannot be earned for both BIO 2061 and BIO 3652. Generally offered: Spring. Differential Tuition: \$100. Course Fees: IUS1 \$15; L001 \$30.

**BIO 3653. Advanced Physiology II. (3-0) 3 Credit Hours.**

Prerequisite: BIO 3643 and BIO 3642 with a grade of at least a 'C-'. Designed for pre-medical and pre-dental students. Not recommended for pre-nursing and allied health students. This is the second lecture course in a two part series that teaches the structure and functions of the human body at a level required for clinical medicine. The course covers cardiovascular, respiratory, renal, and gastrointestinal; with a final integration section which applies the physiological principles learned to special situations. The ultimate goal is for students to develop an understanding of the integrated functions of the normal body and "problem solving" and "critical thinking" skills in evaluating clinical situations. Same as BIO 2063. Credit cannot be earned for BIO 2063 and BIO 3653. Generally offered: Spring. Differential Tuition: \$150.

**BIO 3663. Human Embryology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203, BIO 1223, and BIO 2313 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. 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. Same as NDRB 3663. Credit cannot be earned for both BIO 3663 and NDRB 3663. Generally offered: Fall. Differential Tuition: \$150.

**BIO 3713. Microbiology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1203 and BIO 1223; restricted to students who have completed 60 or more hours; concurrent enrollment in MMI 3722 is recommended for students intending to complete both courses. A comprehensive study of microorganisms, including their composition, morphology, growth, metabolism, classification, ecology, and significance in disease. BIO 1053 cannot substitute for BIO 3713. (Same as MMI 3713. Credit cannot be earned for MMI 3713, BIO 3713, and ES 3103.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$150. Course fee: DL01 \$75.

**BIO 3722. Microbiology Laboratory. (0-6) 2 Credit Hours.**

Prerequisites: BIO 1203 and BIO 1223 with at least a C-, and completion of or concurrent enrollment in BIO 3713. Restricted to students with 60 or more hours. 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. Same as MMI 3722. Credit cannot be earned for both BIO 3722 and MMI 3722. Generally offered: Fall, Spring, Summer. Differential Tuition: \$100. Course Fees: IUS1 \$15; L001 \$30; DL01 \$50.

**BIO 3743. Bacteriology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 2313 and BIO 3713 with a grade of at least a 'C-'. Restricted to students with at least 60 hours. 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. Same as MMI 3743. Credit cannot be earned for both BIO 3743 and MMI 3743. Generally offered: Fall. Differential Tuition: \$150. Course fee: DL01 \$75.

**BIO 3813. Cell Biology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203, BIO 1223, and BIO 2313 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. BIO 3513 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. (Same as BME 3114 and NDRB 3813. Credit cannot be earned for both BIO 3813 and BME 3114 or BIO 3813 and NDRB 3813.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$150. Course fee: DL01 \$75.



**BIO 3913. Molecular Biology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203, BIO 1223, and BIO 2313 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. BIO 3513 is recommended. A study of nucleotides, DNA, replication, recombination, RNA, transcription, genetic code, translation, genomes, and chromosomes. Same as NDRB 3913. Credit cannot be earned for both BIO 3913 and NDRB 3913. Generally offered: Fall, Spring. Differential Tuition: \$150. Course fee: DL01 \$75.

**BIO 3933. Principles of Cancer Biology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. 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. Same as NDRB 3993. Credit cannot be earned for both BIO 3933 and NDRB 3993. Generally offered: Fall, Spring. Differential Tuition \$150.

**BIO 4033. Conservation Biology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 3283 with a grade of at least a 'C-'. 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. Differential Tuition: \$150. Course fee: DL01 \$75.

**BIO 4043. Desert Biology. (2-3) 3 Credit Hours.**

Prerequisites: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours, or consent of instructor. Concurrent enrollment in BIO 4233 and BIO 4241 required. 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. (Same as ES 4123. Credit cannot be earned for both BIO 4043 and ES 4123.) Generally offered: Summer. Differential Tuition \$150.

**BIO 4053. Wildlife Ecology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 3283 with a grade of at least a 'C-'. Major environmental factors affecting wildlife; structure and behavior of wildlife populations; regional wildlife communities and their conservation. 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. Differential Tuition: \$150.

**BIO 4063. Ornithology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. 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. Differential Tuition \$150.

**BIO 4143. Developmental Biology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203, BIO 1223, and BIO 2313 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. 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 listed as BIO 3143 in previous catalogs. Same as NDRB 4143. Credit cannot be earned for both BIO 4143 and BIO 3143 or BIO 4143 and NDRB 4143.) Generally offered: Fall. Differential Tuition: \$150.

**BIO 4233. Field Biology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203 and BIO 1223 with a grade of at least a 'C-'; restricted to students who have completed 60 or more hours, or consent of instructor. Corequisites: BIO 4241 and BIO 4033. A field-oriented course offering the opportunity for practical experience observing, collecting, and identifying Texas plants and animals. (Same as ES 4133. Credit cannot be earned for both BIO 4233 and ES 4133.) Generally offered: Summer. Differential Tuition \$150. Course Fees: IUS1 \$15; L001 \$30.

**BIO 4241. Field Biology Laboratory. (0-3) 1 Credit Hour.**

Prerequisites: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours, or consent of instructor. Concurrent enrollment in BIO 4233 and BIO 4043 required. 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. Differential Tuition \$50. Course Fees: IUS1 \$15; L001 \$30.

**BIO 4263. River Ecosystems. (3-0) 3 Credit Hours.**

Prerequisite: BIO 3283 with a grade of at least a 'C-'. This course examines the physical, chemical, and biological factors that determine biodiversity and the structure and function of aquatic and riparian ecosystems. Key ecological and hydrogeomorphology concepts and their application to environmental concerns are covered. Same as ES 4263. Credit cannot be earned for both BIO 4263 and ES 4263. Generally offered: Spring of even years. Differential Tuition: \$150.

**BIO 4273. Fish Ecology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 3283 with a grade of at least a 'C-'. A study of the biotic and abiotic factors affecting the diversity and distribution of fishes, with a focus on North American freshwater fishes. This course will include (1) lectures and discussions covering patterns and processes in fish ecology; and (2) a collaborative research project covering computational techniques used in fish ecology. Same as ES 4273. Credit cannot be earned for both BIO 4273 and ES 4273. Generally offered: Fall of even years. Differential Tuition: \$150.

**BIO 4283. Plant-Soil-Microbe Interactions. (3-0) 3 Credit Hours.**

Prerequisite: BIO 3283 with a grade of at least a 'C-'. This course focuses on the microbial groups which live in soils and among plant species and methodologies used to understand their interaction. Same as ES 4283. Credit cannot be earned for both BIO 4283 and ES 4283. Generally offered: Fall of even years. Differential Tuition: \$150.

**BIO 4303. Aquatic Ecology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 3283 with a grade of at least a 'C'. Restricted to students who have completed 60 or more hours. 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. Same as ES 4023. Credit cannot be earned for both BIO 4303 and ES 4023. Generally offered: Spring. Differential Tuition: \$150. Course Fee: STFB \$40.

**BIO 4313. Plant Physiological Ecology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 3283 with a grade of 'C' or better. Survey of physiological approaches to understanding plant-environment interactions from the functional perspective. Same as ES 4033. Credit cannot be earned for both BIO 4313 and ES 4033. Generally offered: Fall of odd years. Differential Tuition: \$150.

**BIO 4323. 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. Same as ES 4233. Credit cannot be offered for both BIO 4323 and ES 4233. Generally offered: Spring. Differential Tuition: \$150.

**BIO 4453. Endocrinology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203, BIO 1223, and BIO 2313 with a grade of at least a 'C'. Restricted to students who have completed 60 or more hours. 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). Same as NDRB 4453. Credit cannot be earned for BIO 4453 and NDRB 4453. Generally offered: Fall. Differential Tuition: \$150. Course fee: DL01 \$75.

**BIO 4473. Advanced Clinical Medicine and Pathology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 3013 with a grade of at least a 'C'. Advanced concepts of human disease, diagnosis, and underlying pathology. Same as MMI 4473. Credit cannot be earned for both BIO 4473 and MMI 4473. Generally offered: Spring. Differential Tuition \$150.

**BIO 4483. Medical Mycology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 3713 and BIO 3722 with a grade of at least a 'C'. Comprehensive study of causative agents, pathogenesis, and treatment of human fungal diseases. Same as MMI 4483. Credit cannot be earned for both BIO 4483 and MMI 4483. Generally offered: Spring. Differential Tuition \$150. Course fee: DL01 \$75.

**BIO 4583. Emergent Properties of Neural Circuits. (3-0) 3 Credit Hours.**

Prerequisite: BIO 3433 with a grade of at least a 'C'. Principles of cellular neurophysiology and neuroanatomy are used to explore the computational operations performed by neurons and networks of neurons. Same as NDRB 4583. Credit cannot be earned for both BIO 4583 and NDRB 4583. Generally offered: Spring. Differential Tuition: \$150.

**BIO 4643. Medicinal Plants. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203 and BIO 1223 with a grade of at least a 'C'. Restricted to students who have completed 60 or more hours. BIO 3513 is recommended. Ethnobotanical, biochemical, and pharmacological aspects of some of our most important plant-derived drugs. Generally offered: Fall. Differential Tuition: \$150.

**BIO 4723. Virology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 2313 and BIO 3513 with a grade of at least a 'C'. 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. Same as MMI 4723. Credit cannot be earned for both BIO 4723 and MMI 4723. Generally offered: Fall. Differential Tuition: \$150.

**BIO 4743. Immunology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203, BIO 1223, and BIO 2313 with a grade of at least a 'C'; restricted to students who have completed 60 or more hours; 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. Same as MMI 4743. Credit cannot be earned for both BIO 4743 and MMI 4743. Generally offered: Fall, Spring, Summer. Differential Tuition: \$150.

**BIO 4752. Immunology Laboratory. (0-4) 2 Credit Hours.**

Prerequisites: BIO 1203, BIO 1223, BIO 2313, BIO 2362 (or BIO 2322 in previous catalogs), and completion of or concurrent enrollment in BIO 4743, all with a grade of at least a 'C'. Restricted to students who have completed 60 or more hours. Laboratory applications of principles presented in BIO 4743. (Formerly listed as BIO 4751 in previous catalogs. Same as MMI 4752. Credit cannot be earned for both BIO 4752 and MMI 4752.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$100. Course Fees: IUS1 \$15; L001 \$30; DL01 \$50.

**BIO 4763. Parasitology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203, BIO 1223, and BIO 2313 with a grade of at least a 'C'. Restricted to students who have completed 60 or more hours. 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. Same as MMI 4763. Credit cannot be earned for both BIO 4763 and MMI 4763. Generally offered: Spring. Differential Tuition \$150. Course fee: DL01 \$75.

**BIO 4773. Microbial Ecology and Metagenomics. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1053 and BIO 2313. This course will provide an overview of microbial ecology principles and application of microbial ecological approaches to understand microbial structure and function across environments, including the soil, freshwater and marine environments. The course will focus its content on prokaryotes and fungi. An emphasis in this course will be on learning foundational concepts in microbiome science and applying concepts to laboratory and computational techniques through hands-on experiments. Same as MMI 4773. Credit cannot be earned for both BIO 4773 and MMI 4773. Generally offered: Fall, Spring. Differential Tuition: \$150.

**BIO 4783. Microbial Genomes and Virulence. (3-0) 3 Credit Hours.**

Prerequisite: BIO 2313. MMI 3713 is recommended. This course is focused on microbial pathogens of medical importance. Insights into the genome makeup and virulence inventories of pathogens is essential for understanding their biology, epidemiology, human diseases they cause, and trajectories of pathogen evolution. Topics covered include the basic concepts of genome sequencing, pathogen-specific virulence traits, and the role of genetic exchange in genome evolution, speciation, fitness, and pathogenicity. Same as MMI 4783. Credit cannot be earned for both BIO 4783 and MMI 4783. Generally offered: Spring. Differential Tuition \$150. Course fee: DL01 \$75.

**BIO 4813. Brain and Behavior. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203 and BIO 1223 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours.

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. Same as NDRB 4813. Credit cannot be earned for more than one of BIO 4813, PSY 4183, or NDRB 4813. Generally offered: Fall. Differential Tuition: \$150. Course fee: DL01 \$75.

**BIO 4823. Cognitive Neuroscience. (3-0) 3 Credit Hours.**

Prerequisite: BIO 3433 or BIO 4813 or PSY 4183, with a grade of at least a C-, 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. Same as NDRB 4823. Credit cannot be earned for both BIO 4823 and NDRB 4823. Generally offered: Spring. Differential Tuition \$150.

**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. Differential Tuition: \$50.

**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. Differential Tuition: \$100.

**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. Differential Tuition: \$150.

**BIO 4923. Laboratory Research: Biology Concentrations. (0-0) 3 Credit Hours.**

Prerequisite: Permission in writing (form available in the Biology Department Office) from the faculty mentor, the student's advisor, the Department Chair, and the Dean of the College. Supervised laboratory research mentored by a faculty member engaged in active research within the student's designated area of concentration. May be repeated for credit, but no more than 6 semester credit hours will apply to a bachelor's degree. Only 6 semester credit hours of BIO 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. Differential Tuition: \$150.

**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. No more than 6 semester credit hours of BIO 2953, BIO 4951, or BIO 4953 can be applied to a B.S. degree in Biology or Microbiology and Immunology. Differential Tuition: \$50.

**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. No more than 6 semester hours of BIO 2953, BIO 4951, or BIO 4953 can be applied to a B.S. degree in Biology or Microbiology and Immunology. Generally offered: Fall, Spring, Summer. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$50. Course fee: DL01 \$25.

**BIO 4993. Honors Research. (0-0) 3 Credit Hours.**

Prerequisite: Students taking this course must have approval by the Honors College or College Honors Committee, must be a Biology major, must be either a member of the Honors College or pursuing College of Sciences Honors, and must be in the last two semesters of study. 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. Differential Tuition: \$150.

## Biomedical Engineering (BME)

**NOTE: All prerequisites for Biomedical Engineering (BME) courses must be completed with a grade of "C-" or better.**

### Biomedical Engineering (BME) Courses

**BME 1002. Introduction to Biomedical Engineering. (2-0) 2 Credit Hours.**

Prerequisites: A grade of "C-" or better, or concurrent enrollment in BIO 1203, BIO 1201, and MAT 1214. This course is an introduction to the interdisciplinary field of biomedical engineering. Topics covered include core biomedical engineering areas, fundamental concepts, ethics, professionalism, careers, and technical skills. Generally offered: Spring. Course Fees: LRE1 \$20; STSE \$25.

**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 1203, BIO 1201, MAT 1214, and BME 1002. Fundamental principles of general and organ systems physiology, including composition and concentration of cellular and other body fluids, types of transport (e.g., diffusion, membrane transporters), energy (e.g., 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. (Same as CME 2113. Credit cannot be earned for both BME 2103 and CME 2113.) Generally offered: Fall. Course Fees: LRE1 \$25; STSE \$30.

**BME 2203. Biomechanics I. (3-1) 3 Credit Hours.**

Prerequisites: MAT 1224 and PHY 1943. Corequisites: BME 3211, EGR 2323, and PHY 1963. Introduction to the fundamental engineering mechanics with focus on the human body. This course includes a 3 hour lecture and a 1 hour recitation. (Same as CME 2803. Credit cannot be earned for both BME 2203 and CME 2803.) Generally offered: Spring. Course Fees: LRE1 \$25; STSE \$30; DL01 \$75.

**BME 3003. Biomaterials I. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in BME 1002 and CHE 1113. 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. (Formerly listed as BME 2403 in previous catalogs. Credit cannot be earned for both BME 3003 and CME 3003.) Differential Tuition: \$165. Course fee: DL01 \$75.

**BME 3013. Clinical Internship in Biomedical Engineering. (0-0) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in BME 3003 and BME 3113 and BME 3121. This course will introduce students to the clinical environment, interacting with clinicians on current clinical problems, and engineering approaches. Generally offered: Summer. Differential Tuition: \$165.

**BME 3023. Biomedical Engineering Technology and Product Development. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in BME 3013 and 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.) Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$55.

**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. Differential Tuition: \$110.

**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. Differential Tuition: \$165.

**BME 3113. Cellular Biology for Biomedical Engineering. (3-0) 3 Credit Hours.**

Prerequisites: Major in Biomedical Engineering and a grade of "C-" or better in BME 2103. Introduction to concepts and principles in cell and molecular biology. Topics include the structure and function of biomolecules, the fundamentals of DNA synthesis and repair, gene expression, cell metabolism, cell signaling, the cytoskeleton, and the cell cycle. (Formerly BME 3114. Same as CME 3113. Credit can only be earned for one of the following: BME 3113, BME 3114, and CME 3113.) Differential Tuition: \$165.

**BME 3121. Cellular Biology for Biomedical Engineering Laboratory. (0-3) 1 Credit Hour.**

Prerequisites: Major in Biomedical Engineering and a grade of "C-" or better in BME 2103. Corequisite: BME 3113 (Formerly BME 3114). This laboratory course is designed to reinforce concepts from BME 3113 (Formerly BME 3114) and provide students with the ability to use techniques and procedures commonly used in cell and molecular biology with biomedical engineering applications. Differential Tuition: \$55.



**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. (Same as CME 3803. Credit cannot be earned for both BME 3203 and CME 3803.) Generally offered: Fall. Differential Tuition: \$165. Course fee: DL01 \$75.

**BME 3211. Biomedical Engineering Laboratory I. (0-4) 1 Credit Hour.**

Prerequisite: A grade of "C-" or better in BME 1002. Corequisites: BME 2203, BME 3003, and either STA 1403 or STA 2303. A biomedical engineering lab in biomechanics and biomaterials. This lab-based course will emphasize the synthesis and characterization of mechanical properties as well as physical and chemical properties of biomaterials. (Formerly listed as BME 2211 in previous catalogs. Credit cannot be earned for both BME 3211 and BME 2211.) Differential Tuition: \$55.

**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. (Same as CME 3903. Credit cannot be earned for both BME 3303 and CME 3903.) Generally offered: Fall. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$55.

**BME 3373. Modeling and Simulation Using MATLAB. (3-0) 3 Credit Hours.**

Prerequisites: Junior status with a major in Biomedical Engineering and a grade of "C-" or better in BME 2103, BME 2203, and BME 3211, or permission by instructor. Corequisite: BME 3311. Introduction to programming using MATLAB. Topics may include modeling biomedical phenomena including neuronal action potentials, muscles, the heart and circulatory system, and problem solving in biomechanics. Differential Tuition: \$165.

**BME 3413. Biocompatibility of Materials: Tissue-Biomaterial Interaction. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in BME 3003, BME 3113, and BME 3121. 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, the mechanisms of cell interactions with extracellular matrix components, and cell/tissue responses to implant materials are reviewed in detail. Case studies of cardiovascular and orthopedic 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. (Same as CME 3413. Credit can only be earned for one of the following: BME 3413, BME 4423, or CME 3413). Generally offered: Fall. Differential Tuition: \$165. Course fee: DL01 \$75.

**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.") (Same as CME 3513. Credit cannot be earned for both BME 3503 and CME 3513.) Generally offered: Spring. Differential Tuition: \$165. Course fee: \$75.

**BME 3703. Biotransport Phenomena. (3-1) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in BME 3703 and BME 3373. 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 apply these principles to design artificial and extracorporeal devices and drug delivery systems for pharmacokinetic analysis. This course includes a 3 hour lecture and a 1 hour recitation. Generally offered: Spring. Differential Tuition: \$165.

**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. Differential Tuition: \$55.

**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 and strain analysis, stress and strain in tissue and organs, and problem solving and design in biomechanics using statics, mechanics of materials, kinematics, and/or dynamics concepts. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**BME 4233. Computational Biomechanics. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in BME 2203 or consent from the instructor. This course will provide students with practical knowledge and tools to perform biomechanical analysis through computational modeling. The course applies fundamentals of mechanics of material and the methods of computational modeling such as the finite element method (FEM) to model biological systems and biomechanical components and simulate biomedical phenomena. Examples and problems may be solved analytically and with the use of commercially available FEM software. Some basic knowledge of computer programming is recommended. Differential Tuition: \$165.

**BME 4283. Impact 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 or consent from the instructor. This course will cover the response of the human organism to impact loading. Topics will include dynamics, kinetics, injury mechanisms of the head, spine, thorax, abdomen, and extremities, human tolerance to impact, anthropomorphic test devices, mathematical models, and human subject testing. Impact scenarios covered will include automotive, aerospace, combat, and sports. Maybe repeated for credit when topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree. Differential Tuition: \$165.



**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**BME 4423. Tissue Engineering. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in BME 3003, BME 3113, and BME 3121. 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. (Same as BME 3413 and CME 3413. Credit can only be earned for one of the following: BME 3413, BME 4423, or CME 3413). Differential Tuition: \$165. Course fee: DL01 \$75.

**BME 4433. Soft Materials. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in BME 3003 or CME 3003 and a junior or senior status in the program. A review of specific topics in soft biomaterials with an emphasis on the use of polymer matrices. Aspects of material synthesis and characterization will be addressed, along with their applications in nano- and micro-technologies, drug delivery, biosensing, and tissue engineering. Differential Tuition: \$165.

**BME 4443. Stem Cell Engineering. (3-0) 3 Credit Hours.**

Prerequisites: BME 3003 or CME 3003, BME 3113 (BME 3114 in previous catalogs), BME 3121, and senior status in the program. A review of special topics and recent advancements in stem cell engineering. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: \$75.

**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, BME 3113 (BME 3114 in previous catalogs), and BME 3121. 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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

**BME 4713. Cellular Engineering. (3-0) 3 Credit Hours.**

Prerequisites: BME 3113 and BME 3121. This course focuses on the engineering of cell function for applications in biomedical engineering. Topics include cell conditioning, genetic engineering and gene therapy, basic principles of stem cell engineering, and translational applications of cell engineering. Differential Tuition: \$165. Course fee: \$75.

**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 3113 (BME 3114 in previous catalogs), BME 3121, 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. Differential Tuition: \$165. Course fee: DL01 \$75.

**BME 4803. Biomedical Data Science. (3-0) 3 Credit Hours.**

Prerequisites: Major in Biomedical Engineering and a grade of "C-" or better in BME 1002 and EGR 2323, or permission from instructor. This course will introduce students to computational methods to understand and analyze biological data. Topics covered include analysis of molecular, clinical, and epidemiology data, network modeling, image analysis, and emerging methods in artificial intelligence. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**BME 4923. Orthopaedic Device Design. (3-0) 3 Credit Hours.**

Prerequisites: Senior status with a major in Biomedical Engineering and a grade of "C-" or better in BME 2203, or consent from the instructor. This course will educate students about current biomedical technologies and product development. Topics covered will include ideation, concept development, design methodologies, business plan basics, regulatory concepts for medical devices and intellectual property management. Maybe repeated for credit when topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree. Differential Tuition: \$165.

## Business Law (BLW)

### Business Law (BLW) Courses

**BLW 3013. Business Law for Small Business Owners. (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. (Same as BLW 3033. Credit cannot be earned for both BLW 3013 and BLW 3033.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126.

**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. Same as BLW 3013. For Accounting students, credit cannot be earned for both BLW 3013 and BLW 3033. BLW 3023 cannot be taken as a substitution for BLW 3033. Generally offered: Fall, Spring, Summer. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

## Chemical Engineering (CME)

**NOTE: All prerequisites for Chemical Engineering (CME) courses must be completed with a grade of "C-" or better.**

## Chemical Engineering (CME) Courses

**CME 1202. Introduction to Chemical Engineering. (2-0) 2 Credit Hours.**

A broad survey of the practice of chemical engineering, intended to expose students to various 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 \$25; STSE \$20.

**CME 2103. Chemical Process Principles. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in CHE 1113, CME 1202, and MAT 1214. Students will first learn basic principles of chemical engineering, including temperature, pressure, pressure head, mass, moles, volume, concentration, density, time-dependent variables, and buoyancy. They will apply techniques such as interpolation, linearization, statistical analysis, and Gauss-Jordan elimination. Students will define system boundaries for closed and open systems to apply material and energy balances to single units and multiple unit processes; processes containing recycle loops; non-reactive and reactive processes; processes with ideal and nonideal gases; and processes with liquid-liquid equilibrium, solid-vapor equilibrium, and single and multi-component vapor liquid equilibrium. Students will learn the first law of thermodynamics to derive and apply the general energy balance, mechanical energy balance, and Bernoulli equation. Students will learn the differences between extensive versus intensive variables, and state functions versus path functions. Students will develop an understanding of system and stream energies (enthalpy, internal energy, potential energy, and kinetic energy) versus energy transfer terms (heat and work) and apply them to non-reactive and reactive chemical processes. Course Fees: LRE1 \$25; STSE \$30; DL01 \$75.

**CME 2113. Physiology for Chemical Engineering. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in BIO 1203 and MAT 1214. Fundamental principles of general and organs 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. (Same as BME 2103. Credit cannot be earned for both CME 2113 and BME 2103.) Course Fees: LRE1 \$25; STSE \$30.

**CME 2301. Chemical Process Safety and Risk Management. (1-0) 1 Credit Hour.**

(This course is for students in catalogs prior to 2022-2024.) Application of chemical process safety, risk assessment and management, including hazardous waste disposal and remediation. (Same as CME 3302 and CME 4001. Credit cannot be earned for more than one of the following: CME 2301, CME 3302, and CME 4001.) Course Fees: LRE1 \$25; STSE \$10.

**CME 2303. Transport Phenomena I. (3-1) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CME 2103. This course covers the fundamentals of momentum transport, fluid mechanics, and fluid unit operations. Topics discussed include fluid statics, fluid properties and fluid flow, overall mass, energy and momentum balances, incompressible and compressible flow in pipes, flow in packed and fluidized beds, pumps, compressors, agitators and nozzles, differential equations of fluid flow, non-Newtonian fluids, potential and creeping flow, and boundary layer and turbulent flow. This course includes a 3-hour lecture and a 1-hour recitation per week. (Credit cannot be earned for both CME 2303 and CME 3303). Course Fees: LRE1 \$25; STSE \$30.

**CME 2403. Introduction to Programming for Engineers. (3-0) 3 Credit Hours.**

This course is designed to provide a foundation in programming. Topics include data types, the use of variables for storing data, arrays and strings, mathematical and logical expressions, loops, intro to data structures, structured program design, file input and output, plotting 2-D and 3-D data, and application to solving engineering problems. Course fees: LRE1 \$25; STSE \$30.

**CME 2503. Thermodynamics I. (3-1) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CME 2103. Thermodynamic analysis and modeling of pure component and constant concentration systems. Topics include basic thermodynamic variables, introductory equations of state, first and second laws of thermodynamics (close and open systems), reversible and irreversible processes, thermodynamic cycles, thermodynamic potentials, Maxwell relations, phase change properties and introduction to statistical thermodynamics. (Credit cannot be earned for both CME 2503 and CME 3103 or ME 3293.) This course includes a 3-hour lecture and a 1-hour recitation per week. Course Fees: LRE1 \$25; STSE \$30.

**CME 2803. Biomechanics I. (3-1) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in EGR 2323 and PHY 1963. Introduction to fundamental engineering mechanics with focus on the human body. (Same as BME 2203. Credit cannot be earned for both CME 2803 and BME 2203.) Course Fees: LRE1 \$25; STSE \$30; DL01 \$75.

**CME 3003. Introduction to Materials Science and Engineering. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CME 1202. 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 properties, and corresponding mechanical, electrical, optical, and magnetic properties. (Same as BME 3003. Credit cannot be earned for both CME 3003 and BME 3003.) Differential Tuition: \$165. Course fee: DL01 \$75.

**CME 3103. Thermodynamics I. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in CME 2103 and completion of or concurrent enrollment in CHE 3804. This course is intended for students in catalogs prior to the 2022-2024 edition. 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 more than one of the following: CME 2503, CME 3103, CME 3203, and ME 3293.) Differential Tuition: \$165.

**CME 3113. Cellular Biology for Chemical Engineering. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CME 2103. Introduction to concepts and principles in cell and molecular biology. Topics include the structure and function of biomolecules, the fundamentals of DNA synthesis and repair, gene expression, cell metabolism, cell signaling, the cytoskeleton, and the cell cycle. This class consists of a 3-hour lecture. (Same as BME 3114 and BME 3113. Credit can only be earned for one of the following: CME 3113, BME 3114, or BME 3113.) Differential Tuition: \$165. Course fee: DL01 \$75.

**CME 3123. Computational Methods in Chemical Engineering. (3-1) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CME 2403; completion of or concurrent enrollment in EGR 3323. Introduction to numerical techniques and computational tools essential for chemical engineering, including the use of data acquisition and processing, numerical analysis of linear, non-linear, and differential equations. Students will learn to use computer software to aid in their analysis (e.g., Matlab). This course includes a 3-hour lecture and a 1-hour recitation per week. Differential Tuition: \$165.

**CME 3203. Thermodynamics II. (3-1) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CME 3603 (CME 2203 in previous catalogs). Thermodynamic analysis and modeling of pure and multicomponent mixtures with variable concentration. This course focuses mainly on phase and chemical equilibria. Topics covered include thermodynamic properties estimation, equations of state, fugacity, activity coefficient models, chemical reactions and equilibrium, and intermolecular forces. (Credit cannot be earned for both CME 3203 and CME 3103 or ME 3293.) This course includes a 3-hour lecture and a 1-hour recitation per week. Differential Tuition: \$165.

**CME 3302. Chemical Process Safety and Risk Management. (2-0) 2 Credit Hours.**

Application of process safety and risk assessment and management in the petrochemical and related industries. The Risk Based Process Safety (RBPS) framework is used. Process safety design strategies are incorporated in a team project to complete a Hazard Identification and Risk Analysis (HIRA) for a given petrochemical process. Impact on employees, community, and the environment are addressed. The course includes lectures, guest speakers from industry, and investigation of case studies involving significant process safety events. (Same as CME 2301 and CME 4001. Credit cannot be earned for more than one of the following: CME 2301, CME 3302, and CME 4001.) Differential Tuition: \$110.

**CME 3303. Transport Phenomena I. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CME 2103. This course is intended for students in catalogs prior to the 2022-2024 edition. This course covers the fundamental of momentum transport, fluid mechanics and fluid unit operations. Topics discussed include fluid statics, fluid properties and fluid flow, overall mass, energy and momentum balances, incompressible and compressible flow in pipes, flow in packed and fluidized beds, pumps, compressors, agitators and nozzles, differential equations of fluid flow, non-Newtonian fluids, potential and creeping flow and boundary layer and turbulent flow. (Credit cannot be earned for both CME 3303 and CME 2303.) Differential Tuition: \$165. Course fee: DL01 \$75.

**CME 3403. Separation Processes. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CME 2303 (Formerly CME 3303). This course covers unit operations associated with mass transfer. Topics covered include absorption and stripping, humidification processes, filtration and membrane separations, distillation, liquid-liquid extraction, adsorption and ion exchange, settling, evaporation and drying. Differential Tuition: \$165.

**CME 3413. Biocompatibility of Materials: Tissue-Biomaterial Interaction. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in CME 3003 and CME 3113. 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 orthopedic 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. (Same as BME 3413. Credit cannot be earned for both CME 3413 and BME 3413.) Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**CME 3503. Kinetics and Reactor Design. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in CHE 3804 and CME 2303 (Formerly 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. Differential Tuition: \$165. Course fee: DL01 \$75.

**CME 3513. Nanomaterials and Nanobiotechnology. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CME 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. (Same as BME 3503. Credit cannot be earned for both CME 3513 and BME 3503.) Differential Tuition: \$165.

**CME 3601. Chemical Engineering Laboratory I. (0-3) 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 reports and oral presentations required. Differential Tuition: \$55.

**CME 3603. Computational Methods in Chemical Engineering. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CME 2403. Introduction to numerical techniques and computational tools essential for chemical engineering, including the use of data acquisition and processing, numerical analysis of linear, non-linear, and differential equations. Students will learn to use computer software to aid in their analysis (e.g., Matlab). This course includes a 3-hour lecture and a 1-hour recitation per week. (Formerly CME 2203. Credit cannot be earned for both CME 3603 and CME 2203.) Differential Tuition: \$165.

**CME 3703. Transport Phenomena II. (3-1) 3 Credit Hours.**

Prerequisite: CME 2303 (CME 3303 in previous catalogs) or instructor approval. This course focuses on the fundamentals and applications associated with heat and mass transfer. Topics discussed steady state conduction, principles of unsteady state heat transfer, convection, heat transfer coefficients, heat exchangers, radiation, steady state mass transfer, diffusions, convection, mass transfer coefficients, and unsteady state mass transfer. This course includes a 3-hour lecture and a 1-hour recitation per week. Differential Tuition: \$165. Course fee: DL01 \$75.

**CME 3803. Biomechanics II. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CME 2803. Continuation of fundamental biomechanics to include elasticity, viscoelasticity, deformation, stress analysis, blood flow in the systemic and pulmonary circulation, and fluid-structure interaction. (Same as BME 3203. Credit cannot be earned for both CME 3803 and BME 3203.) Differential Tuition: \$165. Course fee: DL01 \$75.

**CME 3903. Bioinstrumentation. (3-1) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CME 2803. 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 per week. (Same as BME 3303. Credit cannot be earned for both CME 3903 and BME 3303.) Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**CME 4163. Chemical Engineering Design Fundamentals. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in CME 3203 and CME 3403. 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. Students will be assembled in teams to perform materials and energy balances on their capstone design projects. (Formerly titled Thermodynamics II.) Differential Tuition: \$165. Course fee: DL01 \$75.

**CME 4201. Chemical Engineering Laboratory II. (0-3) 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. Differential Tuition: \$55.

**CME 4263. Plant Design. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CME 4163 and CME 3302. 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 will work in small groups and submit a plant design project report that has a comprehensive design of all equipment included in the plant. Students will present the results of their design in a College of Engineering and Integrated Design-wide symposium. Differential Tuition: \$165.



**CME 4423. Rheology. (3-0) 3 Credit Hours.**

Prerequisites: To be determined by the instructor. This course covers the fundamentals of rheology as they apply to the oil and gas industry. Topics covered include crude oil flow rheology, drilling fluids, fluids in completion, crude oil pipelining, and fractal characterization of wax. Differential Tuition: \$165.

**CME 4433. Process Optimization. (3-0) 3 Credit Hours.**

Modern optimization theory, algorithms, and applications for large scale chemical engineering real-world problems. Topics included in the course and prerequisites required for the course will be decided upon by the instructor who teaches the course. Differential tuition: \$165.

**CME 4513. Selected Topics in Bioengineering. (3-0) 3 Credit Hours.**

Prerequisites: May 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 will apply to a bachelor's degree. Differential Tuition: \$165. Course fee: DL01 \$75.

**CME 4523. Selected Topics in Petroleum/Energy Engineering. (3-0) 3 Credit Hours.**

Prerequisites: May 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 will apply to a bachelor's degree. Differential Tuition: \$165. Course fee: DL01 \$75.

**CME 4533. Selected Topics in Materials Science and Engineering. (3-0) 3 Credit Hours.**

Prerequisites: May 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 will apply to a bachelor's degree. Differential Tuition: \$165. Course fee: DL01 \$75.

**CME 4543. Selected Topics in Environmental Engineering. (3-0) 3 Credit Hours.**

Prerequisites: May 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 will apply to a bachelor's degree. Course Fees: LRE1 \$25; STSE \$30. Differential Tuition: \$165. Course fee: DL01 \$75.

**CME 4701. Chemical Engineering Research. (0-0) 1 Credit Hour.**

Prerequisite: Permission in writing (form online) from the instructor, the student's advisor, and the Department Chair. Advanced laboratory practice and introduction to chemical engineering research. This course may be used to satisfy one of the electives for the CME tracks. May be repeated for credit but no more than 3 semester credit hours will apply towards the bachelor's degree in Chemical Engineering. This course cannot be taken if 3 semester credit hours in CME 4913 or CME 4803 have already been earned. Differential Tuition: \$55.

**CME 4702. Chemical Engineering Research. (0-0) 2 Credit Hours.**

Prerequisite: Permission in writing (form online) from the instructor, the student's advisor, and the Department Chair. Advanced laboratory practice and introduction to chemical engineering research. This course may be used to satisfy one of the electives for the CME tracks. May be repeated for credit but no more than 3 semester credit hours will apply towards the bachelor's degree in Chemical Engineering. This course cannot be taken if 3 semester credit hours in CME 4913 or CME 4803 have already been earned. Differential Tuition: \$110.

**CME 4703. Chemical Engineering Research. (0-0) 3 Credit Hours.**

Prerequisite: Permission in writing (form online) from the instructor, the student's advisor, and the Department Chair. Advanced laboratory practice and introduction to chemical engineering research. This course may be used to satisfy one of the electives for the CME tracks. May be repeated for credit but no more than 3 semester credit hours will apply towards the bachelor's degree in Chemical Engineering. This course cannot be taken if 3 semester credit hours in CME 4913 or CME 4803 have already been earned. Differential Tuition: \$165.

**CME 4803. Chemical Engineering Internship. (0-0) 3 Credit Hours.**

Prerequisite: Permission in writing (form online) from the instructor, the student's advisor, and the Department Chair. Internship in the chemical engineering industry. No more than 3 semester credit hours will apply to the bachelor's degree in Chemical Engineering. This course cannot be taken if 3 semester credit hours in CME 4913 or CME 4703 have already been earned. Differential Tuition: \$165.

**CME 4911. Independent Study. (0-0) 1 Credit Hour.**

Prerequisites: Permission in writing (Independent Study Form available online) from the instructor and the Department Chair. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 3 semester credit hours of independent study will apply to a bachelor's degree in Chemical Engineering. This course cannot be taken if 3 semester credit hours in CME 4703 or CME 4803 have already been earned. (Formerly CME 4601. Credit cannot be earned for both CME 4601 and CME 4911.) Differential Tuition: \$55.

**CME 4912. Independent Study. (0-0) 2 Credit Hours.**

Prerequisites: Permission in writing (Independent Study Form available online) from the instructor and the Department Chair. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 3 semester credit hours of independent study will apply to a bachelor's degree in Chemical Engineering. This course cannot be taken if 3 semester credit hours in CME 4703 or CME 4803 have already been earned. Formerly CME 4602. Differential Tuition: \$110.

**CME 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: Permission in writing (Independent Study Form available online) from the instructor and the Department Chair. Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 3 semester credit hours of independent study will apply to a bachelor's degree in Chemical Engineering. This course cannot be taken if 3 semester credit hours in CME 4703 or CME 4803 have already been earned. Formerly CME 4603. Credit cannot be earned for both CME 4603 and CME 4913. Differential Tuition: \$165.



## 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. Same as CHE 1083. Credit cannot be earned for CHE 1003, CHE 1011, CHE 1083, and CHE 1004.) Course Fees: IUC1 \$15; L001 \$30; LRS1 \$61.60; STSI \$28.80.

**CHE 1014. Elementary Organic and Biochemistry. (3-3) 4 Credit Hours. (TCCN = CHEM 1407)**

Prerequisite: A grade of "C-" or better in CHE 1004. 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. Same as CHE 1093. Credit can be earned for only ONE of the following: CHE 1013, CHE 1014, CHE 1093, or CHE 1203.) Course Fees: IUC1 \$15; L001 \$30; LRS1 \$61.60; STSI \$28.80; DL01 \$100.

**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 \$46.20; STSI \$21.60; DL01 \$75.

**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 \$46.20; STSI \$21.60; DL01 \$75.

**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: DL01 \$75; LRC1 \$12; LRS1 \$46.20; STSI \$21.60.

**CHE 1103. General Chemistry I. (3-0) 3 Credit Hours. (TCCN = CHEM 1311)**

Prerequisite: AP Chemistry Score of 3 or greater, or a grade of "C-" or better in CHE 1073, or above 70% mastery in the ALEKS Chemistry assessment; 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. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$46.20; STSI \$21.60; DL01 \$75.

**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. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$46.20; STSI \$21.60; DL01 \$75.

**CHE 1121. General Chemistry I Laboratory. (1-4) 1 Credit Hour. (TCCN = CHEM 1111)**

Prerequisite: A grade of "C-" or better in CHE 1103 or concurrent enrollment in CHE 1103. 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. This laboratory includes a lecture component. Generally offered: Fall, Spring, Summer. Course Fees: IUC1 \$15; L001 \$30; LRS1 \$15.40; STSI \$7.20; DL01 \$25.

**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. Techniques of qualitative and quantitative chemical analysis, illustrated primarily via inorganic chemical systems and their reactions. Laboratory to accompany CHE 1113. This laboratory includes a lecture component. Generally offered: Fall, Spring, Summer. Course Fees: IUC1 \$15; L001 \$30; LRS1 \$15.40; STSI \$7.20; DL01 \$25.

**CHE 2603. Organic Chemistry I. (3-0) 3 Credit Hours. (TCCN = CHEM 2323)**

Prerequisite: A grade of "C-" or better in CHE 1113. A study of the fundamentals of organic chemistry including structure, reaction mechanisms, synthesis, and spectroscopy. Discussion and problems amplify and clarify the course topics. (Same as CHE 2703. Credit cannot be earned for more than one of the following: CHE 2603 or CHE 2703). Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$46.20; STSI \$21.60; DL01 \$75.

**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. Generally offered: Fall, Spring, Summer. Course Fees: IUC1 \$15; L001 \$30; LRS1 \$30.80; STSI \$14.40; DL01 \$50.

**CHE 2703. Organic Chemistry I for Majors. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CHE 1113. An in-depth study of the organic chemistry including structure, reaction mechanisms, synthesis, and spectroscopy. Discussion and practice of problems amplifying and clarifying the course. (Same as CHE 2603. Credit cannot be earned for more than one of the following: CHE 2603 or CHE 2703). Course Fees: LRS1 \$46.20; STSI \$21.60.

**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. Topics include: power series, linear algebra, determinants, matrices, vector spaces, multi-variable calculus (partial differentiation and multiple integrals), complex variables, ordinary differential equations, numerical analysis, and numerical methods in integration, probability, statistics, regression methods and symbolic programming. Generally offered: Spring. Course Fees: LRS1 \$46.20; STSI \$21.60.

**CHE 3214. Analytical Chemistry. (2-5) 4 Credit Hours.**

Prerequisites: A grade of "C-" or better in CHE 1113 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. Generally offered: Fall, Spring. Differential Tuition: \$200. Course Fees: IUC1 \$15; L001 \$30.

**CHE 3303. Essentials of Biochemistry. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CHE 3643. This is a one semester course designed for Chemistry majors. Overview of the structure and function relationships of biological molecules, energy production, storage, and utilization, amino acids, nucleic acids, peptides and proteins, and intermediary metabolism. (Formerly CHE 4303. Credit cannot be earned for both CHE 3303 and one of the following: CHE 3313 or CHE 4303. BIO 3513 cannot be taken as a chemistry elective.) Generally offered: Fall. Differential Tuition: \$150.

**CHE 3313. Biochemistry I. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CHE 3643. This course is the first of a two semester course covering biochemistry designed for Biochemistry majors. This course will study the structure, function, and chemistry of proteins and carbohydrates, kinetics, mechanisms, and regulation of enzymes, and metabolism of carbohydrates. (Formerly CHE 4303. Credit cannot be earned for both CHE 3313 and any of the following: CHE 3303 or CHE 4303. BIO 3513 cannot be taken as a chemistry elective.) Generally offered: Fall. Differential Tuition: \$150. Course Fees: IUC1 \$15; L001 \$30.

**CHE 3464. Descriptive Inorganic Chemistry. (3-3) 4 Credit Hours.**

Prerequisites: A grade of "C-" or better in CHE 1113 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. Generally offered: Spring. Differential Tuition: \$200. Course Fees: IUC1 \$15; L001 \$30.

**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. (Same as CHE 3703. Credit cannot be earned for more than one of the following: CHE 3703 or CHE 3643.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$150. Course fee: \$75.

**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. Generally offered: Fall, Spring, Summer. Differential Tuition: \$100. Course Fees: IUC1 \$15; L001 \$30; DL01 \$50.

**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. (Same as CHE 3643. Credit cannot be earned for more than one of the following: CHE 3703 or CHE 3643.) Differential Tuition: \$150.

**CHE 3804. Molecular Thermodynamics. (4-0) 4 Credit Hours.**

Prerequisites: A grade of "C-" or better in CHE 1113, MAT 1224, and PHY 1963. The laws of thermodynamics, free energy and chemical potential, ideal and non-ideal gases, phase transitions, equilibria, solutions, and kinetic theory of gases. Mathematical methods and concepts related to the study of thermodynamics. (Formerly titled "Physical Chemistry I and Laboratory".) Generally offered: Fall. Differential Tuition: \$200. Course fee: DL01 \$100.

**CHE 3812. Physical Chemistry Laboratory. (0-5) 2 Credit Hours.**

Prerequisites: A grade of "C-" or better in CHE 1113, CHE 1131, CHE 3804 or CHE 3824, PHY 1963, and PHY 1971. Laboratory study of selected physicochemical principles and methods illustrating concepts developed in CHE 3804 and CHE 3824. Data acquisition, data analysis, and report writing are stressed. Generally offered: Spring. Differential Tuition: \$100. Course Fees: IUC1 \$15; L001 \$30.

**CHE 3824. Quantum Chemistry and Spectroscopy. (4-0) 4 Credit Hours.**

Prerequisites: A grade of "C-" or better in CHE 1113, MAT 1224, and PHY 1963. Introduction to atomic and molecular quantum chemistry, group theory, and rotational, vibrational, and electronic spectroscopies. Mathematical methods and concepts related to quantum theory and molecular spectroscopy. (Formerly titled "Physical Chemistry II and Laboratory".) Generally offered: Spring. Differential Tuition: \$200. Course fee: \$100.

**CHE 3973. Chemical Communications. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in CHE 3643 and CHE 3652. Introduction to communication techniques used in the chemistry profession, including writing resumés and proposals, researching topics in the chemical literature, review and analysis of articles and other scientific materials, and oral presentation of chemical research. Same as CHE 4971, credit cannot be earned for both CHE 3973 and CHE 4971. Differential Tuition: \$150.

**CHE 4213. Instrumental Analysis. (2-5) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in CHE 3214 and CHE 3652, and a grade of "C-" or better or concurrent enrollment in CHE 3824. The physical and chemical principles of modern instrumental techniques used for chemical analysis. Topics include emission, absorption, magnetic resonance, FTIR spectroscopies, mass spectrometry, and chromatography. The use of spectrometric and chromatographic instrumentation in the separation, identification, and quantitation of compounds in chemical systems. Generally offered: Fall, Spring. Differential Tuition: \$150. Course Fees: IUC1 \$15; L001 \$30.

**CHE 4273. Forensic Chemistry. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in CHE 3214, CHE 3652, and CHE 3804 or CHE 4354 (Formerly CHE 3854). Application of chemical analyses with real world and legal implications. Topics include statistics, sample handling and preparation, analysis of drugs, combustion products, inks and paints, and colors and colorants. The use of spectrometric and chromatographic instrumentation in the separation, identification, and quantitation of compounds in chemical systems will be developed. Differential Tuition: \$150.

**CHE 4313. Biochemistry II. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CHE 3313 (CHE 3303 is not an acceptable substitute). This course is the continuation of CHE 3313 designed for Biochemistry majors. This course will study the structure, function, chemistry of lipids and nucleic acids, amino acid metabolism, and metabolism integration and interrelationships of metabolic pathways. Generally offered: Spring. Differential Tuition: \$150.

**CHE 4332. Biochemistry II Laboratory. (0-4) 2 Credit Hours.**

Prerequisites: CHE 3313, BIO 3362, and completion or concurrent enrollment in CHE 4313. Course-based undergraduate research experiential laboratory focusing on the methodologies of modern biochemistry. Generally offered: Spring. Differential Tuition: \$100. Course Fees: IUC1 \$15; L001 \$30.

**CHE 4354. Basic Biophysical Chemistry. (3-2) 4 Credit Hours.**

Prerequisites: A grade of "C-" or better in CHE 3313, CHE 3643, MAT 1214, PHY 1963 (or PHY 1623), and PHY 1971 (or PHY 1631). Fundamental aspects 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. Formerly CHE 3854. Credit cannot be earned for both CHE 4354 and CHE 3854. Generally offered: Fall. Differential Tuition: \$200. Course Fees: IUC1 \$15; L001 \$30.

**CHE 4443. Green Chemistry. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in CHE 3464 and CHE 3643, or consent of instructor. Overview of the 12 principles of green chemistry, the chemical tools utilized, and relevant examples of their practical use in commercial applications. The focus is on sustainability ethics and the primary challenges in green chemistry, including development and hazards to health and the environment. Differential Tuition: \$150.

**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 4354 (Formerly CHE 3854). A study of the structure, bonding, and properties of inorganic compounds, acid-base theory, crystalline state, coordination chemistry, and other advanced topics. Generally offered: Fall. Differential Tuition: \$150.

**CHE 4483. Solid State Chemistry. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CHE 1113. An introduction to inorganic materials and solid state chemistry for graduate students and advanced undergraduate students. The focus is on understanding solid state materials from a structural and chemical perspective and introducing general solid state synthesis methodologies and characterization techniques. Differential Tuition: \$150.

**CHE 4513. X-Ray Crystallography. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "B-" or better in CHE 3464 or consent of instructor. Topics include a physical description of the crystalline state, symmetry in crystals, X-ray diffraction, modern methods of structural determination, and chemical interpretation of structural results. Same as CHE 4953, credit cannot be earned for both CHE 4513 and CHE 4953. Differential Tuition: \$150.

**CHE 4613. Introduction to Polymer Chemistry. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CHE 3643. Introduction to principles of polymer chemistry. Molecular weight analysis, structure-property relationships, mechanical and chemical properties, polymer synthesis, conducting polymers, and applications of polymers. Generally offered: Spring. Differential tuition: \$150.

**CHE 4643. Advanced Topics in Organic Chemistry. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "B-" or better in CHE 3643. This course prepares students for graduate study in organic chemistry. Topics include physical organic chemistry, molecular orbital theory, transition state theory, hard soft acid-base theory, organometallics, and catalysis. Differential Tuition: \$150.

**CHE 4683. Photochemistry. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CHE 3643. Principles of interaction of light with molecular, polymer, and materials systems. Chemical processes induced by light and applications including solar cells, photochromism, and light emitting diodes. Differential tuition: \$150.

**CHE 4703. Drug Metabolism. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CHE 3643 or consent of the instructor. This course covers how drugs are metabolized in the body, including the mechanisms for enzyme-catalyzed reactions, with an emphasis on how to propose and experimentally test various hypotheses. Differential Tuition: \$150.

**CHE 4723. Pharmaceutical Chemistry. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CHE 3643. Exploration of the process of drug discovery and development with particular emphasis on the role of organic chemistry. Topics include the design of new drugs, their interaction with biological targets, the application of medicinal chemistry in lead optimization, and large-scale drug synthesis and development. Differential tuition: \$150.

**CHE 4753. NMR Spectroscopy. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CHE 3643. Introduction to the techniques of <sup>1</sup>H, <sup>13</sup>C, and multinuclear NMR spectroscopy for structure elucidation in organic chemistry. Topics include the principles of NMR spectroscopy and the role of chemical shift, coupling constants, and splitting patterns. Multi-pulse experiments and 2-dimensional techniques are also discussed. Generally offered: Spring. Differential Tuition: \$150.

**CHE 4763. Medicinal Chemistry. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "B-" or better in CHE 3643 and a grade of "C-" or better in CHE 3313. Application of the principles of organic chemistry to medicinal studies, including drug discovery and design, drug synthesis, and chemical interactions in living systems. Differential tuition: \$150.

**CHE 4773. Advanced Catalysis. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "B-" or better in CHE 3643 and a grade of "C-" or better in CHE 3464. Advanced topics in chemical catalysis and its application to the organic synthesis of complex molecules. Systems studied include important traditional catalytic processes and new methods introduced in the recent scientific literature. Differential tuition: \$150.

**CHE 4823. Chemical Kinetics and Dynamics. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in CHE 3804 and MAT 1224, or PHY 1963, or consent of the instructor. Mechanism and rate of chemical reactions from a fundamental point of view, the nature of collisions including cross section and rate constant, and theories of elementary bimolecular and decay processes. The course examines different rate laws, the method of steady state approximation and its application to various type of reactions. Differential tuition: \$150.

**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. Differential Tuition: \$150.

**CHE 4883. Introduction to Mass Spectrometry. (2-3) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CHE 3804 or CHE 4354, 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. Differential Tuition: \$150. Course Fees: IUC1 \$15; L001 \$30.

**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. Differential Tuition: \$50.

**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. Differential Tuition: \$100.

**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. Differential Tuition: \$150.

**CHE 4922. Special Project. (0-0) 2 Credit Hours.**

Special Project in Chemistry. 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 may not be repeated for more than 6 hours. Differential Tuition: \$100.

**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. Differential Tuition: \$150.

**CHE 4943. Molecular Spectroscopy. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in CHE 3824. The foundation of spectroscopic methods and the interpretation of spectra for the identification and elucidation of structures and properties of molecules will be presented. Topics include the absorption and emission of radiation, group theory, microwave, infrared, Raman, UV/Visible, and photo-electron spectroscopies. Differential Tuition: \$150.

**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. Differential Tuition: \$150. Course fee: \$75.

**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. Differential Tuition: \$150.

## 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 \$10.27; MM01 \$7; STLF \$24.64; DL01 \$100.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$24.64; DL01 \$100.



**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**CHN 2023. Advanced Language Skills. (3-0) 3 Credit Hours.**

Prerequisite: CHN 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 Chinese language, along with enhanced comprehension skills in listening and reading. May be repeated for credit when topics vary. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**CHN 4213. Topics in Chinese Culture. (3-0) 3 Credit Hours.**

Prerequisite: CHN 2023, the equivalent, or consent of instructor. Selected topics in Chinese culture, such as festivals, marriage, medicine, tourism, religion, philosophy, cuisine, education, film, and art. May be repeated for credit when topics vary. Course Fees: MM01 \$7; LRLF \$10.27; STLF \$18.48; DL01 \$75.

## Civil Engineering (CE)

**NOTE: All prerequisites for Civil Engineering (CE) courses must be completed with a grade of "C-" or better.**

### 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 \$25; 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 \$25; 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 \$25; STSE \$30; DL01 \$75.

**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: DL01 \$75; LRE1 \$25; 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. (Same as ME 3813. Credit cannot be earned for both CE 3103 and ME 3813.) Generally offered: Fall, Spring. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

**CE 3173. Numerical Methods. (3-0) 3 Credit Hours.**

Prerequisites: CS 1173 and EGR 2323. Use of computing languages and numerical methods in solving civil and environmental engineering problems. Techniques for computer solution of linear and nonlinear simultaneous equations; splines; root finding methods; eigenvalues; finite differences; numerical integration; numerical solutions to ordinary differential equations; error analysis. Case studies in various civil engineering areas. Generally offered: Fall, Spring. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: L001 \$30.



**CE 3413. Geotechnical Engineering and Applications. (2-3) 3 Credit Hours.**

Prerequisite: CE 3103. 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. Differential Tuition: \$165. Course fee: L001 \$30; DL01 \$75.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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.) Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

**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.) Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**CE 4193. Fundamentals of Traffic Engineering. (3-0) 3 Credit Hours.**

Prerequisite: STA 2303. This is an introductory course that prepare students for more advanced classes on focused topics in traffic engineering. The course covers the full spectrum of key topics ranging from characteristics of the transportation system, analysis of flow and capacity, traffic counts, determination of level of service of various types of roads, traffic operations, traffic control devices, pedestrian/bicycle facilities, traffic safety, to introduction to Intelligent Transportation Systems (ITS). It will also introduce to students the basic theories behind the operation of signalized and un-signalized intersections. The course also provides an opportunity to get an introduction to emerging techniques in the area of transportation engineering. Differential Tuition: \$165. Course fee: DL01 \$75.

**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.) Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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.) Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**CE 4543. Project Design and Construction Management. (3-0) 3 Credit Hours.**

Prerequisites: EGR 3713, CE 3113, 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.) Differential Tuition: \$165. Course fee: DL01 \$75.

**CE 4603. Water Resources Engineering. (3-0) 3 Credit Hours.**

Prerequisites: CE 3173, 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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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.) Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: L001 \$10; DL01 \$75.

**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. Differential Tuition: \$165.

**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.) Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: L001 \$30.

**CE 4911. Independent Study. (0-0) 1 Credit Hour.**

Prerequisites: Permission in writing (form available) from the instructor, the School Director 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. Differential Tuition: \$55.

**CE 4912. Independent Study. (0-0) 2 Credit Hours.**

Prerequisites: Permission in writing (form available) from the instructor, the School Director, 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. Differential Tuition: \$110.

**CE 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: Permission in writing (form available) from the instructor, the School Director 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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

# Classics (CLA)

## Classics (CLA) Courses

### CLA 1114. Basic Individualized Instruction. (0-0) 4 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 8 hours of basic individualized instruction will apply to a bachelor's degree. Course Fees: LRLF \$10.27; STLF \$24.64.

### 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 \$10.27; STLF \$18.48.

### 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 \$10.27; STLF \$18.48.

### 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 \$10.27; STLF \$18.48; DL01 \$75.

### CLA 2043. The Greek and Latin Roots of Scientific Terms. (3-0) 3 Credit Hours.

Introduction to the Greek and Latin roots of scientific words, focused on developing practical skills in learning and interpreting common but unfamiliar terminology. Online course only. Course Fees: LRC1 \$12; LRLF \$10.27; STLF \$18.48.

### 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. Course Fees: LRLF \$10.27; STLF \$18.48.

### 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 \$10.27; STLF \$18.48; DL01 \$75.

### CLA 3053. Topics in Classical Literature. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. The study of ancient Greek and Roman texts, focusing on a genre, author, or theme. May be repeated for credit when topics vary. Course Fees: LRLF \$10.27; STLF \$18.48.

### CLA 3063. Ancient Mediterranean Art and Archaeology. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. The study of one or more themes, periods, traditions, or archaeological sites in the ancient Mediterranean world. May be repeated for credit when topics vary. Course Fees: LRLF \$10.27; STLF \$18.48.

### CLA 3073. Science, Medicine, and Technology in Antiquity. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. The study of an aspect, author, or theme relevant to science, medicine, and technology in the ancient Mediterranean world, including both textual evidence and material culture. May be repeated for credit when topics vary. Course Fees: LRLF \$10.27; STLF \$18.48.

### CLA 3083. Classics in the Modern World. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. The study of how Classical Antiquity continues to shape modern art, literature, ideologies, and identities, focusing on select ancient and modern sources. May be repeated for credit when topics vary. Course Fees: LRLF \$10.27; STLF \$18.48.

### CLA 3123. Cultural Issues in Mediterranean Antiquity. (3-0) 3 Credit Hours.

Prerequisite: Completion of Core Curriculum requirement in Communication. Interdisciplinary study of cultural issues, such as slavery, ethnicity, gender, politics, and athletics. May be repeated for credit when topics vary. Course Fees: LRLF \$10.27; STLF \$18.48.

### CLA 3513. Ancient Mediterranean 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 the ancient Mediterranean world. May be repeated for credit when topics vary. Course Fees: LRLF \$10.27; STLF \$18.48.

### CLA 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 hours of independent study, regardless of discipline, will apply to a bachelor's degree. Course Fees: LRLF \$10.27; STLF \$6.16.

### CLA 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 hours of independent study, regardless of discipline, will apply to a bachelor's degree. Course Fees: LRLF \$10.27; STLF \$12.32.

### CLA 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 hours of independent study, regardless of discipline, will apply to a bachelor's degree. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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"). Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$6.16.

**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. Course Fees: LRLF \$10.27; STLF \$12.32.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

## 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 Student Success Coaching Program. May be repeated. Course Fees: LRC1 \$4; DL01 \$25.

**CSS 1202. College Success Seminar. (2-0) 2 Credit Hours.**

A course to help students improve college-level study skills and mastery learning techniques based on current research. This course is taught within the Student Success Coaching Program. May be repeated. Course Fees: LRC1 \$8; DL01 \$50.

**CSS 1203. College Success Seminar. (3-0) 3 Credit Hours.**

A course to help students improve college-level study skills and mastery learning techniques based on current research. This course is taught within the Student Success Coaching Program. 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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. (Same as COM 1063. Credit cannot be earned for both COM 1053 and COM 1063.) Generally offered: Fall, Spring, Summer. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**COM 1063. Digital Business Communication. (3-0) 3 Credit Hours. (TCCN = SPCH 1321)**

Prerequisite: WRC 1013. Restricted to students in a 100% 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. (Same as COM 1053. 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 \$10.27; STLF \$18.48; DL01 \$75.

**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 Fees: LRLF \$10.27; STLF \$18.48.

**COM 2433. Editing. (3-0) 3 Credit Hours.**

Prerequisites: WRC 1013 and WRC 1023. 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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.



**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$6.16.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**COM 3073. Conduct of Communication Inquiry. (3-0) 3 Credit Hours.**  
Prerequisite: Completion of or concurrent enrollment in COM 3023; this course is 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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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 Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**COM 3533. Writing for Public Relations. (3-0) 3 Credit Hours.**  
Prerequisite: Completion of or concurrent enrollment in COM 3523. 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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.



**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**COM 3623. Commercial Publications. (3-0) 3 Credit Hours.**

Prerequisites: COM 3023 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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**COM 3723. Digital Media Production I. (3-0) 3 Credit Hours.**

Prerequisites: COM 2433, COM 3023, 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. Generally offered: Fall, Spring, Summer. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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 twice for credit when topics vary (up to 9 hours). Generally offered: Fall, Spring. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**COM 4723. Digital Media Production II. (3-0) 3 Credit Hours.**

Prerequisite: 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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**COM 4893. Health Communication Practicum. (3-0) 3 Credit Hours.**

Prerequisites: COM 3293, COM 3493, and 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$6.16.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**COM 4933. Internship in Communication. (0-0) 3 Credit Hours.**

Prerequisites: Enrollment as a Communication major, junior 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

## 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 \$10.27; MM01 \$7; STLF \$18.48.

**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 \$10.27; MM01 \$7; STLF \$18.48.

**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: DL01 \$75; LRC1 \$12; LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 Fees: DL01 \$75; LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: DL01 \$75; LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

## Computer Engineering (CPE)

**NOTE: All prerequisites for Computer Engineering (CPE) courses must be completed with a grade of "C-" or better.**

### 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 \$25; 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.) Differential Tuition: \$110. Course fees: DL01 \$50.

**CPE 4813. Computer Engineering Design II. (2-3) 3 Credit Hours.**

Prerequisites: EE 4113 and CPE 4812. Complex system design; advanced ATE; project management, detailed design package, status reporting, formal oral and written technical reports, design reviews, and test plan development and execution; open-ended design project considering safety, reliability, environmental, economic, and other constraints; and ethical and social impacts. Generally offered: Fall, Spring. Differential Tuition: \$165. Course fee: DL01 \$75.

**CPE 4911. Independent Study. (0-0) 1 Credit Hour.**

Prerequisites: Permission in writing (form available) from the instructor, 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. Differential Tuition: \$55.

**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. Differential Tuition: \$110.

**CPE 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: Permission in writing (form available) from the instructor, 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. Differential Tuition: \$165.

**CPE 4953. Special Studies in Computer Engineering. (3-0) 3 Credit Hours.**

Prerequisites: May 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. Differential Tuition: \$165.

## 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 1011. Essence of Computer Science. (1-0) 1 Credit Hour.**

An exploration of the essential ideas of Computer Science with emphasis on computers, computational thinking, and problem solving. This course also offers a brief examination of the modern information society and the influences of technological advances on society and culture. Generally offered: Fall, Spring. Course Fees: LRS1 \$15.40; STSI \$7.20; IUCS: \$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: IUCS \$45; LRS1 \$46.20; STSI \$21.60; DL01 \$75.

**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. Generally offered: Fall, Spring, Summer. Course Fees: IUCS \$45; LRS1 \$46.20; STSI \$21.60; DL01 \$75.

**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: IUCS \$45; LRS1 \$46.20; STSI \$21.60.

**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 Mathematics Core Curriculum requirement. (Formerly titled "Computation for Scientists and Engineers.") Generally offered: Fall, Spring, Summer. Course Fees: DL01 \$75; IUCS \$45; LRC1 \$12; LRS1 \$46.20; STSI \$21.60.

**CS 1714. Computer Programming II. (4-0) 4 Credit Hours. (TCCN = COSC 1437)**

Prerequisite: CS 1083. Extended programming concepts including multidimensional arrays, pointers, dynamic memory allocation/deallocation and recursion. Problem solving methods, algorithm development and implementation. The course includes 3 hours of lecture and a mandatory 1-hour recitation per week. (Formerly CS 1713. Credit cannot be earned for both CS 1714 and CS 1713.) Generally offered: Fall, Spring, Summer. Course Fees: IUUCS \$60; LRS1 \$61.60; STSI \$28.80; DL01 \$100.

**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: IUUCS \$45; LRS1 \$46.20; STSI \$21.60.

**CS 2124. Data Structures. (4-0) 4 Credit Hours.**

Prerequisites: CS 1714 and completion of or concurrent enrollment in MAT 1214. 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. The course includes 3 hours of lecture and a mandatory 1-hour recitation per week. (Formerly CS 1723 and CS 2123. Credit can only be earned for one of the following courses: CS 2124, CS 1723, or CS 2123.) Generally offered: Fall, Spring, Summer. Course Fees: IUUCS \$60; LRS1 \$61.60; STSI \$28.80; DL01 \$100.

**CS 2233. Discrete Mathematical Structures. (3-0) 3 Credit Hours. (TCCN = MATH 2305)**

Prerequisites: MAT 1093 and one of the following: CS 1083, CS 1063, CS 2073, CPE 2073. Survey and development of theoretical tools suitable for describing algorithmic applications. Propositional and predicate calculus, proofs, induction, order notation, recurrences, and discrete structures. (Formerly CS 3233. Credit cannot be earned for both CS 2233 and CS 3233.) Generally offered: Fall, Spring. Course Fees: IUUCS \$45; LRS1 \$46.20; STSI \$21.60; DL01 \$75.

**CS 3113. Principles of Cybersecurity. (3-0) 3 Credit Hours.**

Prerequisite: Completion of or concurrent enrollment in CS 2124. An introductory course in Cybersecurity, including an examination of the fundamental principles underlying cybersecurity, 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.) Generally offered: Fall, Spring. Course Fees: DL01 \$75; IUUCS \$45. Differential Tuition: \$150.

**CS 3333. Mathematical Foundations of Computer Science. (3-0) 3 Credit Hours.**

Prerequisites: CS 1714 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. Differential Tuition: \$150. Course Fees: IUUCS \$45; DL01 \$75.

**CS 3343. Analysis of Algorithms. (3-0) 3 Credit Hours.**

Prerequisites: CS 2124, 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. Differential Tuition: \$150. Course Fees: IUUCS \$45; DL01 \$75.

**CS 3424. Systems Programming. (4-0) 4 Credit Hours.**

Prerequisite: CS 2124. 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. The course includes 3 hours of lecture and a mandatory 1-hour recitation per week. (Formerly CS 2413 and CS 3423. Credit can only be earned for one of the following courses: CS 3424, CS 2413, and CS 3423.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$200. Course Fees: IUUCS \$60; DL01 \$100.

**CS 3433. Computer and Information Security. (3-0) 3 Credit Hours.**

Prerequisites: CS 3424 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. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**CS 3443. Application Programming. (3-0) 3 Credit Hours.**

Prerequisite: CS 2124. 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. Differential Tuition: \$150. Course Fees: IUUCS \$45; DL01 \$75.

**CS 3523. Windows Systems Programming. (3-0) 3 Credit Hours.**

Prerequisite: CS 2124. A study of systems-level programming in the Windows Operating System. Focus on concepts and tools to support the construction of Windows systems programs. Learn and use tools like Powershell, Python, and command prompt. Understand in detail how the registry works, how to audit and log system changes, how to create new users, how to manipulate access control lists, etc. Generally offered: Spring. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**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. Differential Tuition: \$150. Course Fees: IUUCS \$45; DL01 \$75.

**CS 3733. Operating Systems. (3-0) 3 Credit Hours.**

Prerequisites: CS 3424, CS 3443, and CS 3843 (Formerly CS 3844). 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. Differential Tuition: \$150. Course Fees: IUUCS \$45; DL01 \$75.

**CS 3743. Database Systems. (3-0) 3 Credit Hours.**

Prerequisites: CS 2233 and CS 3424. 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. Generally offered: Fall, Spring. Differential Tuition: \$150. Course Fees: IUUCS \$45; DL01 \$75.



**CS 3753. Data Science. (3-0) 3 Credit Hours.**

Prerequisites: CS 2124 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. Differential Tuition: \$150. Course Fees: IUCS \$45; DL01 \$75.

**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. Differential Tuition: \$150. Course Fees: IUCS \$45; DL01 \$75.

**CS 3793. Artificial Intelligence. (3-0) 3 Credit Hours.**

Prerequisite: CS 3343. This course covers the construction of programs that use knowledge representation and reasoning to solve problems. Major topics include informed search, logical and probabilistic inference, machine learning, planning, and natural language processing. Generally offered: Fall, Spring. Course Fees: IUCS \$45. Differential Tuition: \$150.

**CS 3843. Computer Organization. (3-0) 3 Credit Hours.**

Prerequisite: CS 1714. 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 and CS 3844. Credit can only be earned for one of the following: CS 2733, CS 3844, or CS 3843.) Generally offered: Fall, Spring. Course Fees: IUCS \$45. Differential Tuition: \$150.

**CS 3853. Computer Architecture. (3-0) 3 Credit Hours.**

Prerequisites: CS 3843 and CS 2124. 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: IUCS \$45; DL01 \$75. Differential Tuition: \$150.

**CS 3873. Computer Networks. (3-0) 3 Credit Hours.**

Prerequisites: CS 3424 and CS 3443. 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. Differential Tuition: \$150. Course Fees: IUCS \$45; DL01 \$75.

**CS 4013. Fundamentals of Software. (3-0) 3 Credit Hours.**

Prerequisite: Consent of instructor. This course is a bridge course for non-Computer Science students. It cannot be applied to the undergraduate degrees in computer science. Topics include discrete math, advanced data structure and basic algorithms, such as binary tree and stack, as well as system programming basics and concepts of compilation. Generally offered: Fall, Spring. Course Fees: IUCS \$45. Differential Tuition: \$150.

**CS 4023. Fundamentals of Systems. (3-0) 3 Credit Hours.**

Prerequisite: Consent of instructor. This course is a bridge course for non-Computer Science students. It cannot be applied to the undergraduate degrees in computer science. Topics include basic concepts and knowledge in computer organization, architecture, operating systems, and compilers. Generally offered: Fall, Spring. Course Fees: IUCS \$45. Differential Tuition: \$150.

**CS 4223. Bioinformatics I: Algorithms for Biological Data. (3-0) 3 Credit Hours.**

Prerequisites: CS 3343. Study of algorithmic techniques in modeling and analyzing large-scale biological data such as biological sequences, gene expression, and biological networks. Topics include, but are not limited to, dynamic programming and string pre-processing for sequence comparison, heuristic search algorithms for pattern discovery, and graph algorithms for biological network analysis. Some fundamental concepts of molecular biology will also be introduced. Generally offered: Fall. Course Fees: IUCS \$45. Differential Tuition: \$150.

**CS 4233. Bioinformatics II: Statistical Learning for Biological Data. (3-0) 3 Credit Hours.**

Prerequisites: CS 3753 or CS 4223. Study of statistical techniques in modeling and analyzing large-scale biological data with emphasis on integrating information and tools from publicly available biological databases to address complex problems. Topics include, but are not limited to, statistical significance testing, clustering, classification, and dimension reduction. Basic biological concepts related to the applications will also be covered. Generally offered: Spring. Course Fees: IUCS \$45. Differential Tuition: \$150.

**CS 4243. Large-Scale Data Management. (3-0) 3 Credit Hours.**

Prerequisites: CS 3424. This course presents an introduction to research and enterprise data management. Students will learn about scalable approaches to managing large-scale datasets. Application of High-Performance Computing, High-Throughput Computing, and AI for managing large-scale datasets will be covered. An overview of the SQL and NoSQL database management systems will also be included. Generally offered: Spring. Course Fees: IUCS \$45. Differential Tuition: \$150.

**CS 4253. Machine Learning. (3-0) 3 Credit Hours.**

Prerequisite: CS 3343 and CS 3753. Study of fundamental concepts and methods of machine learning. Topics include unsupervised learning, supervised learning, reinforcement learning, and other advanced topics selected by instructor. Generally offered: Fall. Course Fees: IUCS \$45. Differential Tuition: \$150.

**CS 4263. Deep Learning. (3-0) 3 Credit Hours.**

Prerequisite: One of the following: CS 3753, CS 3793, CS 4233, or CS 4253. Study of advanced techniques for learning models. Algorithmic and hands-on introduction to deep neural networks and adversarial learning. Topics include convolutional models, generative networks, neural network vulnerabilities, and attention models, with applications in natural language understanding and computer vision. Generally offered: Spring. Differential Tuition: \$150. Course Fee: IUCS \$45.

**CS 4303. Introduction to Optimization. (3-0) 3 Credit Hours.**

Prerequisites: (MAT 2214 and MAT 2233) or EGR 3323 or (MAT 1224 and CS 3333). May include Discrete, Continuous, Linear, and non-Linear optimization. Optimality conditions, Lagrange multipliers, duality theory. Applications of linear programming in computer science and discrete optimization. Gradient descent and Newton iteration (i.e., RST and second order methods), trust region methods, and conjugate gradient. Applications of RST and second order methods to engineering. Same as MAT 4343. Credit cannot be earned for both CS 4303 and MAT 4343. Generally offered in Fall. Course Fees: IUCS \$45. Differential Tuition: \$150.



**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. Generally Offered: Spring. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**CS 4333. Probability and Computing. (3-0) 3 Credit Hours.**

Prerequisites: CS 3333 or MAT 2313. May include moments of random variables: randomized mincut algorithm, Chebyshev and Markov inequalities, sampling estimator for mean. Basic Concentration Inequalities: Chernoff and Hoeffding inequalities; parameter estimation and set balancing. Discrete probabilistic structures: Bucket sort algorithm, Poisson approximation, Lovasz local Lemma, independent set search. The Gaussian: Moment Generating Functions, Central Limit Theorem, JL dimensionality reduction lemma. Markov Chains and Random Walks: Stationary Distributions, and randomized 3-SAT algorithm, Entropy Function: Information and Compression. Same as with MAT 4333. Credit cannot be earned for both CS 4333 and MAT 4333. Generally offered in Springs. Course Fees: IUUCS \$45. Differential Tuition: \$150.

**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. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**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. Generally offered: Spring. Differential Tuition: \$150. Course Fees: IUUCS \$45; DL01 \$75.

**CS 4373. Data Mining. (3-0) 3 Credit Hours.**

Prerequisites: CS 3343 and CS 3753. 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. Generally offered: Fall. Course Fees: IUUCS \$45. Differential Tuition: \$150.

**CS 4383. Computer Graphics. (3-0) 3 Credit Hours.**

Prerequisites: CS 2124 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. Generally offered: Spring. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**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. Differential Tuition: \$150. Course Fees: IUUCS \$45; DL01 \$75.

**CS 4413. Web Technologies. (3-0) 3 Credit Hours.**

Prerequisite: CS 3424. Fundamentals of Web and component technology: markup languages, layout design, client and server side programming, database and Web integration. Generally offered: Fall. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**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. Generally offered: Fall, Spring. Differential Tuition: \$150. Course Fees: IUUCS \$45; DL01 \$75.

**CS 4453. Penetration Testing. (3-0) 3 Credit Hours.**

Prerequisite: CS 3873. Introduction to the principles and techniques associated with the cyber security practice known as penetration testing or ethical hacking. The course covers planning, reconnaissance, scanning, exploitation, post-exploitation, and result reporting. Students learn how to use penetration testing tools, how to discover system vulnerabilities and how to avoid exploitation of vulnerabilities. Generally offered: Spring. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**CS 4463. Steganography. (3-0) 3 Credit Hours.**

Prerequisite: CS 3424. Steganography literally means "covered writing" and is the science of hiding secret data within innocuous data. This course covers a broad set of background topics including data compression, encryption, hashing, number theory, and human perception. Then we delve into the aspects and techniques for data hiding using image and audio files for data hiding. This includes bitmaps, jpegs, and wave files. We also explore steganalysis—the detection of hidden data—in the various file types. We also discuss the use of steganography in practice, particularly use by malware. There is a course project where a team of students develop and test their own steganography program. Generally offered: Spring, Summer. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**CS 4473. Cryptocurrencies and Bitcoins. (3-0) 3 Credit Hours.**

Prerequisite: CS 3113. This course introduces the concept of public permission-less blockchains and discusses the various applications that it enables. It specifically focuses on the cryptocurrency application of such distributed systems, with an emphasis on Bitcoins. This course will cover the following topics: blockchain fundamentals, operation of the Bitcoin cryptocurrency, Bitcoin security, user privacy and anonymity in Bitcoin, Bitcoin as a distributed application platform, Bitcoin and cryptocurrency regulation, future of Bitcoins and cryptocurrencies, Ethereum and Smart Contracts. Generally offered: Fall. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**CS 4483. Cyber Security Foundations and Practice. (3-0) 3 Credit Hours.**

Prerequisite: CS 3113. Advanced study of fundamental cyber security and privacy technologies and their applications in modern and emerging cyber systems such as social media, cloud computing, internet of things, cyber-physical systems and cryptocurrencies. Generally offered: Spring. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**CS 4493. Advanced Topics in Cyber Security. (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. Generally offered: Fall, Spring. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**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. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**CS 4613. Senior Design I. (3-0) 3 Credit Hours.**

Prerequisites: CS 3443 and CS 3773. Students will self-organize into teams, prepare/propose project scope, gather requirements, produce specifications, analyze security and other risk factors, and present their designs. Industrial collaboration and/or faculty sponsorship of these projects is encouraged. Not more than a total of 6 semester credit hours of Internship, Independent Study, Senior Design, and Senior Thesis courses may count toward the Bachelor of Science degree in Computer Science. Generally offered: Fall, Spring. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**CS 4623. Senior Design II. (3-0) 3 Credit Hours.**

Prerequisite: CS 4613. Students continue the development of an instructor-approved design project, testing of the design project, and present their findings, along with social and ethical impact considerations. Students who own their intellectual property are required to compete in CITE. Industrial collaboration and/or faculty sponsorship of these projects is encouraged. Not more than a total of 6 semester credit hours of Internship, Independent Study, Senior Design, and Senior Thesis courses may count toward the Bachelor of Science degree in Computer Science. Generally offered: Fall, Spring. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**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. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**CS 4643. Mobile and Wireless Network and Technologies. (3-0) 3 Credit Hours.**

Prerequisites: CS 3873 or Consent of Instructor. Introduces the latest mobile and wireless networking technologies and network software architectures as well as the application of IoT fundamentals for mobile/wireless computing systems. Students will be able to describe user associations and traffic routing in a mobile/wireless network, interaction of elements within the mobile/wireless core, and end-to-end delivery of a packet and/or signal and what happens with the hand-off at each step along the communications path. They will be able to explain architecture differences between different generations of mobile/wireless network technologies and design and build a mobile/wireless IoT application from ground up to demonstrate their understandings. Generally offered: Spring. Course Fees: IUUCS \$45; DL01 \$75. Differential Tuition: \$150.

**CS 4653. Software and Malware Reverse Engineering. (3-0) 3 Credit Hours.**

Prerequisites: CS 3843 (Formerly CS 3844), and CS 3113 or CS 3433. An introduction to the basic procedures to reverse engineering of software, hardware and malware. Generally offered: Spring. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**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. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**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. Generally offered: Fall, Spring. Differential Tuition: \$150. Course Fees: IUUCS \$45; DL01 \$75.

**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. Generally offered: Spring. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**CS 4713. Compiler Construction. (3-0) 3 Credit Hours.**

Prerequisites: CS 3723 and CS 3843 (Formerly CS 3844). 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."). Generally offered: Spring. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**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. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**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.") Generally offered: Fall. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**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. Generally offered: Fall. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**CS 4783. Advanced Software Engineering. (3-0) 3 Credit Hours.**

Prerequisites: CS 3743 and CS 3773. This course covers modern software development technology. Students utilize Swagger and JavaScript or Python to build a database-enabled RESTful web service component. Using a DevOps pipeline, students test and deploy their project using tools like Gitlab, CI/CD, OWASP ZAP, Docker, and Kubernetes. Generally offered: Spring. Course Fees: IUUCS \$45. Differential Tuition: \$150.

**CS 4823. Parallel Programming. (3-0) 3 Credit Hours.**

Prerequisites: CS 3343 and CS 3424. Parallel programming concepts (partitioning, synchronization and communication, programming models-shared memory based and message based), programming tools and languages, performance issues. Generally offered: Fall. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**CS 4833. Embedded Systems. (3-0) 3 Credit Hours.**

Prerequisite: CS 3843 (Formerly CS 3844). 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. Generally offered: Fall. Differential Tuition: \$150. Course Fee: IUUCS \$45.

**CS 4843. Cloud Computing. (3-0) 3 Credit Hours.**

Prerequisite: CS 3424. 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. Generally offered: Fall, Spring, Summer. Differential Tuition: \$150. Course Fees: IUCS \$45; DL01 \$75.

**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.") Generally offered: Spring. Differential Tuition: \$150. Course Fee: IUCS \$45.

**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. Generally offered: Fall, Spring. Differential Tuition: \$150. Course Fee: IUCS \$45.

**CS 4883. Senior Thesis I. (3-0) 3 Credit Hours.**

Prerequisite: Consent of Instructor. The student learns how to conduct independent research. He/she selects a thesis topic, conducts a literature review, plans and executes an experiment, and gathers and analyzes data. Faculty sponsorship of the thesis is required and a faculty member should agree to sponsor the student before Senior Thesis I begins. Not more than a total of 6 semester credit hours of Internship, Independent Study, Senior Design; and Senior Thesis courses may count toward the Bachelor of Science degree in Computer Science. Generally offered: Fall, Spring. Differential Tuition: \$150. Course Fee: IUCS \$45.

**CS 4893. Senior Thesis II. (3-0) 3 Credit Hours.**

Prerequisite: Consent of Instructor. The student writes the thesis through a series of assignments. The student also prepares a presentation of his/her research and presents the thesis to the public during a Computer Science undergraduate research symposium. Faculty sponsorship of the thesis is required and should be the same faculty member from Thesis I (special exceptions are possible). Not more than a total of 6 semester credit hours of Internship, Independent Study, Senior Design, and Senior Thesis courses may count toward the Bachelor of Science degree in Computer Science. Generally offered: Fall, Spring. Differential Tuition: \$150. Course Fee: IUCS \$45.

**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 of Independent Studies (CS 4911, CS 4912, CS 4913), Undergraduate Research (CS 4923), Senior Designs (CS 4613, CS 4623), and Internship (CS 4933), regardless of discipline, will apply to a bachelor's degree. Generally offered: Fall, Spring. Course Fees: IUCS \$15. Differential Tuition: \$50.

**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 of Independent Studies (CS 4911, CS 4912, CS 4913), Undergraduate Research (CS 4923), Senior Designs (CS 4613, CS 4623), and Internship (CS 4933), regardless of discipline, will apply to a bachelor's degree. Generally offered: Fall, Spring. Course Fees: IUCS \$30. Differential Tuition: \$100.

**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 of Independent Studies (CS 4911, CS 4912, CS 4913), Undergraduate Research (CS 4923), Senior Designs (CS 4613, CS 4623), and Internship (CS 4933), regardless of discipline, will apply to a bachelor's degree. Generally offered: Fall, Spring. Course Fees: IUCS \$45. Differential Tuition: \$150.

**CS 4923. Undergraduate Research. (0-0) 3 Credit Hours.**

Prerequisites: Undergraduate standing in Computer Science and 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. The undergraduate research course should involve a laboratory, experimental and/or a theoretical problem. May be repeated for credit, but not more than 6 semester credit hours of Independent Studies (CS 4911, CS 4912, CS 4913), Undergraduate Research (CS 4923), Senior Designs (CS 4613, CS 4623), and Internship (CS 4933), regardless of discipline, will apply to a bachelor's degree. Generally offered: Fall, Spring. Course Fees: IUCS \$45. Differential Tuition: \$150.

**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 6 semester credit hours of Independent Studies (CS 4911, CS 4912, CS 4913), Undergraduate Research (CS 4923), Senior Designs (CS 4613, CS 4623), and Internship (CS 4933) may count toward the Bachelor of Science degree in Computer Science. Generally offered: Fall, Summer. Course Fees: IUCS \$45. Differential Tuition: \$150.

**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. Differential Tuition: \$150. Course Fee: IUCS \$45.

**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. Generally offered: Fall, Spring. Differential Tuition: \$150. Course Fee: IUCS \$45.

**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. Generally offered: Fall, Spring. Differential Tuition: \$150. Course Fee: IUCS \$45.



**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. Generally offered: Fall, Spring. Differential Tuition: \$150. Course Fee: IUCS \$45.

## 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; DL01 \$75.

**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; DL01 \$75.

**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 fieldwork. (Formerly CSM 3111. Credit cannot be earned for both CSM 3113 and CSM 3111.) Course Fees: SAP1 \$25; STSA \$15. Differential Tuition: \$165.

**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; DL01 \$75. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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; DL01 \$75. Differential Tuition: \$165.

**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; DL01 \$75. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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; DL01 \$75. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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; DL01 \$75. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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; DL01 \$75. Differential Tuition: \$165.

**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: DL01 \$75; SAP1 \$25; STSA \$15. Differential Tuition: \$165.

**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: DL01 \$75; SAP1 \$25; STSA \$15. Differential Tuition: \$165.

**CSM 4911. Independent Study. (0-0) 1 Credit Hour.**

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the School Director, 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. Differential Tuition: \$55.

**CSM 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the School Director, 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. Differential Tuition: \$165.

**CSM 4931. Summer Internship. (0-0) 1 Credit Hour.**

Prerequisite: CSM 4623. 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. Must be repeated for credit and taken in consecutive five-week summer sessions. Generally offered: Summer. Course Fees: SAP1 \$25; STSA \$5. Differential Tuition: \$55.

**CSM 4932. Internship. (0-0) 2 Credit Hours.**

Prerequisite: CSM 4623. 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. Differential Tuition: \$110.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$330.

**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. Differential Tuition: \$165.

## 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 \$20.54; STSH \$30.81; DL01 \$75.

**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 \$20.54; STSH \$30.81; DL01 \$75.

## Criminology and 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: DL01 \$75; LRC1 \$12; STHC \$18.

**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 Fees: STHC \$18; DL01 \$75.

**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 Fees: STHC \$18; DL01 \$75.

**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: STHC \$18.



**CRJ 2623. Substantive Criminal Law. (3-0) 3 Credit Hours. (TCCN = CRIJ 1310)**

Prerequisite: CRJ 1113. 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. (Formerly CRJ 3623. Credit cannot be earned for both CRJ 3623 and CRJ 2623.) Generally offered: Fall, Spring. Course Fee: STHC \$18.

**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 Fees: STHC \$18.

**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 Fees: STHC \$18; DL01 \$75.

**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 Fees: STHC \$18; DL01 \$75.

**CRJ 3153. Crime Mapping I. (3-0) 3 Credit Hours.**

Prerequisite: CRJ 1113. Restricted to Criminology and Criminal Justice majors only. This course is an introduction to the spatial aspects of crime through the exploration of theory, methods, and the use of Geographic Information Systems (GIS). Further, this course will examine career prospects for those who are Criminology and Criminal Justice majors. Course Fee: STHC \$18.

**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: STHC \$18.

**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 Fees: STHC \$18; DL01 \$75.

**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: STHC \$18.

**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 Fees: STHC \$18; DL01 \$75.

**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 Fees: STHC \$18; DL01 \$75.

**CRJ 3643. Pretrial Diversion and Problem-Solving Courts. (3-0) 3 Credit Hours.**

This course will familiarize students with the history of pretrial diversion, traditional, and specialty or problem solving courts. Focus will be on the roles of the court "families" in these courts, and the course will provide an overview of their structure, decision-making processes, pretrial proceedings sentencing practices, as well as similarities and differences. Course Fee: STHC \$18.

**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 Fees: STHC \$18; DL01 \$75.

**CRJ 4153. Crime Mapping II. (3-0) 3 Credit Hours.**

Prerequisites: CRJ 1113 and CRJ 3153. Restricted to Criminology and Criminal Justice majors only. This course provides an advanced understanding of the spatial analysis of issues related to criminal justice and crime mapping. Students will ask and investigate spatial problems, display and present spatial information, and conduct and report spatial research in areas relevant to criminal justice. Course Fee: STHC \$18.

**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: STHC \$18.

**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 Fees: STHC \$18; DL01 \$75.

**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 Fees: STHC \$18; DL01 \$75.

**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: STHC \$18.

**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 Fees: STHC \$18; DL01 \$75.

**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 Fees: STHC \$18; DL01 \$75.

**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: STHC \$18.

**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: STHC \$18.

**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: STHC \$18.

**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: STHC \$18.

**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: STHC \$18.

**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 Fees: STHC \$18; DL01 \$75.

**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: STHC \$18.

**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: STHC \$18.

**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) 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 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: STHC \$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) 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 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: STHC \$18.

**CRJ 4933. Internship in Criminal Justice. (0-0) 3 Credit Hours.**

Prerequisites: CRJ 1113, CRJ 2153, CRJ 3013, and 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; STHC \$18.

**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 Fees: STHC \$18; DL01 \$75.

**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: STHC \$18.

## Curriculum and Instruction (CI)

### Curriculum and Instruction (CI) Courses

**CI 4203. Teaching and Learning in the Secondary Classroom. (3-0) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, EDP 3203, and EDU 2103; prior or concurrent enrollment in EED 2013 and EDP 4203 is required. 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 across content areas. Course will address special populations of students, application of instructional media, technology, and classroom management for the content areas. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81.

**CI 4213. Music Methods. (3-0) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, EDP 3203, and EDU 2103. This course is designed to provide music teacher candidates with the necessary knowledge and skills to prepare for successfully planning, implementing, and evaluating music instruction. This course may be offered in multiple sections to accommodate choral and instrumental music instruction in various contexts. Field experience required. (Formerly C&I 4213. Credit cannot be earned for both CI 4213 and C&I 4213.) Generally offered: Fall. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**CI 4223. Secondary Mathematics Methods. (3-0) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, EDP 3203, and EDU 2103; prior or concurrent enrollment in EED 2013 and EDP 4203 is required. Study of curricular, instructional, and management approaches to mathematics in secondary schools. Emphasis on developing instructional and curricular strategies that are effective in diverse teaching contexts. Course will address teaching special populations of students, the application of instructional technology and multimedia, and developing classroom culture and ecology. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for CI 4646 or CI 4643 Clinical Teaching: Grades 7-12. Field experience required. Restricted course, advisor code required for registration. (Formerly C&I 4223. Credit cannot be earned for both CI 4223 and C&I 4223.) Generally offered: Fall, Spring. Not offered in the Summer. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**CI 4233. Secondary Social Studies Methods. (3-0) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, EDP 3203, and EDU 2103; prior or concurrent enrollment in EED 2013 and EDP 4203 is required. A study of methods, materials, and processes for teaching social studies in secondary school settings. Topics include the effective implementation of social studies curriculum and standards, pacing and planning for instruction, authentic formative and summative assessment, and cultivating cultural and critical competence. Special emphasis is placed on interdisciplinary and multicultural connections using integrated and thematic unit planning. 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 CI 4646 or CI 4643 Clinical Teaching: Grades 7-12. Field experience required. (Formerly C&I 4233. Credit cannot be earned for both CI 4233 and C&I 4223.) Generally offered: Fall, Spring. Not offered in the Summer. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81.

**CI 4243. Secondary Science Methods. (3-0) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, EDP 3203, and EDU 2103; prior or concurrent enrollment in EED 2013 and EDP 4203 is required. Study of curricular, instructional, and management approaches to science in secondary schools. Emphasis on developing instructional and curricular strategies that are effective in diverse teaching contexts. Course will address teaching special populations of students, the application of instructional technology and multimedia, and developing classroom culture and ecology. 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 CI 4646 Clinical Teaching: Grades 7-12. Field experience required. (Formerly C&I 4243. Credit cannot be earned for both CI 4243 and C&I 4243.) Generally offered: Fall, Spring. Not offered in the Summer. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**CI 4253. Secondary English Language Arts and Reading Methods. (3-0) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, EDP 3203, and EDU 2103; prior or concurrent enrollment in EED 2013 and EDP 4203 is required. Study of curricular, instructional, and management approaches to English language arts and reading in secondary schools. Emphasis on developing instructional and curricular strategies that are effective in diverse teaching contexts. Course will address teaching special populations of students, the application of instructional technology and multimedia, and developing classroom culture and ecology. 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 CI 4643 or CI 4646 Clinical Teaching: Grades 7-12. Field experience required. (Formerly C&I 4253. Credit cannot be earned for both CI 4253 and C&I 4253.) Generally offered: Fall, Spring. Not offered in the Summer. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81.

**CI 4263. Secondary Music Methods. (3-0) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, EED 2013, 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 teaching special populations of students, the application of instructional technology and multimedia, and developing classroom culture and ecology. Restricted course, advisor code required for registration. This course may be offered in multiple sections to accommodate choral and instrumental music instruction. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for CI 4716 Clinical Teaching: All Level EC-12. Field experience required. (Formerly C&I 4263. Credit cannot be earned for both CI 4263 and C&I 4263.) Generally offered: Fall, Spring. Not offered in the Summer. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81.

**CI 4273. Methods of Teaching Content in the Elementary School-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. (Same as KIN 4303. Credit cannot be earned for both CI 4273 and KIN 4303.) Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81.

**CI 4283. EC-12 Art Methods. (3-0) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, EED 2013, EDP 3203, and EDU 2103. Study of curricular, instructional, and management methods in teaching Art in early childhood, elementary, middle, and secondary settings. Emphasis on developing instructional and curricular strategies that are effective in diverse teaching contexts. Course will address teaching special populations of students, the application of instructional technology and multimedia, and developing classroom culture and ecology. 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 CI 4716 Clinical Teaching: All Level EC-12. Field experience required. Generally offered: Fall, Spring. Not offered in the Summer. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81.

**CI 4293. EC-12 Languages Other Than English (LOTE) Methods. (3-0) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, EED 2013, EDP 3203, and EDU 2103. Study of curricular, instructional, and management methods in teaching languages other than English (LOTE) in early childhood, elementary, middle, and secondary settings. Emphasis on developing instructional and curricular strategies that are effective in diverse teaching contexts. Course will address teaching special populations of students, the application of instructional technology and multimedia, and developing classroom culture and ecology. 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 CI 4716 Clinical Teaching: All Level EC-12. Field experience required. (Formerly C&I 4293. Credit cannot be earned for both CI 4293 and C&I 4293.) Generally offered: Fall, Spring. Not offered in the Summer. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81.

**CI 4303. Social Studies Methods in Early Childhood-Grade 6. (2-2) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, CI 4353, CI 4403, ECE 4203, and LTED 3823; concurrent enrollment in LTED 3813 is required for EC-6 ESL students; may not be taken concurrently with CI 4353, CI 4403, ECE 4203, or LTED 3823. A study of methods, materials, and processes for teaching social studies in early childhood through grade 6. Topics include the effective implementation of social studies curriculum and standards, pacing and planning for instruction, authentic formative and summative assessment, and cultivating cultural and critical competence. Special emphasis is placed on interdisciplinary and multicultural connections using integrated and thematic unit planning. This course must be completed with a grade of "B-" or better. Restricted course, advisor code required for registration. CI 4621 Clinical Teaching required. (Formerly C&I 4303. Credit cannot be earned for both CI 4303 and C&I 4303.) Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**CI 4313. Methods of Teaching Content in the Secondary School- 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. (Same as KIN 4203. Credit cannot be earned for both KIN 4203 and CI 4313.) Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.



**CI 4353. Science Methods in Early Childhood–Grade 6. (2-2) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, ECE 3143, ECE 3313, and ECE 3603; concurrent enrollment in CI 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 it to serve as a prerequisite for CI 4611 and CI 4621. Restricted course; advisor code required for registration. Field experience required. (Formerly C&I 4353. Same as BBL 4353. Credit can only be earned for one course: CI 4353, C&I 4353, or BBL 4353.) Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75. .

**CI 4403. Mathematics Methods in Early Childhood–Grade 6. (2-2) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, ECE 3143, ECE 3313, and ECE 3603; concurrent enrollment in CI 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 mathematic 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 it to serve as a prerequisite for CI 4611 and CI 4621. Restricted course, advisor code required for registration. Field experience required. (Same as BBL 4403. Formerly C&I 4403. Credit can only be earned for one course: CI 4403, C&I 4403, or BBL 4403.) Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81.

**CI 4433. Science Methods in Grades 4-8. (3-0) 3 Credit Hours.**

Prerequisites: Must be admitted to the Teacher Certification Program; completion of CI 4443, CI 4603, CI 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 CI 4626 or CI 4633 Clinical Teaching: Grades 4–8. (Formerly C&I 4413 and C&I 4433. Credit cannot be earned for more than one of the following: C&I 4413, C&I 4433, or CI 4433.) Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81.

**CI 4443. Mathematics Methods in Grades 4-8. (3-0) 3 Credit Hours.**

Prerequisites: Must be admitted to the Teacher Certification Program; completion of CI 4433, CI 4603, CI 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 CI 4626 or CI 4633 Clinical Teaching: Grades 4–8. (Formerly C&I 4423 and C&I 4443. Same as BBL 4443. Credit cannot be earned for more than one of the following: CI 4443, BBL 4443, C&I 4423, or C&I 4443.) Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81.

**CI 4543. Social Studies Methods in Grades 4-8. (3-0) 3 Credit Hours.**

Prerequisites: Must be admitted to the Teacher Certification Program; completion of CI 4553, CI 4603, CI 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. Pre-service teachers examine models of teaching and learning to develop the knowledge, values, and experiential basis necessary for effective teaching. Students will demonstrate proficiency by creating lesson plans that specifically address the 4th–8th grade Social Studies standards and 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 CI 4626 and CI 4633 Clinical Teaching: Grades 4–8. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81.

**CI 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; completion of CI 4443, CI 4543, CI 4603, CI 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 CI 4626 or CI 4633 Clinical Teaching: Grades 4–8. (Formerly C&I 4523 and C&I 4553. Credit can only be earned for one of the following: CI 4553, C&I 4553, or C&I 4523.) Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**CI 4603. Classroom Management Strategies in Grades 4–8. (3-0) 3 Credit Hours.**

Prerequisites: Must be admitted to the Teacher Certification Program; for Grades 4–8 Mathematics/Science Certification Option: completion of CI 4433, CI 4443, CI 4623, and LTED 3533 in semester prior to clinical teaching; for Grades 4–8 Language Arts/Reading/Social Studies Certification Option: concurrent enrollment in CI 4543, CI 4553, CI 4623, and LTED 3533; for Grades 4–8 Generalist Certification Option: concurrent enrollment in CI 4433, CI 4443, CI 4543, CI 4623. 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 "B-" or better for it to serve as a prerequisite for CI 4626 or CI 4633 Clinical Teaching: Grades 4–8. (Formerly C&I 4603. Same as BBL 4603. Credit can only be earned for one of the following: CI 4603, C&I 4603, or BBL 4603.) Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.



**CI 4611. Clinical Teaching I: Early Childhood–Grade 6. (0-0) 1 Credit Hour.**

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: CI 4303, CI 4353, CI 4403, ECE 4143, ECE 4203, LTED 3823, and LTED 4833; a grade of "B-" or better in CI 4303, CI 4353, CI 4403, LTED 3823, and LTED 4833; a grade of "CR" is required for CI 4612 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; requires experience in an EC–6th grade school setting and in the certification area sought under the supervision of university faculty. The clinical 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 \$20.54; STF1 \$75; STSH \$10.27.

**CI 4612. Clinical Teaching I and II: Early Childhood–Grade 6. (0-0) 2 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: CI 4303, CI 4353, CI 4403, ECE 4143, ECE 4203, LTED 3823, and LTED 4833; a grade of "B-" or better in CI 4303, CI 4353, CI 4403, LTED 3823, and LTED 4833; a grade of "CR" is required for CI 4612 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; requires experience in an EC–6th-grade school setting and in the certification area sought under the supervision of university faculty. The clinical 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 \$20.54; STF1 \$75; STSH \$20.54.

**CI 4613. Clinical Teaching: Early Childhood–Grade 6. (0-0) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, completion of all requirements for admission to the EC–6 clinical teaching semester, completion of 21 semester credit hours of Professional Education: CI 4303, CI 4353, CI 4403, ECE 4143, ECE 4203, LTED 3823, and LTED 4833, a grade of "B-" or better in CI 4303, CI 4353, CI 4403, LTED 3823, and LTED 4833, and a grade of "CR" is required for CI 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. Will be repeated for two long semesters and requires half-day clinical teaching in an EC–6th grade school setting and in the certification area sought 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. May be repeated for credit. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81.

**CI 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, completion of 21 semester credit hours of Professional Education: CI 4303, CI 4353, CI 4403, ECE 4143, ECE 4203, LTED 3823, and LTED 4833, a grade of "B-" or better in CI 4303, CI 4353, CI 4403, LTED 3823, and LTED 4833, and a grade of "CR" is required for CI 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. (Formerly C&I 4616. Credit cannot be earned for both CI 4616 and C&I 4616.) Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$61.62.

**CI 4621. Clinical Teaching II: Early Childhood–Grade 6. (0-0) 1 Credit Hour.**

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: CI 4303, CI 4353, CI 4403, ECE 4143, ECE 4203, LTED 3823, and LTED 4833; a grade of "B-" or better in CI 4303, CI 4353, CI 4403, LTED 3823, and LTED 4833; a grade of "CR" is required for CI 4612 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, and completion of 18 semester credit hours of Professional Education: BBL 4033, BBL 4063, BBL 4073, BBL 4353, BBL 4403, and LTED 3823; Requires experience in an EC–6th grade school setting and in the certification area sought under the supervision of university faculty. Clinical 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 \$20.54; STF1 \$75; STSH \$10.27.

**CI 4623. Applied Teaching: Grades 4–8. (3-0) 3 Credit Hours.**

Prerequisites: Must be admitted to the Teacher Certification Program; for Grades 4–8 Mathematics/Science Certification Option: concurrent enrollment in CI 4433, CI 4443, CI 4603, and LTED 3533; for Grades 4–8 Language Arts/Reading/Social Studies Certification Option: concurrent enrollment in CI 4543, CI 4553, CI 4603, and LTED 3533; for Grades 4–8 Generalist Certification Option: concurrent enrollment in CI 4433, CI 4443, CI 4543, CI 4603, and LTED 3533. 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 CI 4626 or CI 4633 Clinical Teaching: Grades 4–8. (Formerly C&I 4623. Credit cannot be earned for both CI 4623 and C&I 4623.) Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**CI 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, completion of 21 semester credit hours: CI 4603, EDP 3303, ESL 3073, MAT 1023, LTED 3533, LTED 3633, LTED 3803, and a grade of "CR" 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 Mathematics/Science students: The following courses completed with a grade of "B-" or better: CI 4433, CI 4443, CI 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: CI 4543, CI 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, CI 4433 or CI 4443, and CI 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 \$20.54; STF1 \$75; STSH \$61.62.

**CI 4633. Clinical Teaching: Grades 4-8. (0-0) 3 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, completion of 21 semester credit hours: CI 4603, EDP 3303, ESL 3073, MAT 1023, LTED 3533, LTED 3633, LTED 3803, and a grade of "CR" 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 Mathematics/Science students: The following courses completed with a grade of "B-" or better: CI 4433, CI 4443, CI 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: CI 4543, CI 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, CI 4433 or CI 4443, and CI 4603. Will be repeated for two long semesters and requires half-day clinical teaching in an elementary/middle school setting and in the certification area sought 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. May be repeated for credit. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81.

**CI 4643. Clinical Teaching: Grades 7-12. (0-0) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, completion of the clinical teaching semester, and completion of CI 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 CI 4203, a grade of "CR" is required for the clinical teaching course to be recommended for teacher certification; and individuals must apply to the director of clinical teaching one semester in advance. Will be repeated for two long semesters and requires half-day clinical teaching in a high school (7–12) setting and in the certification area sought 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. Individuals pursuing a Basic Secondary certification, 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. May be repeated for credit. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81.

**CI 4646. Clinical Teaching: Grades 7–12. (0-0) 6 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, completion of the clinical teaching semester, completion of CI 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 CI 4203 and a grade of "CR" is required for the clinical teaching course to be recommended for teacher certification; and 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 certification, 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 UTE 4646. Credit cannot be earned for both UTE 4646 and CI 4646.) Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$61.62.

**CI 4713. Clinical Teaching: All Level EC-12. (0-0) 3 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 "B-" or better and a grade of "CR" is required for the clinical teaching course to be recommended for teacher certification; All-Level Health Education students: Completion of CI 4203, and EDP 3303 with a grade of "B-" or better and a grade of "B-" 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 CI 4716, and a grade of "B-" or better is required for the clinical teaching course to be recommended for teacher certification; All-Level Music students: Completion of CI 4623, CI 4213, EDP 3203, and LTED 3773, a grade of "B-" or better in CI 4203 and CI 4213, and a grade of "CR" 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 CI 4203, EDU 2103, EDP 3203 or EDP 3303, EDP 4203, and LTED 3523 or LTED 3773, grade of "B-" or better in CI 4203, and a grade of "CR" 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, completion of CI 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 CI 4203, a grade of "CR" is required for the clinical teaching course to be recommended for teacher certification, and all courses for degree/certification plan must be completed prior to clinical teaching. Will be repeated for two long semesters and requires half-day clinical teaching in an elementary or middle school setting and in a high school setting (grades 7–12) in the certification area sought 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. Meets clinical teaching requirements for the All-Level certification. Seminars explore issues in teaching practice. A grade of "CR" 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. May be repeated for credit. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81.

**CI 4716. Clinical Teaching: All Level EC–12. (0-0) 6 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program and 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 "B-" or better and a grade of "CR" is required for the clinical teaching course to be recommended for teacher certification; All-Level Health Education students: Completion of CI 4203 and EDP 3303 with a grade of "B-" or better and a grade of "CR" 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 CI 4716, and a grade of "CR" is required for the clinical teaching course to be recommended for teacher certification; All-Level Music students: Completion of CI 4263, CI 4213, EDP 3203, and LTED 3773, a grade of "B-" or better in CI 4203 and CI 4213, a grade of "CR" 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 CI 4203, EDU 2103, EDP 3203 or EDP 3303, EDP 4203, and LTED 3523 or LTED 3773, and a grade of "B-" or better in CI 4203, a grade of "CR" 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 CI 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 CI 4203, and a grade of "CR" 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 certification 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 certification. Seminars explore issues in teaching practice. A grade of "CR" 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. (Formerly C&I 4716. Credit cannot be earned for both CI 4716 and C&I 4716.) Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$61.62.

**CI 4801. Secondary Professional Learning Community. (1-0) 1 Credit Hour.**

Prerequisite: Admission to the Teacher Certification Program. This course is a professional learning community (PLC). The PLC serves as a touchstone in the secondary teacher certification program, bringing together preclinical and clinical teacher candidates within disciplinary areas to share and co-construct knowledge and skills applied to their field-based classroom experiences. By working in small groups of colleagues and peers, learning is emergent, responsive, and collaborative. Although the PLC is facilitated by faculty members with expertise in the specialty area, it is a vehicle for horizontal expertise where students and faculty alike share their expertise and insights. In this way, the PLC is a community of practice where teacher candidates come together to (a) share learning from various school- and community-based experiences, and (b) synthesize learning through reflection and discussion on teaching and being a teacher. Cohorts will repeat this course for 3 credits during the preclinical and clinical teaching experiences. Multiple discipline-based sections will be offered each semester, all preclinical and clinical teachers in a discipline will enroll in the same section throughout their program. Teacher candidates must pass the course with a B or better to qualify for clinical teaching. This course will not be offered in the Summer. Course fees: LRH1 \$20.54; STSH \$10.27.

**CI 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. (Formerly C&I 4911.) Course Fee: STSH \$10.27.

**CI 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. (Formerly C&I 4912.) Course Fee: STSH \$20.54.

**CI 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. (Formerly C&I 4913.) Course Fee: STSH \$30.81.

**CI 4923. Residency 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, or candidate admitted into Residency 2.0; consent of the Interdisciplinary Education 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. A grade of "CR" is required for CI 4923 to be recommended for teacher certification. May be repeated for credit. (Formerly C&I 4923. Credit cannot be earned for both C&I 4923 and CI 4923.) Course Fees: LRH1 \$20.54; STSH \$30.81.

**CI 4926. Residency 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, or candidate admitted into Residency 2.0; 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. A grade of "CR" is required for CI 4926 to be recommended for teacher certification. (Formerly C&I 4926. Credit cannot be earned for both C&I 4926 and CI 4926.) May be repeated for credit. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$61.62.

## 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 Fees: LRLF \$10.27; MC01 \$75; STLF \$18.48.

**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 Fees: LRLF \$10.27; MC01 \$75; STLF \$18.48.

**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 \$10.27; MC01 \$75; STLF \$18.48.

**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 Fees: LRLF \$10.27; MC01 \$75; STLF \$18.48.

**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 Fees: LRLF \$10.27; MC01 \$75; STLF \$18.48.



**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 Fees: LRLF \$10.27; MC01 \$75; STLF \$18.48.

**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 Fees: LRLF \$10.27; MC01 \$75; STLF \$18.48.

**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 Fees: LRLF \$10.27; MC01 \$75; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; MC01 \$75; STLF \$18.48.

**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 Fees: LRLF \$10.27; MC01 \$75; STLF \$18.48.

**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 Fees: LRLF \$10.27; MC01 \$25; STLF \$6.16.

**DAN 3802. UTSA Auxiliaries. (0-5) 2 Credit Hours.**

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 fees: LRLF \$10.27; STLF \$12.32; MC01 \$50.

**DAN 3803. UTSA Auxiliaries. (0-6) 3 Credit Hours.**

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 fees: LRLF \$10.27; STLF \$18.48; MC01 \$75.

## Data Science (DS)

### Data Science (DS) Courses

**DS 1001. Data Science and AI for All. (1-0) 1 Credit Hour.**

Prerequisite: Satisfactory performance on placement examination. The course is designed for students from all academic backgrounds to develop interests in data science and artificial intelligence. Introduction to the concept of analyzing data culled from a variety of sources, and understanding the methods of aggregating data, forming coherent queries, and building machine learning models to derive insights from data. Topics may include Python programming using Jupyter Notebook, R programming, text analysis, database, data analytics, and data visualization. Course Fee: LRDS \$12.50.

**DS 3023. Statistical Analysis for Data Science. (3-0) 3 Credit Hours.**

Prerequisite: MAT 1073 or the equivalent. Introduction to the scientific method; principles of sampling and experimentation; scales of measurement; exploratory data analysis; basic probability; models for discrete and continuous data; simple simulations and inferences based on resampling; fundamentals of hypothesis testing and confidence intervals; analysis of variance and linear regression model; tensors and matrices. The course will emphasize data analysis and interpretation and effective communication of results through reports or presentations within data science contexts. Course Fee: LRDS \$37.50.

**DS 4003. Introduction to Data Science. (3-0) 3 Credit Hours.**

Prerequisite: MAT 1073 or the equivalent. An introduction to foundational data science knowledge and life cycle. Focus areas on data visualization, data curation, ethics, and tools available for analysis will be covered. Course Fees: LRDS \$37.50; DL01 \$75.

**DS 4013. Programming for Data Science. (3-0) 3 Credit Hours.**

Prerequisite: MAT 1073 or the equivalent. An introduction to data-driven programming emphasizing problem solving and critical thinking. Topics will focus on foundational computer programming concepts and skills. Course Fees: LRDS \$37.50; DL01 \$75.

**DS 4023. Data Organization and Visualization. (3-0) 3 Credit Hours.**

Prerequisites: DS 3023, DS 4003, and DS 4013 or the equivalents. This course focuses on programming concepts, file input/output, and recursion that are involved in integrating, loading, processing, and transforming data from external sources for exploratory data analysis and visualization using data science software packages and APIs. Course Fees: LRDS \$37.50; DL01 \$75.

**DS 4033. Data Mining and Machine Learning. (3-0) 3 Credit Hours.**

Prerequisites: Completion of or concurrent enrollment in DS 4023. This course utilizes fundamental data science concepts to introduce in-depth analysis, data mining, machine learning, and artificial intelligence. Topics may include clustering, classification, evaluation metrics, supervised and unsupervised learning, search algorithms, intelligent agents, and AI applications in select areas. Course fee: DL01 \$75.



## Demography (DEM)

### Demography (DEM) Courses

#### **DEM 3223. Population Dynamics and Demographic Techniques. (3-0) 3 Credit Hours.**

This course 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. (Same as SOC 3223. Credit cannot be earned for both DEM 3223 and SOC 3223.) Course fees: LRHC \$10; STHC \$18.

#### **DEM 3323. Introduction to Social Research. (3-0) 3 Credit Hours.**

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. Same as SOC 3323. Credit cannot be given for both DEM 3323 and SOC 3323. Course fees: LRHC \$10; STHC \$18.

#### **DEM 3393. Quantitative Research Methods. (3-0) 3 Credit Hours.**

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. Credit cannot be earned for both DEM 3393 and SOC 3393. Course fees: LRHC \$10; STHC \$18.

#### **DEM 4013. Geographic Information Systems for Population Analysis and Policy. (3-0) 3 Credit Hours.**

This course will introduce the use of Geographic Information Systems (GIS) software, with applications in demography and policy-related disciplines. As part of the course, students will work on real data related to measuring population composition and change, with special relevance to policy related decision making. Course Fees: LRHC \$10; STHC \$18.

#### **DEM 4863. Special Topics In Demography. (3-0) 3 Credit Hours.**

Special topics in Demography. Course fees: LRHC \$10; STHC \$18.

#### **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 Fees: LRHC \$10; STHC \$18; DL01 \$75.

## 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 \$20.54; STSH \$30.81.

#### **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 \$20.54; STSH \$30.81; DL01 \$75.

#### **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 \$20.54; STSH \$30.81.

#### **ECE 3143. Child Growth and Development. (3-0) 3 Credit Hours.**

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 \$20.54; STSH \$30.81; DL01 \$75.

#### **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 \$20.54; STSH \$30.81; DL01 \$75.

#### **ECE 3313. Play, Creativity, and Learning. (3-0) 3 Credit Hours.**

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 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**ECE 3603. Language and Literacy Acquisition. (3-0) 3 Credit Hours.**

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 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**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 \$20.54; STSH \$30.81.

**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 \$20.54; STSH \$30.81.

**ECE 4143. Principles and Practices of Differentiated Education EC-6. (3-0) 3 Credit Hours.**

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 \$20.54; STSH \$30.81; DL01 \$75.

**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 \$20.54; STSH \$30.81.

**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 CI 4403 or CI 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 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**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 \$20.54; STSH \$30.81.

**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 Fees: INT1 \$100; STSH \$20.54.

**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 Fees: INT1 \$100; STSH \$20.54.

**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 Fees: INT1 \$100; STSH \$20.54.

**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 Fees: LRH1 \$20.54; STSH \$30.81.

**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 \$30.81.

# Economics (ECO)

## 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. This course is designed for nonbusiness majors and cannot be applied toward a degree in the Carlos Alvarez College of Business. May be applied toward the core curriculum requirement in Social and Behavioral Sciences. Generally offered: Fall, Spring, Summer. Course Fees: BISP \$10; BTSI \$15.41; DL01 \$75; LRB1 \$15.41; 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 \$15.41; DL01 \$75; LRB1 \$15.41.

### **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 \$15.41; DL01 \$75; LRB1 \$15.41; LRC1 \$12.

### **ECO 3013. Intermediate Microeconomics. (3-0) 3 Credit Hours.**

Prerequisites: Completion of 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 actions are also examined. (Formerly titled "Theory of Price." Credit cannot be earned for both Theory of Price and Intermediate Microeconomics). Generally offered: Fall, Spring. Differential Tuition: \$126.

### **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. Differential Tuition: \$126.

### **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. Differential Tuition: \$126. Course fee: DL01 \$75.

### **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. Systematic approach to economic analysis using algebra and calculus; modeling and treatment of optimizing behavior with applications to micro and macro economics; emphasis on understanding and application of analytical techniques. Generally offered: Fall, Spring. Differential Tuition: \$126. Course fee: DL01 \$75.

### **ECO 3123. Introduction to Econometrics. (3-0) 3 Credit Hours.**

Prerequisites: Completion of MAT 1133, and one of STA 1053 or STA 3003 or MS 1023, or their equivalents, and with a grade of "C-" or better. An introduction to statistical techniques for estimating economic relationships, testing economic theories, and evaluating government and business policy. Major topics include causal inference in the analysis of non-experimental data and implementing common econometric methods in statistical software. (Formerly titled "Introduction to Econometrics and Business Forecasting.") Generally offered: Fall, Spring. Differential Tuition: \$126.

### **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. 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. Differential Tuition: \$126.

### **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. 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. Differential Tuition: \$126.

### **ECO 3193. International Economics. (3-0) 3 Credit Hours.**

Prerequisite: Completion of ECO 2003 or ECO 2023, or the equivalent, with a grade of "C-" or better. 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. Differential Tuition: \$126.

### **ECO 3213. Economics of Antitrust and Regulation. (3-0) 3 Credit Hours.**

Prerequisite: Completion of ECO 2003 or ECO 2023, or the equivalent, with a grade of "C-" or better. 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. Differential Tuition: \$126.

### **ECO 3223. Sports Economics. (3-0) 3 Credit Hours.**

Prerequisite: ECO 2023. The course examines the impact of the sports industry on the U.S. and other global economies. The emphasis is given to the topics related to sport economics in the areas of industrial organization, public finance, and labor markets. Current sports-related economic policy issues are also addressed. Differential Tuition: \$126.

### **ECO 3233. Health Economics and Policy. (3-0) 3 Credit Hours.**

Prerequisite: Completion of ECO 2003 or ECO 2023, or the equivalent, with a grade of "C-" or better. The course examines and analyzes the ever-changing role of healthcare and its 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. Differential Tuition: \$126.

**ECO 3253. Economics of Public and Social Issues. (3-0) 3 Credit Hours.**

Prerequisite: Completion of ECO 2003 or ECO 2023, or the equivalent, with a grade of "C-" or better, or consent of instructor. A seminar on applying economic reasoning and models to a wide variety of public, ethical, and social issues. Differential Tuition: \$126.

**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.) Differential Tuition: \$126. Course fee: DL01 \$75.

**ECO 3413. Environmental Economics. (3-0) 3 Credit Hours.**

Prerequisites: Completion of ECO 2023 and MAT 1053, or their equivalents, with a grade of "C-" or better. Economic principles applied to environmental problems. Topics include benefit-cost analysis of environmental policies, valuation of environmental goods and services, pollution control, natural resource management, and climate change. (Formerly ECO 4273. Credit cannot be earned for both ECO 3413 and ECO 4273.) Differential Tuition: \$126.

**ECO 3513. Economics of Migration. (3-0) 3 Credit Hours.**

Prerequisite: ECO 2023, or the equivalent. An exploration of motives to migrate and the resulting socio-economic effects on migrants and the origin and destination countries. The design and implementation of immigration policies are also analyzed. Both theoretical models and empirical findings form the basis of study. Differential Tuition: \$126.

**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. 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. Differential Tuition: \$126.

**ECO 4303. Development Economics. (3-0) 3 Credit Hours.**

Prerequisites: Completion of ECO 2013 and ECO 2023, or their equivalents, with a grade of "C-" or better. 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 "Economics of Developing Countries.") Differential Tuition: \$126. Course fee: DL01 \$75.

**ECO 4413. Game Theory. (3-0) 3 Credit Hours.**

Prerequisites: ECO 3013 and MAT 1133, or their equivalents, with a "C-" or better. A study of strategic decision-making in interactive situations, with an emphasis on economics and business applications, including oligopolies, pricing, bargaining, and incentive contracts. The strategic role of commitment, credibility, unpredictability, and pre-emption are explored. Differential Tuition: \$126.

**ECO 4513. Industrial Organization. (3-0) 3 Credit Hours.**

Prerequisites: Completion of ECO 3013 and MAT 1133, or their equivalents, with a grade of "C-" or better. Theory and empirical evidence relating to the structure of industry and its effect on firms' conduct and performance, as well as the role of government policy and regulation on market competition and performance. (Formerly ECO 3263. Credit cannot be earned for both ECO 4513 and ECO 3263.) Differential Tuition: \$126.

**ECO 4553. Public Economics. (3-0) 3 Credit Hours.**

Prerequisites: Completion of ECO 3013 and MAT 1133, or their equivalents, with a grade of "C-" or better. Role of government in the economy; externalities and public goods; efficiency and equity analysis of taxation; incentives within government; fiscal federalism; discrimination and inequality; public policy issues. (Formerly ECO 3273. Credit cannot be earned for both ECO 4553 and ECO 3273.) Differential Tuition: \$126.

**ECO 4583. Labor Economics. (3-0) 3 Credit Hours.**

Prerequisites: ECO 3013 and MAT 1133, or their equivalents, with a grade of "C-" or better. Application of microeconomic theory to wage and employment determination in labor markets. Theoretical and empirical evaluation of current and proposed labor market regulations such as minimum wages, taxes, and universal basic income. Differential Tuition: \$126.

**ECO 4813. Seminar on Research in Economics. (3-0) 3 Credit Hours.**

Prerequisites: ECO 3013, ECO 3053, ECO 3123, and a major grade point average of 3.0 or higher, or consent of instructor and department chair. A seminar exploring the essential steps in the practice of research in economics: critical reading of existing literature, formulation of the research question, development of models or empirical strategies, writing of the research paper, and presentation of research findings. Differential Tuition: \$126.

**ECO 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: A 3.0 Carlos Alvarez College of Business grade point average, permission in writing (form available) from the instructor, the Department Chair, and the 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. Differential Tuition: \$126.

**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 Carlos Alvarez 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. May be repeated once for credit (for a total of 6 semester credit hours), provided they are with different organizations. Differential Tuition: \$126.

**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. Differential Tuition: \$126.



# 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 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

### **EDU 3002. Ethical and Legal Foundations of Education. (2-0) 2 Credit Hours.**

This course examines the ethical and legal issues that confront classroom teachers in their professional work, by (1) introducing students to various ethical and legal issues and identifying and examining those issues inherent in schools, (2) exploring various ethical and legal frameworks and principles and their applications, and (3) analyzing current school practices from the standpoint of potential ethical and legal controversies, including the ability to recognize “preventative law” situations. In addition to identifying pragmatic approaches to ethics and law, this course also involves students in academic discourse around issues of professional ethics, equity, social justice, and the democratic underpinnings of education. Significant attention will be devoted to the Code of Ethics and Standard Practices for Texas Educators and the Model Code of Ethics for Educators. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$20.54.

### **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 \$10.27.

### **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 \$20.54.

### **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 \$30.81.

### **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 Fees: LRH1 \$20.54; STSH \$30.81.

# 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 \$20.54; STSH \$30.81; DL01 \$75.

### **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 \$20.54; STSH \$30.81.

# 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 they 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. Course Fees: LRH1 \$20.54; STSH \$30.81.



**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, and Summer. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**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 and Spring. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**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 \$20.54; STSH \$30.81; DL01 \$75.

**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 \$20.54; STSH \$30.81.

**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 \$20.54; STSH \$30.81.

**EDP 4103. Introduction to School Psychology. (3-0) 3 Credit Hours.**

This seminar course examines the profession of school psychology, including: historical foundations of the school psychology profession, roles and functions of school psychologists, relationship to other specialties in psychology and education, graduate training and models of professional preparation, licensure, certification, career paths, diversity of practice settings, diversity of client populations served, current topics in research, educational settings, professional practice, and legal and ethical dilemmas facing school psychologists. Course fees: LRH1 \$20.54; STSH \$30.81.

**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, and Summer. Course Fees: LRH1 \$20.54; STSH \$30.81.

**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 \$20.54; STSH \$30.81.

**EDP 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 \$30.81.

**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 \$20.54; STSH \$30.81.

## Electrical Engineering (EE)

**NOTE: All prerequisites for Electrical Engineering (EE) courses must be completed with a grade of "C-" or better.**

### 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 \$25; STSE \$20; DL01 \$50.

**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 \$25; STSE \$30; DL01 \$75.

**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 circuit simulation software to solve network problems. One hour of problem solving recitation per week. Generally offered: Fall, Spring, Summer. Generally offered: Fall, Spring, Summer. Course Fees: LRE1 \$25; STSE \$30; DL01 \$75.

**EE 2511. Digital Circuit 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 \$25; STSE \$10.

**EE 2513. Logic Design. (3-1) 3 Credit Hours.**

Prerequisites: EE 1322 and completion of or concurrent enrollment in CS 2073 or CPE 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 \$25; STSE \$30; DL01 \$75.

**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. Differential Tuition: \$165. Course Fees: L001 \$30; DL01 \$75.

**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. Differential Tuition: \$165. Course Fee: DL01 \$75.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**EE 3233. Systems Programming for Engineers. (2-2) 3 Credit Hours.**

Prerequisite: EE 3223. Programming low-level interfaces of Linux using Python; learning basics of Linux utilities and Python, interfacing to services in the underlying Linux kernel using Python's system programming tools, supporting for running programs covering threads, process forks, processing files and directories and networking with pipes, socket, and queues in Python. Two hours of lecture, one hour of recitation and one hour of programming lab per week. Differential Tuition: \$165. Course fee: DL01 \$75.

**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 circuit simulation software to solve simple circuits. One hour of problem solving recitation per week. Generally offered: Fall, Spring, Summer. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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, and transfer functions. One hour of problem solving recitation per week. (Formerly EE 3424. Credit cannot be earned for both EE 3424 and EE 3423.) Differential Tuition: \$165. Course fee: DL01 \$75.

**EE 3463. Microcomputer Systems I. (3-1) 3 Credit Hours.**

Prerequisites: EE 2513 and CS 2073 or CPE 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. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165. Course Fees: L001 \$30; DL01 \$75.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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 circuit simulation software to analyze complex circuits. Generally offered: Fall, Spring, Summer. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

**EE 4463. Introduction to Machine Learning. (3-0) 3 Credit Hours.**

Prerequisite: EE 3533. Introduction to concepts of inference and learning. Introduction to concepts of regression and classification: linear and nonlinear regression; linear discriminant analysis, logistic regression and support vector machines. Introduction to dimensionality reduction and clustering. Introduction to artificial neural networks. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**EE 4523. Introduction to Nanoelectronics. (2-3) 3 Credit Hours.**

Prerequisite: Completion of or concurrent enrollment in EE 3323. Fundamentals of semiconductor device physics. State-of-the-art CMOS and beyond-CMOS device technologies. Quantum transport theories of electron, phonon, and spin in nanoscale solids. Nanofabrication techniques. Low-dimensional nanomaterials for future electronics. Practical application of nanotechnology in mechanical, optical, and biological heterogeneous systems. Students will study a quantum phenomenon using a device simulation software. (Formerly titled Introduction to Micro and Nanotechnology.) (Same as EE 5503. Credit cannot be earned for both EE 4523 and EE 5503.) Generally offered: Spring. Differential Tuition: \$165. Course fee: DL01 \$75.

**EE 4533. Principles of Microfabrication. (2-3) 3 Credit Hours.**

Prerequisite: Completion of or concurrent enrollment in EE 3323. Fundamentals of microfabrication techniques, including photolithography, thin film deposition (physical vapor deposition and chemical vapor deposition), etching, thermal oxidation, diffusion, ion implantation, chemical and mechanical polishing, and epitaxy. Nanofabrication techniques that enable sub-micron feature sizes will also be discussed (electron beam or x-ray lithography, focused ion beam, and other bottom-up approaches). Students will visit nearby research institutes and foundry companies as part of this course. (Credit cannot be earned for both EE 4533 and EE 5413.) Generally offered: Fall. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**EE 4673. Data Communication and Networks. (2-3) 3 Credit Hours.**

Prerequisites: EE 3223. Introduction to computer networks and their underlying concepts and principles. Learn layered organization of the internet in a top-down fashion: Application, Transport, Network, Data Link, and Physical layers. The course will also cover advance topics including wireless networking, wireless communication, and network security. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course Fee: DL01 \$75.



**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**EE 4812. Electrical Engineering Design I. (2-1) 2 Credit Hours.**

Prerequisites: Completion of 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. Differential Tuition: \$110. Course fee: DL01 \$50.

**EE 4813. Electrical Engineering Design II. (2-3) 3 Credit Hours.**

Prerequisites: EE 4113 and EE 4812. Complex system design; advanced ATE; project management, detailed design package, status reporting, formal oral and written technical reports, design reviews, and test plan development and execution; open-ended design project considering safety, reliability, environmental, economic, and other constraints; and ethical and social impacts. Generally offered: Fall, Spring. Differential Tuition: \$165. Course fee: DL01 \$75.

**EE 4911. Independent Study. (0-0) 1 Credit Hour.**

Prerequisites: Permission in writing (form available) from the instructor, 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. Differential Tuition: \$55.

**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. Differential Tuition: \$110.

**EE 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: Permission in writing (form available) from the instructor, 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. Differential Tuition: \$165.

**EE 4953. Special Studies in Electrical and Computer Engineering. (3-0) 3 Credit Hours.**

Prerequisites: May 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. Differential Tuition: \$165. Course fee: DL01 \$75.

## Engineering (EGR)

**NOTE: All prerequisites for Engineering (EGR) courses must be completed with a grade of "C-" or better.**

### Engineering (EGR) Courses

**EGR 1003. Engineering Design and Problem Solving. (3-0) 3 Credit Hours.**

This course will introduce students to the scope of engineering, foundations of engineering science, and engineering design. Engineering fundamentals and design methods are addressed through rigorous design challenges and reverse engineering and redesign modules. The modules are designed so that students learn specific engineering content as they solve engineering problems in multiple contexts. This course is restricted to students in the Engineer Your World program. Course Fees: LRE1 \$25; STSE \$30.

**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 \$25; 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 \$25; 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 \$25; STSE \$30; DL01 \$75.

**EGR 1351. First Year Participation in Engineering Projects in Community Service (EPICS). (1-2) 1 Credit Hour.**

Engineering Projects in Community Service (EPICS) courses create a vertical project track under which students work in multidisciplinary teams on long-term engineering-based design projects. Projects of at least one-year in duration are intended to solve real problems that are defined in consultation with "customers" from not-for-profit community and education organizations. EPICS courses are open to students from all disciplines; each student contributes expertise in his/her academic discipline. Each team consists of a mix of first year, sophomores, juniors, and seniors. Students are encouraged to participate in an EPICS project team for two or more semesters. First year students gain insight into the specific project, and more generally, into the design and development process. They attend planning and reporting meetings with the customer and are expected attend all team meetings. Under the mentorship of the team's sophomores, juniors, and seniors they perform and report upon tasks consistent with their level of discipline expertise. May be repeated for credit. Course Fees: LRE1 \$25; STSE \$10; DL01 \$25.

**EGR 1352. First Year Participation in Engineering Projects in Community Service (EPICS). (2-2) 2 Credit Hours.**

Prerequisite: Permission of instructor required. Continuation of Engineering Projects in Community Service (EPICS). Participants gain insight into the specific project, and more generally, into the design and development process. They attend planning and reporting meetings with the customer and are expected to attend all team meetings. Working with the team's sophomores, juniors, and seniors, they perform and report upon tasks consistent with their level of discipline expertise. EPICS 1352 is offered for two credits and is intended for students who have exhibited significant achievement in EGR 1351 and desire the level of responsibility that is appropriate for two credits. May be repeated for credit. Course Fees: LRE1 \$25; STSE \$20.

**EGR 1403. Technical Communication. (3-0) 3 Credit Hours.**

Prerequisite: WRC 1013. Oral, written, graphical and visual communication; technical instructions; design project with presentation; teamwork; and personal responsibility. May be applied toward the Core Curriculum requirement in the Component Area Option. Course Fees: LRC1 \$12; LRE1 \$25; STSE \$30; DL01 \$75.

**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 \$25; STSE \$30; DL01 \$75.

**EGR 2213. Statics and Dynamics. (3-0) 3 Credit Hours.**

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 \$25; STSE \$30.

**EGR 2323. Applied Engineering Analysis I. (3-1) 3 Credit Hours.**

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 \$25; STSE \$30; DL01 \$75.

**EGR 2351. Sophomore Participation in Engineering Projects in Community Service (EPICS). (1-2) 1 Credit Hour.**

Continuation of Engineering Projects in Community Service (EPICS). Sophomores gain insight into the specific project, and, more generally, into the design and development process. They attend planning and reporting meetings with the customer and are expected attend all team meetings. Under the mentorship of the team's juniors and seniors, they perform and report upon tasks consistent with their level of discipline expertise. May be repeated for credit. Course Fees: LRE1 \$25; STSE \$10.

**EGR 2352. Sophomore Participation in Engineering Projects in Community Service (EPICS). (2-2) 2 Credit Hours.**

Continuation of Engineering Projects in Community Service (EPICS). Sophomores gain insight into the specific project, and, more generally, into the design and development process. They attend planning and reporting meetings with the customer and are expected attend all team meetings. Under the mentorship of the team's juniors and seniors they perform and report upon tasks consistent with their level of discipline expertise. May be repeated for credit. Course Fees: LRE1 \$25; STSE \$20.

**EGR 2513. Dynamics. (3-0) 3 Credit Hours. (TCCN = ENGR 2302)**

Prerequisites: MAT 1224 and 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 \$25; STSE \$30; DL01 \$75.

**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. Credit cannot be earned for both EGR 3303 and EGR 3301.) Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**EGR 3351. Junior Participation in Engineering Projects in Community Service (EPICS). (1-2) 1 Credit Hour.**

Prerequisite: Upper-division standing. Continuation of Engineering Projects in Community Service (EPICS). The responsibilities of juniors include working with the seniors in the planning and organization of the project, contributing to the design process, problem solving by contributing expertise from their discipline, meeting with the customer, and the mentorship of sophomores and freshmen. The EPICS procedures manual provides information on expected relative workload for students. May be repeated for credit. Differential Tuition: \$55.

**EGR 3352. Junior Participation in Engineering Projects in Community Service (EPICS). (2-2) 2 Credit Hours.**

Prerequisites: Upper-division standing and permission of instructor required. Continuation of Engineering Projects in Community Service (EPICS). The responsibilities of juniors include working with the seniors in the planning and organization of the project, contributing to the design process, problem solving by contributing expertise from their discipline, meeting with the customer, and the mentorship of sophomores and freshmen. The EPICS procedures manual provides information on expected relative workload for students. May be repeated for credit. Differential Tuition: \$110.

**EGR 3353. EPICS Engineering Co-op. (0-0) 3 Credit Hours.**

Prerequisite: Acceptance into the Cooperative Education in Engineering Program and permission of instructor required. Designed for students participating in EPICS 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. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**EGR 4351. Senior Participation in Engineering Projects in Community Service (EPICS). (1-2) 1 Credit Hour.**

Prerequisite: Upper-division standing. Continuation of Engineering Projects in Community Service (EPICS). Seniors are responsible for the management tasks of planning and organizing their team project activity. They are expected to contribute expertise from their discipline to the design of the team's projects throughout most of the design process phases of problem identification, specification development, design, production, and deployment. Seniors will also meet with the customer and mentor the freshman, sophomores, and juniors. The EPICS procedures manual provides information on expected relative workload for students. May be repeated for credit. Differential Tuition: \$55.

**EGR 4352. Senior Participation in Engineering Projects in Community Service (EPICS). (2-2) 2 Credit Hours.**

Prerequisites: Upper-division standing and permission of instructor required. Continuation of Engineering Projects in Community Service (EPICS). Seniors are responsible for the management tasks of planning and organizing their team project activity. They are expected to contribute expertise from their discipline to the design of the team's projects throughout most of the design process phases of problem identification, specification development, design, production, and deployment. Seniors will also meet with the customer and mentor the freshman, sophomores and juniors. The EPICS procedures manual provides information on expected relative workload for students. May be repeated for credit. Differential Tuition: \$110.

**EGR 4362. Senior EPICS Design I. (1-4) 2 Credit Hours.**

Prerequisite: Permission of instructor required. Continuation of Engineering Projects in Community Service (EPICS). Seniors using EGR 4363 to fulfill capstone or design requirements where approved for their major may be required to satisfy additional course requirements specified by their degree program. The EPICS procedures manual provides information on expected relative workload for students. Seniors are responsible for the management tasks of planning and organizing their team project activity. They are expected to contribute expertise from their discipline to the design of the team's projects throughout most of the design process phases of problem identification, specification development, design, production, and deployment. Seniors will also meet with the customer and mentor the first year, sophomores and juniors. May be repeated for credit. Differential Tuition: \$110.

**EGR 4363. Senior EPICS Design I. (1-6) 3 Credit Hours.**

Prerequisite: Permission of instructor required. Continuation of Engineering Projects in Community Service (EPICS). Seniors using EGR 4363 to fulfill capstone or design requirements where approved for their major may be required to satisfy additional course requirements specified by their degree program. The EPICS procedures manual provides information on expected relative workload for students. Seniors are responsible for the management tasks of planning and organizing their team project activity. They are expected to contribute expertise from their discipline to the design of the team's projects throughout most of the design process phases of problem identification, specification development, design, production, and deployment. Seniors will also meet with the customer and mentor the first year, sophomores and juniors. May be repeated for credit. Differential Tuition: \$165.

**EGR 4373. Senior EPICS Design II. (1-6) 3 Credit Hours.**

Prerequisite: EGR 4362 or EGR 4363, and permission of instructor. Continuation of EPICS courses. Seniors using EGR 4363 to fulfill capstone or design requirements where approved for their major may be required to satisfy additional course requirements specified by their degree program. The EPICS procedures manual provides information on expected relative workload for students. Seniors are responsible for the management tasks of planning and organizing their team project activity. They are expected to contribute expertise from their discipline to the design of the team's projects throughout most of the design process phases of problem identification, specification development, design, production, and deployment. Seniors will also meet with the customer and mentor the first year, sophomores, and juniors. May be repeated for credit. Differential Tuition: \$165.

**EGR 4501. Engineering Ethics and Leadership. (1-0) 1 Credit Hour.**

Prerequisites: EGR 2323 and Upper-division standing. A study of professional engineering ethics including the history of ethical thinking, codes and professionalism, and problem-solving techniques. The connection of engineering ethics to emerging environmental, social, and governance ESG issues. Leadership is introduced using the Student Leadership Challenge to provide fundamental principles of leadership. The course will include case studies, guest speakers, and experiential learning to reinforce the topics. Differential Tuition: \$55.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

## Engineering and Integrated Design (EID)

### Engineering and Integrated Design (EID) Courses

**EID 3100. Signature Experience Internship. (0-0) 0 Credit Hours.**

Prerequisite: Co-enrollment in a linked course or consent of department chair. An experiential learning internship opportunity in which students conduct supervised professional activities in an organization closely related to their field of study. May be repeated when topics vary.

**EID 3200. Signature Experience Research. (0-0) 0 Credit Hours.**

Prerequisite: Co-enrollment in a linked course or consent of department chair. An experiential learning research opportunity in the student's field of study. Students must conduct research under the direction of a qualified supervisor and complete all appropriate training before engaging in research activities. May be repeated when topics vary.

**EID 3300. Signature Experience Study Abroad. (0-0) 0 Credit Hours.**

Prerequisite: Co-enrollment in a linked course or consent of department chair. An international experiential opportunity that allows students to obtain valuable knowledge relevant to their field of study by providing them access to peculiar sites. May be repeated when topics vary.

**EID 3400. Signature Experience Service Learning. (0-0) 0 Credit Hours.**

Prerequisite: Co-enrollment in a linked course or consent of department chair. An experiential service-learning opportunity in which students offer solutions to problems and issues of public concern by applying the knowledge gained in the classroom. May be repeated when topics vary.

## 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Generally offered: Fall, Spring, Summer. Course Fees: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**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. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Course Fees: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**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 Fees: LRLF \$10.27; STLF \$18.48.

**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 \$10.27; STLF \$18.48; DL01 \$75.

**ENG 2243. Literatures in English (Premodern to Present). (3-0) 3 Credit Hours. (TCCN = ENGL 2321)**

Prerequisite: Completion of Core Curriculum requirement in Communication. Study of representative works of Literatures in English from premodern period to the present, including a global focus. Required of students majoring in English. Note: ENGL 2322 British Literature I or ENGL 2323 British Literature II may also substitute for ENG 2243. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; STLF \$18.48.

**ENG 2253. Literatures of the Americas (Premodern to Present). (3-0) 3 Credit Hours. (TCCN = ENGL 2326)**

Prerequisite: Completion of Core Curriculum requirement in Communication. Study of representative works of Literatures of the Americas from the premodern period to the present. Required of students majoring in English. Note: ENGL 2327 American Literature I or ENGL 2328 American Literature II may also substitute for ENG 2253. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; STLF \$18.48.

**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 Fees: LB01 \$5; LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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 Fees: LB01 \$5; LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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; LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**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: DL01 \$75; LB01 \$5; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**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 \$10.27; STLF \$18.48; DL01 \$75.

**ENG 2433. Editing. (3-0) 3 Credit Hours.**

Prerequisite: Completion of Core Curriculum requirement in Communication. 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 COM 2433 and ENG 2433.) Generally offered: Fall, Spring. Course Fee: DL01 \$75; LB01 \$5; LRLF \$10.27; STLF \$18.48.

**ENG 2443. Persuasion and Rhetoric. (3-0) 3 Credit Hours.**

Prerequisite: Completion of Core Curriculum requirement in Communication. Introduces students to key concepts and frameworks of persuasion, useful for analysis of texts, events, communication, and contexts by focusing on the traditional rhetorical canons of invention, arrangement, style, delivery, and memory. May be applied toward the Language, Philosophy, and Culture Core Curriculum requirement. Course Fees: LRLF \$10.27; STLF \$18.48.

**ENG 2523. Postcolonial Decolonial Literature and Theory. (3-0) 3 Credit Hours.**

Prerequisite: Completion of Core Curriculum requirement in Communication. Introduction to literatures and theories from Postcolonial and Decolonial writers in Global literature. May include texts from the Early Modern period to the present day. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; STLF \$18.48.

**ENG 2773. Borders, Race, and Literature. (3-0) 3 Credit Hours.**

Prerequisite: Completion of Core Curriculum requirement in Communication. Survey of global literature, prioritizing Black, Indigenous, and Latinx writers from the 1700s to the present day with focus on critical and literary voices produced by counter cultures against the boundaries of borders and "race". Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fee: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL \$75.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.



**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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 British novels. May be repeated for credit when topics vary. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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; LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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; LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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, applications, and historical periods. May be repeated for credit when topics vary. Course Fees: LRLF \$10.27; STLF \$18.48.

**ENG 3383. Writing in Public and Professional Contexts. (3-0) 3 Credit Hours.**

Prerequisite: Completion of Core Curriculum requirement in Communication. 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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**ENG 3413. Specialized Technical & Professional Writing. (3-0) 3 Credit Hours.**

Prerequisite: Completion of Core Curriculum requirement in Communication. 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; LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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; LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.



**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**ENG 3913. Race, Gender, and Global Literature. (3-0) 3 Credit Hours.**

Prerequisite: Completion of Core Curriculum requirement in Language, Philosophy, and Culture. Critical survey of English post-1900 focused on postcolonial, decolonial, and global feminisms, literature, and theory. Can include a focus on diasporic writing and cover a range of periods. Generally offered: Biennially. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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). Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**ENG 4213. Topics in English Prior to 1500. (3-0) 3 Credit Hours.**

Prerequisite: Completion of Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of a topic in English prior to 1500. Topics may be repeated for credit when they vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Generally offered: Biennially. Course Fees: LRLF \$10.27; STLF \$18.48.

**ENG 4223. Topics in English 1500-1700. (3-0) 3 Credit Hours.**

Prerequisite: Completion of Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of a topic in English 1500-1700. Topics may be repeated for credit when they vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Generally offered: Biennially. Course Fees: LRLF \$10.27; STLF \$18.48.

**ENG 4233. Topics in English 1700-1900. (3-0) 3 Credit Hours.**

Prerequisite: Completion of Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of a topic in English 1700-1900. Topics may be repeated for credit when they vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Generally offered: Biennially. Course Fees: LRLF \$10.27; STLF \$18.48.

**ENG 4243. Topics in English Post-1900. (3-0) 3 Credit Hours.**

Prerequisite: Completion of Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of a topic in English post 1900. Topics may be repeated for credit when they vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Generally offered: Biennially. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: DL01 \$75; LRLF \$10.247; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**ENG 4433. Advanced Professional Writing. (3-0) 3 Credit Hours.**

Prerequisite: ENG 2413 or the equivalent. 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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LB01 \$5; LRLF \$10.27; STLF \$18.48.

**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. Generally offered: Fall, Spring. Course Fee: LB01 \$5; LRLF \$10.27; STLF \$18.48; DL01 \$75.

**ENG 4593. Topics in Race, Gender, and Global Literature. (3-0) 3 Credit Hours.**

Prerequisite: Completion of Core Curriculum requirement in Language, Philosophy, and Culture. Critical study of a topic in English post-1900 focused on postcolonial, decolonial, and global feminisms, literature, and theory. Can include a focus on diasporic writing and cover a range of periods. May be repeated for credit when topics vary. Generally offered: Biennially. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**ENG 4813. Indigenous Culture, Literature, and History. (3-0) 3 Credit Hours.**

Prerequisite: Completion of Core Curriculum requirement in Language, Philosophy, and Culture. Critical examination of the legacies of colonization, forced removal, and traumatic memories caused by the genocide of Indigenous People. Includes a review of literature, memoirs, life stories, oral histories, and visual art to better understand how these forms become acts of survival and sovereignty that recuperate indigenous-centered epistemologies. Generally offered: Biennially. Course Fees: LRLF \$10.27; STLF \$18.48.

**ENG 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 Fees: LRLF \$10.27; STLF \$6.16.

**ENG 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 Fees: LRLF \$10.27; STLF \$12.32.

**ENG 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 Fees: LRLF \$10.27; STLF \$18.48.

**ENG 4933. Internship. (0-0) 3 Credit Hours.**

Prerequisite: Enrollment as an English major with junior or senior standing; Non-English majors may request instructor approval. 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**ENG 4973. Seminar for English Majors. (3-0) 3 Credit Hours.**

Prerequisite: 12 upper-division semester credit hours in English; limited to English majors in their senior year. This undergraduate seminar 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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**ENG 4993. Honors Thesis. (0-0) 3 Credit Hours.**

Prerequisites: Consent of instructor, consent of Department Scholarship, consent of Honors Committee, and 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. Course Fees: LRLF \$10.27; STLF \$18.48.

## 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 \$20.54; STSH \$30.81; DL01 \$75.

**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 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**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: ISCU \$120; LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**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. Generally offered: Fall, Spring, Summer. Course Fees: DL01 \$75; LRH1 \$20.54; STSH \$30.81.

**ESL 3073. Second Language Teaching and Learning for Grades 4-8. (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 4-8. Particular attention is placed on methods and strategies for planning, implementing, and assessing effective instruction for ELL students in the middle grades. Field experience required. (Formerly ESL 3063. Credit cannot be earned for both ESL 3073 and ESL 3063.) Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**ESL 3083. Second Language Teaching and Learning for Grades 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 7 and higher. Particular attention is placed on methods and strategies for planning, implementing, and assessing effective instruction for high school ELL students. Field experience required. (Formerly ESL 3063. Credit cannot be earned for both ESL 3083 and ESL 3063.) Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**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 \$20.54; STSH \$30.81; DL01 \$75.

**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 \$20.54; STF1 \$75; STSH \$30.81.

**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 \$20.54; STSH \$30.81.

## English for International Students (EIS)

**English for International Students (EIS) Courses****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. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STSH \$30.81.

**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. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STSH \$30.81.

**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. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**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. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

## Entrepreneurship (ENT)

**Entrepreneurship (ENT) Courses****ENT 3123. Innovation and Entrepreneurship. (3-0) 3 Credit Hours.**

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. Differential Tuition: \$126. Course Fee: DL01 \$75.

**ENT 4123. Commercialization and Enterprise Planning. (3-0) 3 Credit Hours.**

Prerequisite: MGT 3013. 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. Differential Tuition: \$126. Course fee: DL01 \$75.

**ENT 4623. Tools and Objectives of the Social Enterprise. (3-0) 3 Credit Hours.**

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. Differential Tuition: \$126.

**ENT 4723. Essentials of Global Entrepreneurship. (3-0) 3 Credit Hours.**

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. Differential Tuition: \$126.

**ENT 4873. Managing Startups. (3-0) 3 Credit Hours.**

Prerequisite: ENT 4123. 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.") Differential Tuition: \$126.

**ENT 4883. Managing the Emerging Enterprise. (3-0) 3 Credit Hours.**

Prerequisite: ENT 4123. 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. Differential Tuition: \$126.

**ENT 4903. Business Venture Practicum. (3-0) 3 Credit Hours.**

Prerequisite: ENT 4123. This practicum will allow students to gain valuable experience. Drawing on resources from the Carlos Alvarez 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. Differential Tuition: \$126.

**ENT 4911. Independent Study. (0-0) 1 Credit Hour.**

Prerequisites: A 3.0 Carlos Alvarez College of Business grade point average, MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the Carlos Alvarez 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. Differential Tuition: \$42.

**ENT 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: A 3.0 Carlos Alvarez College of Business grade point average, MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the Carlos Alvarez 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. Differential Tuition: \$126.

**ENT 4933. Internship in Entrepreneurship. (0-0) 3 Credit Hours.**

Prerequisites: ENT 4873, 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 Carlos Alvarez 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. Differential Tuition: \$126.

**ENT 4953. Special Studies in Entrepreneurship. (3-0) 3 Credit Hours.**

Prerequisite: ENT 4873. 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. Differential Tuition: \$126.

## 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. May be applied toward the Core Curriculum requirement in Social and Behavioral Sciences. Generally offered: Fall and Spring. Course Fees: LRS1 \$46.20; STSI \$21.60.

**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. Generally offered: Fall and Spring. Course Fees: IUS1 \$15; L001 \$20; LRS1 \$15.40; STSI \$7.20.

**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. Generally offered: Fall and Spring. Course Fees: IUS1 \$15; LRC1 \$12; LRS1 \$46.20; STSI \$21.60.

**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. Generally offered: Fall and Spring. Course Fees: IUS1 \$15; L001 \$30; LRS1 \$15.40; STSI \$7.20.



**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. Generally offered: Fall and Spring. Course Fees: LRC1 \$12; LRS1 \$46.20; STSI \$21.60; DL01 \$75.

**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. Generally Offered: Fall and Spring. Course Fees: IUS1 \$15; L001 \$30; LRS1 \$15.40; STFE \$40; STSI \$7.20.

**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. Generally offered: Fall and Spring. Course Fees: LRC1 \$12; LRS1 \$46.20; STSI \$21.60.

**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. Generally offered: Fall and Spring. Course Fees: IUS1 \$15; LRS1 \$61.60; STSI \$28.80.

**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: DL01 \$75; LRC1 \$12; LRS1 \$46.20; STSI \$21.60.

**ES 2021. Introduction to Environmental Science I Laboratory. (0-3) 1 Credit Hour.**

Prerequisite: 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 \$15.40; STSI \$7.20.

**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 \$46.20; STSI \$21.60; DL01 \$75.

**ES 2031. Introduction to Environmental Science II Laboratory. (0-3) 1 Credit Hour.**

Prerequisite: 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 \$15.40; STSI \$7.20.

**ES 2113. Fundamentals of Geographic Information Systems (GIS). (2-2) 3 Credit Hours.**

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. Generally offered: Fall and Spring. (Same as GEO 2113. Credit cannot be earned for both ES 2113 and GEO 2113.) Course Fees: IUS1 \$15; LRS1 \$46.20; STSI \$21.60.

**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 can only be earned for one of the following: ES 3033, ES 3034, or BIO 3283.) Generally offered: Fall, Spring. Differential Tuition: \$150.

**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. (Same as BIO 3292. Credit cannot be earned for both ES 3042 and BIO 3292.) Generally offered: Fall, Spring. Differential Tuition: \$100. Course Fees: IUS1 \$15; L001 \$30; STFE \$40.

**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. Differential Tuition: \$150.

**ES 3073. Environmental Rhetoric and Technical Communication. (3-0) 3 Credit Hours.**

Prerequisite: ENG 2413. Restricted to students who have completed 60 or more hours. This course focuses on rhetoric, ecology, and technical/scientific communication in order to develop interdisciplinary, team-based, and applied research projects. This advanced professional writing and rhetoric course will examine ecological communications as an archetypal example of specialized technical communication. (Same as BIO 3073. Credit cannot be earned for both ES 3073 and BIO 3073.) Generally offered: Fall, Spring. Differential tuition: \$150.



**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 can only be earned for one of the following: ES 3103, ES 3104, or BIO 3713.) Generally offered: Fall. Differential Tuition: \$150.

**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. Same as BIO 3113, credit cannot be earned for both BIO 3113 and ES 3113. Generally offered: Spring. Differential Tuition: \$150. Course Fees: IUS1 \$15; STFE \$40.

**ES 3121. Introduction to Soils Laboratory. (0-3) 1 Credit Hour.**

Prerequisites: CHE 1083 and CHE 1093, or equivalents. Laboratory exercise and field trips designed to develop student competency in soil description, analysis, and assessment. Generally offered: Fall and Spring. Course Fees: IUS1 \$15; L001 \$30. Differential Tuition: \$50.

**ES 3123. Introduction to Soils. (3-0) 3 Credit Hours.**

Prerequisites: CHE 1083 and CHE 1093, or equivalents. A study of soil properties and processes and relationships to land use, plant growth, environmental quality, and society. Generally offered: Fall and Spring. Differential Tuition: \$150.

**ES 3133. Oceanography. (3-0) 3 Credit Hours.**

Prerequisite: ES 1213 or equivalent. 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. (Same as GEO 3163. Credit cannot be earned for both ES 3133 and GEO 3163.) Generally Offered: Spring of even years. Differential Tuition: \$150.

**ES 3141. Watershed Processes Laboratory. (0-3) 1 Credit Hour.**

Prerequisites: ES 2013, ES 2023, ES 1213, and ES 2113, or equivalents. Laboratory exercises and field trips designed to develop an understanding of watershed processes, watershed assessment, and watershed management. Generally offered: Fall and Spring. Differential Tuition: \$50. Course Fees: IUS1 \$15; L001 \$30; STFE \$40.

**ES 3143. Watershed Processes. (3-0) 3 Credit Hours.**

Prerequisites: ES 2013, ES 2023, ES 1213, and ES 2113, or equivalents. This course focuses on watershed processes, watershed assessment, and watershed management. Generally offered: Fall and Spring. Differential Tuition: \$150. Course Fee: STFE \$40.

**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.) Generally offered: Spring. Differential Tuition: \$150.

**ES 3163. Ornithology. (3-0) 3 Credit Hours.**

Prerequisite: ES 2013 and ES 2023, 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.) Generally offered: Spring of even years. Course Fees: Differential Tuition: \$150. Course Fee: IUS1 \$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. (Same as BIO 3293. Credit cannot be earned for both ES 3173 and BIO 3293.) Generally offered: Fall of odd years. Differential Tuition: \$150. Course Fee: IUS1 \$15.

**ES 3183. Entomology. (3-0) 3 Credit Hours.**

Prerequisite: ES 3033 or ES 3083 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. A course covering various aspects of the biology of insects, including anatomy, physiology, evolution, behavior, ecology, and biogeography. (Same as BIO 3303. Credit cannot be earned for both BIO 3303 and ES 3183.) Generally offered: Spring odd years. Field trips may be required. Differential Tuition: \$150.

**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. (Same as BIO 3353. Credit cannot be earned for both ES 3193 and BIO 3353.) Generally offered: Fall of odd years. Differential Tuition: \$150. Course Fee: IUS1 \$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: Fall and Spring. Differential Tuition: \$150.

**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.) Generally offered: Spring. Differential Tuition: \$150. Course Fees: L001 \$30; STFE \$40.

**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 cannot be earned for both ES 3223 and BIO 3263.) Generally offered: Fall. Differential Tuition: \$150. Course Fees: L001 \$30; STFE \$40.

**ES 3233. Survey of Insects. (3-0) 3 Credit Hours.**

Prerequisites: ES 2013 and ES 2023 with a grade of at least a C-, and junior or senior status. Insect systematics, including major orders and families. (Same as BIO 3233. Credit cannot be earned for both BIO 3233 and ES 3233.) Generally offered: Spring even years. Differential Tuition: \$150.

**ES 3253. R Coding in Environmental Science and Ecology. (3-0) 3 Credit Hours.**

Prerequisite: ES 2113. Restricted to students who have completed 60 or more hours. This course will teach the management of environmental and ecological data using Program R. The focus will be on the structure and linguistics of data in R and how to integrate R into a data science workflow. (Same as BIO 3253. Credit cannot be earned for both ES 3253 and BIO 3253.) Generally offered: Spring even years. Differential Tuition: \$150.

**ES 3303. Sustainable Development. (3-0) 3 Credit Hours.**

Prerequisite: ES 2013 and ES 2023. Restricted to students who have completed 60 or more hours. This course will focus on addressing the challenges of sustainability and development with actionable knowledge for innovating solutions to the world's most pressing problems like climate change, poverty and inequality, and biodiversity loss and ecosystem degradation. Generally offered: Spring even years. Differential Tuition: \$150.

**ES 3313. Advanced Geographic Information Systems (GIS). (3-0) 3 Credit Hours.**

Prerequisite: ES 2113 or equivalent. This course is an undergraduate level course directed at developing more advanced Geographic Information Systems skills. The class is not introductory, and students will begin using more advanced analysis tools in ESRI GIS software (ArcGIS 10.3). Applications of the technology for scientific discovery and exploration will be used as case study examples. Generally offered: Fall of odd years. Differential Tuition: \$150.

**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. Generally offered: Fall and Spring. Differential Tuition: \$150.

**ES 4023. Aquatic Ecology. (3-0) 3 Credit Hours.**

Prerequisites: ES 3033 and ES 3042, or equivalents. A survey of physiological approaches to understanding plant-environment interactions from the functional perspective. (Same as BIO 4303. Credit cannot be earned for both ES 4023 and BIO 4303.) Generally offered: Fall of even years. Differential Tuition: \$150.

**ES 4033. Plant Physiological Ecology. (3-0) 3 Credit Hours.**

Prerequisites: ES 3033 and ES 3042, or equivalents. A survey of physiological approaches to understanding plant-environment interactions from the functional perspective. (Same as BIO 4313. Credit cannot be earned for both ES 4033 and BIO 4313.) Generally offered: Fall of even years. Differential Tuition: \$150.

**ES 4103. Global Change. (3-0) 3 Credit Hours.**

Prerequisites: CHE 1083, CHE 1093, ES 2013, and ES 2023, or equivalents; and junior or senior status. 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 and Spring. Differential Tuition: \$150.

**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.) Generally offered in Summer. Differential Tuition: \$50. Course Fee: IUS1 \$15.

**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.) Generally offered: Summer. Differential Tuition: \$150. Course Fee: IUS1 \$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. (Same as BIO 4043. Credit cannot be earned for both ES 4123 and BIO 4043.) Generally offered: Summer. Differential Tuition: \$150. Course Fee: IUS1 \$15.

**ES 4133. Natural Resource Policy and Administration. (3-0) 3 Credit Hours.**

Prerequisite: Junior or senior status. 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. Same as BIO 4233, credit cannot be earned for both BIO 4233 and ES 4133. Generally offered: Spring. Differential Tuition: \$150.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Generally offered: Fall of even years. Differential Tuition: \$150.

**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. Generally offered: Spring of even years. Differential Tuition: \$150. Course Fees: IUS1 \$15; STFE \$40.

**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 waste materials. Generally offered: Spring. Differential Tuition: \$150.

**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. Generally offered: Fall of even years. Differential Tuition: \$150.

**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: Fall and Spring. Differential Tuition: \$150.

**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). Generally offered: Fall and Spring. Differential Tuition: \$100.

**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.) Generally offered: Spring. Differential Tuition: \$150. Course fee: DL01 \$75.

**ES 4223. Urban Wildlife Ecology. (3-0) 3 Credit Hours.**

Prerequisites: ES 3033 and ES 3042, or equivalents. Fundamentals of urban ecology, field methods including urban wildlife and human surveys, and urban wildlife management and conservation strategies. Generally offered: Fall of even years. Differential Tuition: \$150.

**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. (Same as BIO 4323. Credit cannot be earned for both ES 4233 and BIO 4323.) Generally offered: Spring. Differential Tuition: \$150.

**ES 4243. Wildlife Ecology. (3-0) 3 Credit Hours.**

Prerequisite: ES 3033. Major environmental factors affecting wildlife; structure, and behavior of wildlife populations; regional wildlife communities and their conservation. (Same as BIO 4053. Credit cannot be earned for both ES 4243 and BIO 4053.) Generally offered: Spring even years. Differential Tuition: \$150.

**ES 4253. Sources, Fate, and Transport of Chemicals in the Environment. (3-0) 3 Credit Hours.**

Prerequisites: ES 2013, ES 2023, and MAT 1093, or equivalents. Sources of chemicals in the environment. Processes regulating fate and transport of metals, organics, nutrients, salts, pathogens, and radionuclides in the environment. Generally offered: Fall and Spring. Differential Tuition: \$150.

**ES 4263. River Ecosystems. (3-0) 3 Credit Hours.**

Prerequisite: ES 3033 with a grade of at least a 'C-'. This course examines the physical, chemical, and biological factors that determine biodiversity and the structure and function of aquatic and riparian ecosystems. Key ecological and hydrogeomorphology concepts and their application to environmental concerns are covered. (Same as BIO 4263. Credit cannot be earned for both BIO 4263 and ES 4263.) Generally offered: Spring of even years. Differential Tuition: \$150.

**ES 4273. Fish Ecology. (3-0) 3 Credit Hours.**

Prerequisite: ES 3033 with a grade of at least a 'C-'. A study of the biotic and abiotic factors affecting the diversity and distribution of fishes, with a focus on North American freshwater fishes. This course will include (1) lectures and discussions covering patterns and processes in fish ecology; and (2) a collaborative research project covering computational techniques used in fish ecology. (Same as BIO 4273. Credit cannot be earned for both BIO 4273 and ES 4273.) Generally offered: Fall of even years. Differential Tuition: \$150.

**ES 4283. Plant-Soil-Microbe Interactions. (3-0) 3 Credit Hours.**

Prerequisite: ES 3033 with a grade of at least a 'C-'. Restricted to students who have completed 60 or more hours. This course focuses on the microbial groups which live in soils and among plant species and methodologies used to understand their interaction. (Same as BIO 4283. Credit cannot be earned for both BIO 4283 and ES 4283.) Generally offered: Spring of odd years. Differential Tuition: \$150.

**ES 4293. Human Dimensions of Wildlife Management. (3-0) 3 Credit Hours.**

Prerequisite: ES 3033. This course will introduce students to the role that humans play in the management of wildlife and how people's knowledge, values, and behaviors influence conservation decisions. Students taking this course will develop an understanding of the social, political, and economical drivers of wildlife management. They will also explore ways to engage stakeholders in wildlife management through conservation tools and effective communication that considers human dimensions. An emphasis will be placed on working with private landowners, and in so doing train students to work in private landscapes where culture, society, politics, and economics often provide the context for management decisions. Generally offered: Spring even years. Differential Tuition: \$150.

**ES 4303. Principles of Wildlife Management. (3-0) 3 Credit Hours.**

Prerequisite: ES 4243. Ways of conserving desired numbers of animals for the overall best interests of society, be they aesthetic, ecological, economic, commercial, or recreational; includes management of endangered species, exploited species, wildlife communities in nature reserves, and wildlife pests. Generally offered: Spring even years. Differential Tuition: \$150.

**ES 4503. Introduction to Environmental Risk Assessment. (3-0) 3 Credit Hours.**

Prerequisite: ES 4183 with a grade of "C-" or better. This course will offer hands-on training in the primary areas of risk assessment (i.e., hazard identification, dose-response assessment, exposure assessment, and risk characterization). Generally offered: Fall of odd years. Differential Tuition: \$150.

**ES 4513. Advanced Environmental Risk Assessment. (3-0) 3 Credit Hours.**

Prerequisite: ES 4503 with a grade of at least a 'C-'. This course will offer hands-on training in the advanced areas of risk assessment (i.e., hazard identification, dose-response assessment, exposure assessment, and risk characterization). Generally offered: Spring of even years. Differential Tuition: \$150.

**ES 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, regardless of discipline, will apply to a bachelor's degree. Generally offered: Fall, Spring, Summer. Differential Tuition: \$50.

**ES 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, regardless of discipline, will apply to a bachelor's degree. Generally offered: Fall, Spring, Summer. Differential Tuition: \$100.

**ES 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, regardless of discipline, will apply to a bachelor's degree. Generally offered: Fall, Spring, and Summer. Differential Tuition: \$150.

**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. Generally offered: variable. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Generally offered: Fall, Spring, Summer. Differential Tuition: \$150.

## Equity and Education (EED)

### Equity and Education (EED) Courses

**EED 2013. Introduction to Teaching and Learning 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. (Formerly IDS 2013. Credit cannot be earned for both IDS 2013 and EED 2013.) Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STSH \$30.81; STF1 \$75.

**EED 3110. Preclinical Field Experience I. (0-0) 0 Credit Hours.**

Corequisites: Preclinical Year Semester 1 Courses. Prerequisites: Admission to the Teacher Certification Program; includes but is not limited to activities such as school/classroom observations, assisting a mentor teacher, working with small groups, or any course assignments related to interacting with students. These activities may be online or in person depending on state requirements for certification. Generally offered: Fall, Spring. Course Fees: LRH1 \$20; STF1 \$75; STSH \$30.

**EED 3220. Preclinical Field Experience II. (0-0) 0 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program. Includes but is not limited to activities such as school/classroom observations, assisting a mentor teacher, working with small groups, designing and delivering a lesson to a small group or whole class with mentor teacher cooperation and feedback, independently creating and delivering a lesson to a small group/whole class, or any course assignments related to interacting with students. These activities may be online or in person depending on state requirements for certification. Generally offered: Fall, Spring.

**EED 3303. Teaching, Learning, and Classroom Culture. (3-0) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program. Students are introduced to Universal Design for Learning, an approach that aims to meet the diverse needs of all learners. The course's focus on instructional equity is strengthened by the integration of culturally responsive/sustaining pedagogy, social emotional learning, trauma-informed pedagogy, and restorative justice practices. Students will explore classroom ecology by examining the deep connection between a teacher's curricular and instructional choices and how it shapes the EC-12 classroom environment. Students will apply their developing knowledge of these concepts and skills by designing curricular materials that demonstrate the importance of fostering a healthy and supportive learning environment. Field experience required. Course Fees: LRH1 \$20.54; STSH \$30.81.



# Finance (FIN)

## 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 is designed for nonbusiness majors and cannot be applied toward a degree in the Carlos Alvarez College of Business. Generally offered: Fall, Spring. Differential Tuition: \$126. Course fee: DL01 \$75.

### **FIN 3013. Principles of Business Finance. (3-0) 3 Credit Hours.**

Prerequisites: ACC 2013, ECO 2013, MAT 1053, 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. Differential Tuition: \$126. Course fee: DL01 \$75.

### **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); and completion of, or concurrent enrollment in, ACC 3023 or ACC 3053, FIN 3063, and MAT 1133. 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. Differential Tuition: \$126.

### **FIN 3033. Principles of Investment. (3-0) 3 Credit Hours.**

Prerequisites: FIN 3013, or the equivalent, with a grade of "C-" or better; and completion of, or concurrent enrollment in, MAT 1133. 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. Differential Tuition: \$126. Course fee: DL01 \$75.

### **FIN 3053. Introduction to Personal Finance. (3-0) 3 Credit Hours.**

Prerequisite: Completion of Math core component course. This course is an introduction to personal finance, including goal setting, cash management, credit, insurance, taxes, housing, investment alternatives, and retirement plans. This course may not be applied toward a major or a minor in finance. Further, it cannot be used as a substitute for FIN 3013 or as a Finance Elective. However, other business majors can use this course to satisfy their business or free elective requirements. Differential Tuition: \$126.

### **FIN 3063. Computer Modeling of Financial Applications. (3-0) 3 Credit Hours.**

Prerequisite: FIN 3013 or the equivalent. Provides the opportunity to develop computer modeling skills and techniques for analyzing financial situations encountered in business, including the analysis of financial statements, portfolio management, and principles of investment analysis of securities. Financial databases are introduced to expose students to real world applications. Financial issues involving uncertainty may be examined. (Formerly FIN 4873. Credit cannot be earned for both FIN 4873 and FIN 3063.) Differential Tuition: \$126.

### **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. Differential Tuition: \$126. Course fee: DL01 \$75.

### **FIN 3423. Security Analysis and Corporate Valuation. (3-0) 3 Credit Hours.**

Prerequisites: FIN 3033 or the equivalent and completion of, or concurrent enrollment in, ACC 3023 or ACC 3053, FIN 3023, and FIN 3063. Advanced financial analysis and valuing financial claims of a company; 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. Differential Tuition: \$126.

### **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. Differential Tuition: \$126. Course Fee: DL01 \$75.

### **FIN 3453. Derivative Markets. (3-0) 3 Credit Hours.**

Prerequisite: FIN 3033. This course covers the theoretical and practical aspects of futures, options, and other derivative instruments, which have become some of the most important tools of modern finance. While the primary focus is on financial derivatives, contracts based on commodities, and other nonfinancial variables are also covered. Topics include market institutions and trading practices, valuation models, hedging, and other risk management techniques. Differential Tuition: \$126. Course fee: DL01 \$75.

### **FIN 3463. Debt Markets. (3-0) 3 Credit Hours.**

Prerequisites: FIN 3023 and FIN 3033. Describes important fixed income securities and markets, and develops tools for valuing fixed income securities, managing interest rate risk and constructing fixed income portfolios. The course covers traditional bonds and term structure concepts as well as securitized products, fixed income derivatives, and interest rate models. Various data sources and financial software are used to integrate theoretical concepts with practical applications. Differential Tuition: \$126. Course fee: DL01 \$75.



**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. Differential Tuition: \$126.

**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. Differential Tuition: \$126.

**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. Differential Tuition: \$126.

**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. Differential Tuition: \$126.

**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. Differential Tuition: \$126.

**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. Differential Tuition: \$126.

**FIN 4713. Mortgage Banking and Real Estate Finance. (3-0) 3 Credit Hours.**

Prerequisites: FIN 3013, FIN 3433, and successful completion of the Finance Assessment of Competency Test (FACT) Exam. 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. Differential Tuition: \$126. Course fee: DL01 \$75.

**FIN 4723. Principles of Real Estate Investment. (3-0) 3 Credit Hours.**

Prerequisites: FIN 3013, FIN 3433, and successful completion of the Finance Assessment of Competency Test (FACT) Exam. 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. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126.

**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. Differential Tuition: \$126.

**FIN 4853. Real Estate Appraisal. (3-0) 3 Credit Hours.**

Prerequisites: FIN 3013 and FIN 3433. 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.) Differential Tuition: \$126.

**FIN 4893. Cases and Problems in Finance. (3-0) 3 Credit Hours.**

Prerequisites: ACC 3023 or ACC 3053, FIN 3023, FIN 3033, FIN 3313, FIN 3063, and MAT 1133 with a grade of C- or better in each course and senior standing. 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. Differential Tuition: \$126. Course fees: DL01 \$75.

**FIN 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: A 3.0 Carlos Alvarez College of Business grade point average, MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the Carlos Alvarez 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. Differential Tuition: \$126.

**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 Carlos Alvarez 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. Differential Tuition: \$126.

**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. Differential Tuition: \$42.

**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. Differential Tuition: \$126.

## 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 Fees: LRLF \$10.27; MM01 \$7; STLF \$24.64.

**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: Course Fees: LRLF \$10.27; MM01 \$7; STLF \$49.28.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$24.64.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$36.96.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$36.96.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$6.16.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

# 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 \$10.27; MM01 \$7; STLF \$24.64; DL01 \$100.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$24.64; DL01 \$100.

**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 \$10.27; MM01 \$7; STLF \$18.48.

**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 \$10.27; MM01 \$7; STLF \$18.48.

**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 \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**FRN 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 Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

# General Business Administration (GBA)

## General Business Administration (GBA) Courses

**GBA 1200. Business Forum. (0-0) 0 Credit Hours.**

Business Forum is a themed speaker-series designed to look at current trends in business and hold discussions regarding issues facing companies. Guest speakers from various companies, organization, as well as faculty members from various departments and specializations share key developments in the business industry. Attendance at events may be required and are held in and around the UTSA campus and community. May be repeated. Must be taken on a credit/no-credit basis.

**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 \$15.41; DL01 \$75; LRB1 \$15.41.

**GBA 3013. Introduction to Academic Research. (3-0) 3 Credit Hours.**

Prerequisites: Consent of the instructor. This course will introduce students to the nature and scope of research conducted in a variety of business disciplines. Students will participate in a broad review of business research literature. This course will also explore the nature of doctoral programs and careers in academe. Finally, this course will describe methods and approaches that students can take to prepare for admission into graduate programs of interest. Differential Tuition: \$126.

**GBA 3200. Business Service Learning Practicum. (0-0) 0 Credit Hours.**

Students will conceptualize, plan, and participate in a team-based service-learning project. Course focuses on ethics, teamwork, and communication skills. This experience helps students apply their classroom learning to a work environment. May be repeated. Must be taken on a credit/no-credit basis. Differential Tuition: \$126.

**GBA 3943. Business Service Learning Practicum. (3-0) 3 Credit Hours.**

Students will conceptualize, plan, and participate in a team-based service-learning project. Course focuses on ethics, teamwork, and communication skills. This experience helps students apply their classroom learning to a work environment. Students will be required to submit course deliverables that demonstrate the application of knowledge and skills imparted through course activities as well as academic reflection. Differential Tuition: \$126.

**GBA 4023. Conducting Cutting Edge and Innovative Research and Discovery. (3-0) 3 Credit Hours.**

Prerequisites: GBA 3013, MS 3043, and consent of instructor. This course is the first in a two-part sequence providing students with practical knowledge, skills, and hands-on experience needed to conduct pragmatic and professional research in an application area of interest. Students will meet with their peers, if any, and the instructor, for the purpose of facilitating the research work. During this course, students will engage in the following steps of the research and knowledge discovery process: problem definition, question formulation, hypothesis development, methodological selection, preliminary analytics, analytical design, data acquisition, data preparation and pre-processing, visualization, and data analysis. Differential Tuition: \$126.

**GBA 4033. Communication and Visualization of Impactful Research. (3-0) 3 Credit Hours.**

Prerequisite: GBA 4023 and consent of instructor. This course is the second in a two-part sequence aiming to give students hands-on research experience in a pragmatic and professional manner. Students will continue and finish their major data analytics project, focusing on post hoc or auxiliary analysis and presentation of results portion of the process. The next steps will be detailed data analysis and feedback, conclusion drawing, report preparation and refinement, presentation preparation and final presentation. The course will culminate in a formal, completed report to the supporting organization, as well as to peers and professionals in the field. Students and mentoring faculty may consider submission to professional conference and/or additional publication or presentation venues to further enhance the research experience. Differential Tuition: \$126.

**GBA 4873. Global Business Immersion I. (3-0) 3 Credit Hours.**

Prerequisite: Completion of 9 semester credit hours of Carlos Alvarez College of Business (CACOB) courses and official admission into the CACOB 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. Differential Tuition: \$126.

**GBA 4883. Global Business Immersion II. (3-0) 3 Credit Hours.**

Prerequisite: Completion of 9 semester credit hours of Carlos Alvarez College of Business (CACOB) courses and official admission into the CACOB 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. Differential Tuition: \$126.

**GBA 4933. Business Global Internship. (0-0) 3 Credit Hours.**

Prerequisite: Completion of 12 semester credit hours of Carlos Alvarez College of Business (CACOB) courses and official admission into the CACOB international internship program. An international internship offers students the opportunity to work and learn in a non-US environment. This global internship experience helps students apply their classroom teachings to a work environment. Students participating in this program will gain first-hand knowledge of the behaviors, customs, and norms of another culture and business practices. A proposal form must be completed and approved prior to registration. Differential Tuition: \$126.

**GBA 4943. Business Professional Internship. (0-0) 3 Credit Hours.**

Prerequisite: Completion of 15 semester credit hours of business courses. This for-credit internship experience provides hands-on learning for various business disciplines. This business internship experience helps students apply their classroom learning to a work environment. Students must meet all College academic credit internship requirements and an application form must be completed and approved prior to registration. Differential Tuition: \$126.

**GBA 4953. Special Studies in General Business Administration. (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. Generally offered: Spring, Summer. Differential Tuition: \$126.

**GBA 4993. Honors Thesis. (0-0) 3 Credit Hours.**

Prerequisite: Enrollment limited to students in the Business Honors Program. 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. Differential Tuition: \$126.



# 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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

### GES 1023. World Regions & Global Change. (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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

### GES 2613. Intro to 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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

### GES 2623. Human Geography: People, Place, Culture. (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 \$10.27; STLF \$18.48.

### 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. Course Fees: LRLF \$10.27; STLF \$18.48.

### 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.) Course Fees: LRLF \$10.27; STLF \$18.48.

### 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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

### 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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

### 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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

### 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.) Course Fees: LRLF \$10.27; STLF \$18.48.



**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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 Fees: GIS1 \$32; LRLF \$10.27; STLF \$24.64; DL01 \$100.

**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. Course Fees: GIS1 \$32; LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: GIS1 \$32; LRLF \$10.27; STLF \$24.64.

**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.) Course Fees: GIS1 \$32; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: GIS1 \$32; LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**GES 3573. Urban Planning and Development. (3-0) 3 Credit Hours.**

An exploration and analysis of the planning and development processes of cities and urban regions. Themes and issues may include the history of urbanization; planning tools such as the master plan, zoning and subdivision regulations; property rights and the legal basis for planning and real estate development; economic development; planning and politics; historic preservation and urban design; growth management and sustainability; environmental issues; housing and social issues; and transportation and land use. (Same as POL 3413. Formerly GRG 3523 and GES 3523. Credit can only be earned for one course: GES 3573, POL 3413, GRG 3523, or GES 3523.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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, among others. This course reveals the systemic underpinnings to growing sectarian strife at the local and international level. Course Fees: LRLF \$10.27; STLF \$18.48.

**GES 3683. Sustainable Land Use Management. (3-0) 3 Credit Hours.**

This course will provide students with the opportunity to understand and apply sustainability principles and practices to landscape management and land uses that are responsive to both natural and human needs. They will develop an ability to “read” the landscape and become aware of what has or is happening with the land we inhabit. Students will be introduced to the tools and techniques used by planners, managers, and citizens to achieve desired future land conditions. Issues will include landscape ecology, reconciliation ecology, storm water management, habitat conservation, designing with nature, and related topics. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$36.96.

**GES 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. (Formerly GRG 4911. Credit cannot be earned for both GRG 4911 and GES 4911.) Course Fees: LRLF \$10.27; STLF \$6.16.

**GES 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. (Formerly GRG 4912.) Course Fees: LRLF \$10.27; STLF \$12.32.

**GES 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. (Formerly GRG 4913. Credit cannot be earned for both GRG 4913 and GES 4913.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Credit cannot be earned for both GRG 4933 and GES 4933.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$36.96.

**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. Credit cannot be earned for both GRG 4953 and GES 4953.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**GES 4983. Research Practicum. (0-0) 3 Credit Hours.**

Prerequisites: Permission in writing (form available) from 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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Credit cannot be earned for both GRG 4993 and GES 4993.) Course Fees: LRLF \$10.27; STLF \$18.48.

## 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 and climate change 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: DL01 \$75; LRC1 \$12; LRS1 \$46.20; STSI \$21.60.

**GEO 1033. Geology of North American National Parks. (3-0) 3 Credit Hours. (TCCN = GEOL 1302)**

Explores the geology of the national parks of North America, including evaluation of the relationships between plate tectonics, the rock cycle, and landscapes preserved within our national parks. This course highlights the formation of the North American continent through examination of the iconic formations of the North American national parks including The Grand Canyon, Yellowstone, Yosemite, and others, with a special look at the geology of the two national parks in Texas. May be applied toward the Core Curriculum requirement in Life and Physical Sciences. May not be applied to a major in geology. Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$46.2; STSI \$21.6; LRC1 \$12.

**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, and completion of or concurrent enrollment in GEO 1111. 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 \$46.20; STSI \$21.60.

**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 \$15.40; STSI \$7.20.

**GEO 1123. Life Through Time. (3-0) 3 Credit Hours. (TCCN = GEOL 1304)**

Prerequisite: 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 \$46.20; STSI \$21.60; DL01 \$75.

**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 \$15.40; STSI \$7.20.

**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, and 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 \$46.20; STSI \$21.60.

**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 \$15.40; STSI \$7.20.



**GEO 2043. Scientific Methods in Geosciences. (3-0) 3 Credit Hours.**

The goal of this class is to apply fundamental scientific methods in Earth Sciences. Students will learn mathematics using Geosciences' examples. Fundamental theories and principles on the physics and chemistry of the Earth System will be introduced and applied using scientific methods. This course aims to improve students' knowledge and skills of scientific approaches involved in Geosciences. After successfully completing this course, students will be prepared for advanced level courses requiring college level mathematics, chemistry, and physics in Earth Sciences. Generally offered: Fall, Spring. Course Fees: LRS1 \$46.2; STSI \$21.6.

**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. (Same as ES 2113. Credit cannot be earned for both GEO 2113 and ES 2113.) Generally offered: Fall, Spring. Course Fees: LRS1 \$46.20; STSI \$21.60.

**GEO 3001. Preparation for the Geoscience Workforce. (1-0) 1 Credit Hour.**

Prerequisites: GEO 1103, GEO 1123, and at least junior standing. This course provides the opportunity to engage in professional development activities in preparation for a career in the geosciences and aligned fields. Activities will include workshops, seminars, and assignments. Differential Tuition: \$50.

**GEO 3003. Atmospheric Science. (3-0) 3 Credit Hours.**

Introduction to atmospheric sciences and the dynamic world of weather using real-world current environmental data. The course covers the composition and structure of the atmosphere, the flow of energy into, through, and out of the atmosphere, and the resulting motions from local to global scales. The impact of weather on humans, particularly severe weather, is studied, emphasizing basic physical principles of atmospheric phenomena. Analysis methods are introduced as the students study current meteorological data delivered via the Internet. Generally offered: Fall (online). Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$200. Course fee: DL01 \$100.

**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. Generally offered spring. Differential Tuition: \$150.

**GEO 3043. Petrology. (3-0) 3 Credit Hours.**

Prerequisites: GEO 2003, GEO 2011, MAT 1214, and completion of or concurrent enrollment in GEO 3051 and GEO 3373. Description, classification, occurrence, and origin of igneous and metamorphic rocks. Field trips may be required. Generally offered: Spring. Differential Tuition: \$150.

**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. Differential Tuition: \$50.

**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. Differential Tuition: \$150.

**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. Differential Tuition: \$50. Course Fee: IUE1 \$15.

**GEO 3103. Structural Geology. (3-0) 3 Credit Hours.**

Prerequisites: 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. Differential Tuition: \$150.

**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. Differential Tuition: \$50.

**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, Spring. Differential Tuition: \$150.

**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. Generally offered: Spring. Differential Tuition: \$150.



**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. Generally offered: Spring. Differential Tuition: \$50. Course Fee: IUE1 \$15.

**GEO 3163. Oceanography. (3-0) 3 Credit Hours.**

An introduction to the role of the ocean in the Earth system by using real-world oceanographic data. Topics covered include the flow of energy into and out of the ocean and the motions that result; physical and chemical properties of ocean water; ocean circulation; marine life and habitats; and the interaction of the ocean with the other components of the Earth system (hydrosphere, atmosphere, geosphere, and biosphere). It provides the scientific basis for understanding the world ocean. An optional field trip may be offered. (Same as ES 3133. Credit cannot be earned for both GEO 3163 and ES 3133.) Generally offered: Fall (online only, some set time), Spring (online). Differential Tuition: \$150. Course Fee: DL01 \$75.

**GEO 3173. The Cryosphere. (3-0) 3 Credit Hours.**

This course covers properties, areal distribution, seasonal change and climatic change of the major constituents of the cryosphere: 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. Methods of cryospheric research will be introduced such as remote sensing and in situ field investigations. Generally offered: Spring. Differential Tuition: \$150.

**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. Differential Tuition: \$150.

**GEO 3373. Geochemistry. (2-2) 3 Credit Hours.**

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. Students taking this class will learn to describe the role that modern geochemistry plays in all aspects of Earth Sciences, solve geochemical problems using geochemical data sets, and explain geochemical processes that take place at depth and at the surface of our planet. (Formerly GEO 3374. Credit cannot be earned for both GEO 3373 and GEO 3374.) Generally offered Fall. Differential Tuition: \$150. Course Fee: IUE1 \$15.

**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 introduction of geophysical survey methods to the exploration of near-surface cultural and natural resources. Topics in archaeological, environmental, geological, and engineering geophysics will be explored. Generally offered: Fall. Differential Tuition: \$150.

**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. Generally offered: Fall. Differential Tuition: \$150.

**GEO 3403. Biogeochemistry. (3-0) 3 Credit Hours.**

Prerequisites: GEO 1103, GEO 1111, CHE 1103, CHE 1121, and MAT 1093, or consent of instructor. This course will provide theoretical and conceptual knowledge regarding important topics in biogeochemistry, including how elements are cycled in lithosphere, hydrosphere, and atmosphere, as well as discussing the impact of water and energy associated with these cycles. We follow the elements most necessary for life on earth from their origins in the universe through the present day and consider their future in a warming climate. Basic metabolic pathways of life and mechanisms of biogeochemical transformations of carbon, nitrogen, phosphorus, sulfur, and other weathering-derived elements are discussed. Biogeochemical processes associated with natural water chemistry (surface, groundwater, ocean water, and atmospheric waters - specifically wetlands, oceans, estuaries, soils, and sediments), will be covered with theory, case studies, and numerical calculations. A portion of class will also focus on interactions between natural organic matter and microbial processes that catalyze the cycling of elements of human health concern. Simple calculations using spreadsheet programs will be used to understand some of the biogeochemical processes in a quantitative manner. These Earth systems and processes are innately complex in nature. This course aims to support students' understanding of these systems through lecture, literature, and group assignments. Generally offered: Spring. Differential Tuition: \$150.

**GEO 3413. Introduction to Earth System Science and Remote Sensing. (3-0) 3 Credit Hours.**

This course is designed for students in sciences or engineering to get basic knowledge about the Earth system and some compelling science problems related to ice, snow, water, atmosphere, and ocean. The second part of the course will include some basic knowledge of remote sensing and how different remote sensing technology can be used to sense these different types of earth environments. Generally offered: Fall. Differential Tuition: \$150.

**GEO 4001. Experiential Learning Experience. (0-0) 1 Credit Hour.**

The opportunity to apply geological principles and skills during a semester-long internship in an organization that utilizes geoscience to accomplish its mission. The grade report for this course is either "CR" (satisfactory participation in the internship) or "NC" (unsatisfactory participation in the internship). Differential Tuition: \$50.

**GEO 4002. Experiential Learning Experience. (0-0) 2 Credit Hours.**

The opportunity to apply geological principles and skills during a semester-long internship in an organization that utilizes geoscience to accomplish its mission. The grade report for this course is either "CR" (satisfactory participation in the internship) or "NC" (unsatisfactory participation in the internship). Generally offered: Fall, Spring, Summer. Differential Tuition: \$100.

**GEO 4003. Experiential Learning Experience. (0-0) 3 Credit Hours.**

The opportunity to apply geological principles and skills during a semester-long internship in an organization that utilizes geoscience to accomplish its mission. The grade report for this course is either "CR" (satisfactory participation in the internship) or "NC" (unsatisfactory participation in the internship). Generally offered: Fall, Spring, Summer. Differential Tuition: \$150.

**GEO 4013. Volcanology. (3-0) 3 Credit Hours.**

Prerequisites: GEO 3043 and either PHY 1623 or PHY 1943, 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. Generally offered: Spring. Differential Tuition: \$150.

**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. Differential Tuition: \$150.

**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. Differential Tuition: \$150.

**GEO 4043. Big Data Analysis for Extreme Environments. (3-0) 3 Credit Hours.**

This course will touch on three basic aspects of data science and technology: geospatial data, data assimilation and modeling, and cloud computation and big data analytics. Generally offered: Spring. Differential Tuition: \$150.

**GEO 4053. Climate Change. (3-0) 3 Credit Hours.**

An introduction to the Earth's climate system using real-world environmental data. Climate change is investigated with proxy records of the past, direct observations of the present, and climate model simulations of the future to understand both natural and human effects. The course also addresses how energy use and policy impacts climate change as well as how society is affected by it. Generally offered: Spring (online). Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150.

**GEO 4073. Web GIS. (2-2) 3 Credit Hours.**

Prerequisites: ES 2113 or GEO 2113 or GEO 3343, or consent of instructor. This course will focus upon developing GIS applications to be served out via the Internet or a Local Area Network (LAN). Additional topics include the use of Web authoring software. The course presents and introductory level skill set for the creation and publishing of web mapping applications using the ESRI ArcGIS Online resources and available tools. The technical focus of the course includes computer lab tutorials and case studies. Differential Tuition: \$150. Course fee: DL01 \$75.

**GEO 4083. Computer Application for Geoscience. (2-2) 3 Credit Hours.**

In this course, Geosciences students will be introduced to means to input their valuable field and lab measurements into computer systems for further processing and analysis. Students will learn the principles and fundamentals of computer programming from the Project Management point of view. By visualizing and implementing the Program Development Cycle and introducing a few programming environments (Visual Basic for Applications, Python, UNIX shell programming) students will learn how to define a problem, devise a computational solution and implement it. Differential Tuition: \$150.

**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. Differential Tuition: \$150.

**GEO 4103. Programming and Statistics for GIS. (2-2) 3 Credit Hours.**

Prerequisites: ES 2113 or GEO 2113 or GEO 3343, or consent of instructor. This course provides students with the basics of Python programming language and how GIS uses it as a scripting language to perform sophisticated statistical, map, and analysis calculations. They will be able to understand the desired outcomes of a project and organize tasks and processes to achieve said goal. Students will learn and master powerful Python tools that automate procedures, and carry out integration with data from many applications. As a result, they will have the ability to transform or create robust GIS datasets, and provide with in depth analysis leading to solid decision making. Differential Tuition: \$150.

**GEO 4113. Geomorphology. (3-0) 3 Credit Hours.**

Prerequisites: GEO 1103 or GES 2613, or consent of instructor, and junior or senior standing. In-depth study of processes that erode and deposit sediment on the Earth's surface. Sediment supply and transport capacity driving sediment transfers that change landscapes. Case studies illustrate role of geomorphic knowledge in addressing environmental problems. Field trips may be required. Generally offered: Fall. Differential Tuition: \$150. Course fee: DL01 \$75.

**GEO 4121. Geomorphology Laboratory. (1-3) 1 Credit Hour.**

Prerequisites: GEO 1103 or GES 2613, completion of or enrollment in GEO 4113, and junior or senior standing, or consent of instructor. Geomorphic concepts applied to solve specified problems. Emphasis on geomorphic data, analysis techniques, and interpretation to gain understanding and address environmental problems. Field trips may be required. Generally offered: Fall. Differential Tuition: \$50. Course Fee: IUE1 \$15.

**GEO 4133. River Science. (3-0) 3 Credit Hours.**

Prerequisites: GEO 1103 or GES 2613, or consent of instructor, and junior or senior standing. An in-depth examination of river sediment transport principles. Topics include water and sediment supply, sediment dynamics, river morphology, and channel instability. Field trips may be required. Differential Tuition: \$150.

**GEO 4203. Aqueous Geochemistry. (3-0) 3 Credit Hours.**

Prerequisites: GEO 3373, or consent of instructor. This course will facilitate to understand in detail the fundamental (primarily thermodynamic) controls on the composition of natural waters and the response of natural waters to variations in various physico-chemical parameters. Characterization of dissolved organic matter in natural waters will be introduced. This course will explore applications to environmental problems like contaminants migration in waters (ground waters, surface waters), weathering, etc., learn to solve numerical problems related to the behavior of chemical components in natural waters, and gain familiarity with simple analytical techniques for the characterization of natural waters. Differential Tuition: \$150.

**GEO 4213. Chemical Hydrology. (3-0) 3 Credit Hours.**

Prerequisite: GEO 3373 or GEO 4623, or consent of instructor. Discussion of the basic chemical principles of the water cycle, as well as environmentally relevant applications based on case studies. Detailed Groundwater Hydrogeochemistry, Surface Water Hydrogeochemistry, Surface water and Groundwater Interaction - Geochemical Principles governing, Quantitative and Modeling analysis and geologic effects on quality and flow of groundwater. Coverage of contemporary global issues related to water resources, including pollution control, environmental rehabilitation, sustainable development, and global warming exploration of anthropogenic. Topics include land-atmosphere interactions, movement of water and water rock interaction, contaminant transport in groundwater systems. ASBOG Test Syllabus and web-based teaching are followed. (Formerly GEO 4204. Credit cannot be earned for both GEO 4204 and GEO 4213.) Differential Tuition: \$150.

**GEO 4303. Geomicrobiology. (3-0) 3 Credit Hours.**

Prerequisites: GEO 1103, GEO 1111, CHE 1103, CHE 1121, and MAT 1093, or consent of instructor. The overall objective of this course is to give you an understanding of how microorganisms impact geological environments and how geological environments, in turn, influence microbial activity. The course is divided into three units: (1) Fundamentals of geomicrobiology. Here you will learn about the basic properties of microbes, how we characterize them, and how they function. We will also discuss the major biogeochemical cycles. This portion of the course will lay the foundation for learning about microbial interactions with geological environments. (2) Influence of geological environments on microorganisms. This portion of the course examines environmental controls that influence who exist within microbial communities and what kinds of reactions they carry out. We will emphasize use of thermodynamic calculations to analyze microbial communities and predict behavior. (3) Impacts of microbial activity on geological environments. We will begin this portion of the course with an overview of ways microbes impact their environments and then focus our discussion on impacts of microbial activity on water resources. Generally offered: Fall. Differential Tuition: \$150.

**GEO 4313. Biogeochemical Modeling. (3-0) 3 Credit Hours.**

Prerequisites: GEO 1103, GEO 1111, CHE 1103, CHE 1121, and MAT 1093, or consent of instructor. Students taking this course will learn how to quantitatively analyze biogeochemical reaction systems using popular geochemical modeling software, The Geochemists Workbench®. Along the way students will develop employable skills, enrich their understanding of biogeochemical reaction systems. The course will be based on a series of active learning computer exercises. Student will use the software to determine species distributions in natural waters, calculate redox pH diagrams, model the kinetics of microbial reactions, simulate rates of mineral dissolution/precipitation, create reaction path models and transport models, and determine rates of reactions and more. Generally offered: Spring. Differential Tuition: \$150.

**GEO 4453. Natural Hazards. (3-0) 3 Credit Hours.**

Prerequisites: GEO 1103, and PHY 1623 or PHY 1943. Natural hazards include tectonic (e.g. earthquakes and tsunamis, volcanoes), weather and climate (e.g. floods, hurricanes, wildfires), and extra-terrestrial (e.g. meteorite impacts, gamma ray bursts). Focus on understanding hazard vs risk, recurrence intervals and probabilistic forecasting, and local vs. regional vs. global scale catastrophic events. Generally offered: Fall. Differential Tuition: \$150.

**GEO 4503. Hydrogeophysics. (3-0) 3 Credit Hours.**

Prerequisites: MAT 1214 or higher, PHY 1963, and completion of or concurrent enrollment in GEO 4511. The presence of water and other fluids in subsurface formations, from the macro aquifer level to the micro pore level, are ultimately detected and observed through the application of geophysical principles and survey methods. This course will explore the fundamental science of hydrological geophysics, through the examination of the fundamental petrophysics and the various geophysical surface and borehole methods, such as seismic refraction, electrical resistivity and induced polarization, electromagnetic induction, microgravimetry, and geo-radar as applied to hydrogeologic investigations. Differential Tuition: \$150.

**GEO 4511. Hydrogeophysics Laboratory. (1-3) 1 Credit Hour.**

Prerequisite: Completion of or concurrent enrollment in GEO 4503. Laboratory and field-based course exploring geophysical survey systems, survey planning, data collection and analysis. Differential Tuition: \$50.

**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 groundwater supplies. Field trips may be required. Generally offered: Spring. Differential Tuition: \$150.

**GEO 4813. Planetary Geology. (3-0) 3 Credit Hours.**

Prerequisites: PHY 1963, or consent of instructor. This course is designed for students in the Sciences or Engineering and no prior Geological knowledge is assumed, although Earth will be our point of reference. Survey of the interior and surface geology of solid bodies in our Solar System and beyond (planets, moons, asteroids, comets, Kuiper Belt Objects and exoplanets). Topics will include bulk composition and differentiation of planetary interiors, surface processes such as (cryo-) volcanism and meteorite impacts, erosion and sedimentation by fluids and wind, and heat transfer styles. There will be an emphasis on how we know things and what we don't know, quantifying uncertainties in measurements and models, and the nature of planetary scientific enquiry. Differential Tuition: \$150.

**GEO 4883. Petroleum Geology. (3-0) 3 Credit Hours.**

Prerequisites: Completion of or concurrent enrollment in GEO 3103 and GEO 3123, or consent of instructor. Integrated study of the generation, migration, and entrapment of hydrocarbons in conventional and unconventional petroleum systems. Survey of surface and subsurface geological and geophysical techniques for exploration, development, and production using professional software. Case studies of petroleum systems including economic aspects of the petroleum industry. Generally offered: Spring. Differential Tuition: \$150.



**GEO 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 in geology. Differential Tuition: \$50.

**GEO 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 in geology. Differential Tuition: \$100.

**GEO 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 in geology. Differential Tuition: \$150.

**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: Geologic mapping and structural analysis of data collected in the field. Taught for three weeks only in the summer session. Special fee covers cost of transportation, room, and board while in the field. Generally offered: Summer. Differential Tuition: \$150.

**GEO 4943. Field Geology Part II. (1-6) 3 Credit Hours.**

Prerequisite: GEO 4933 or consent of instructor. Part II: Mapping and structural analysis exercises in the field and literature review covering the construction of North America from 2 GYA to the present. Taught for three weeks only in the summer session. Special fee covers cost of transportation, room, and board while in the field. Generally offered: Summer. Differential Tuition: \$150.

**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 \$15.40; STSI \$7.20. Differential Tuition: \$50.

**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. Generally offered: Fall, Spring. Differential Tuition: \$100.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$50.

**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. Differential Tuition: \$150.

## 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 \$10.27; MM01 \$7; STLF \$24.64; DL01 \$100.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$24.64; DL01 \$100.

**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 \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 \$10.27; MM01 \$7; STLF \$18.48.

**GER 3023. 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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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: DL01 \$75; LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: DL01 \$75; LRLF \$10.27; MM01 \$7; STLF \$18.48.

**GER 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: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

## Global Affairs (GLA)

### Global Affairs (GLA) Courses

**GLA 1013. US in Global Context. (3-0) 3 Credit Hours.**

This course assists students in understanding the context in which the United States interacts with the rest of the world and the effects this has on the US in return. 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 US and vice versa. Issues may include security, globalization, peace and conflict, trade, human rights, health issues, the environment, terrorism, food, technology, international diplomacy, and other intermestic issues. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. Generally offered: Fall, Spring. Course Fees: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**GLA 2603. Introduction to Global Politics. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. This course provides an overview of the intellectual development of the field of international relations and world affairs in the context of globalization. The course examines interactions among the actors of global politics - states, non-state actors, and institutions - in an interconnected world. It introduces students to basic theoretical frameworks and concepts including but not limited to discussions of levels of analysis, order, governance, and international organization. Specific topics may include conflict and security, war and peace, transnational terrorism, humanitarian intervention and peacekeeping operations, international human rights, globalization, climate change, international aid and trade, international finance, and democracy promotion. (Same as POL 2603. Credit cannot be earned for both GLA 2603 and POL 2603). Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.



**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. Topics may include political development and modernization, dependency and development, conflict, civil wars, coups and terrorism. (Same as POL 2633. Credit cannot be earned for both GLA 2633 and POL 2633.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**GLA 3003. International Law. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. This course is a survey of public international law. This course introduces the student to the constantly developing framework of international law and its cross section with global politics. Emphasis is on the foundations and substantive rules of international law and national politics. Topics may include the legal analysis of laws of war, war crimes, terrorism, human rights, economic exchange and natural resources, and international institutions. Course Fee: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**GLA 3033. Global Governance. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. This course introduces students to a range of methodological approaches relevant to studying global problems and international relations. Students will study relevant background debates in the philosophy of the social sciences, explore different methods and methodologies of GLA, consider examples of contemporary research designs associated with global problems and international relations, and learn how to craft their own research questions to address real world issues. The course will include a range of different quantitative and qualitative approaches and may include discussions on advanced topics, such as measures of central tendency and dispersion, regression, and problems of description and inference, comparative case studies, content analysis, and discourse analysis, etc. (Formerly International Governance.) (Same as POL 3033. Credit cannot be earned for both GLA 3033 and POL 3033.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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 Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**GLA 3233. Justice in International Relations. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. This course introduces students to problems of justice/injustice in international relations. Consideration is given to the challenges of conceptualization of justice and the various social movements waged to secure justice, including the evolution of the struggle for justice waged through political-legal challenges associated with cases such as the Nuremburg Trials, International Criminal Court, Truth and Reconciliation Commissions, and the contemporary debates on apology, acknowledgement, and remembrance in the quest for justice. It considers socioeconomic inequalities in societies and the vulnerabilities associated with particularities of identities defined in terms of race, religion, gender, and nationalism. Course Fees: LRLF \$10.27; STLF \$18.48.

**GLA 3343. National Security in the Global Context. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. Provides an overview of the US national security system, brief history of U.S. national security in the global context, overview of theoretical principles, economic and political dimensions of national security policy making, and U.S. engagements with other nations in both conflict non-conflict situations. Discusses constitutional and statutory authorities, selected comparative national security organizations and policies, roles of US national and international security organizations in policy development and implementation, intelligence and diplomatic inputs in developing national security strategies; congressional-executive politics and policy debates, collaborations between defense and diplomatic agencies in addressing international conflicts and resolutions, roles of non-governmental organizations, and selected case studies in U.S. national and international security decision-making. Course fees: LRLF \$10.27; STLF \$18.48.

**GLA 3363. Regionalism. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. This course provides an in-depth examination of regionalism as a form of structural interdependence, doctrine, and policy action in world politics. It introduces theories of regionalism anchored in structural and complex interdependence, geopolitics, trade, regional integration, institutionalism, regulation, and comparative perspectives. Topics may include the conceptualization of regions, new regionalism, contemporary geopolitical thinking, case studies of preferential and regional trade agreements, open regionalism and multilateralism, inter-regionalism, globalism, and regional competition. Course fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. (Formerly GRG 3423. 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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**GLA 3463. Politics of the Developing World. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. Explores political and economic situations in countries typically described as "developing." Case examples, issues related to economic and political change, and globalization are examined. Emphasizes politics of developmental strategies. (Formerly Politics of the Third World.) (Same as POL 3463. Credit cannot be earned for both GLA 3463 and POL 3463.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**GLA 3483. International Political Economy. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. This course is an introduction to the theories, 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. Further topics may include globalization, development, regional and global institutions and multinational enterprises. (Same as POL 3483. Credit cannot be earned for both GLA 3483 and POL 3483.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**GLA 3503. American Foreign Policy since World War II. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. The class offers students to study theories and the history of US foreign policy. This may include an examination of major public institutions involved in foreign policy making as well as private interests influencing American foreign policy. Further topics may include public opinion and foreign involvement, specific policies toward international organizations and major world regions, as well as issue areas such as security, global economy, human rights and developments and the global environment. (Same as POL 3503. Credit cannot be earned for both GLA 3503 and POL 3503.) Course Fees: LRLF \$10.27; STLF \$18.48.

**GLA 3513. International Organizations in World Politics. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. The class provides students with the opportunity to study the role of international organizations in world politics. Special attention is given to the practice and theory of intergovernmental organizations in areas such as security, global economy, development, human rights, and the global environment. Theories covered may include traditional IR and organizational theories. Organizations examined may include the United Nations system, regional organizations like the EU, specialized organizations such as the WHO, development banks, and security alliance systems such as NATO. (Same as POL 3513. Credit cannot be earned for both GLA 3513 and POL 3513.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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, and the successes and failures of the organization, in order to understand the UN's role in contemporary world politics and the challenges and dilemmas it faces. Topics may further include the integration of new issues such as Human Security, as well as new actors, such as nongovernmental organizations and multinational enterprises. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**GLA 3563. Current Issues in World Politics. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. An examination of pressing and contentious global issues that need to be addressed. The structure of contemporary world problems will be studied, and possible strategies for the reduction of international conflict will be assessed. Topics may include climate change, nuclear proliferation, world hunger and the divide between the Global North and South, revolution and intervention, pandemics, transnational enterprises and how to govern them, competing ideologies and radicalization, terrorism, and other issues of the global ecology. (Same as POL 3563. Credit cannot be earned for both GLA 3563 and POL 3563.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**GLA 3733. National Security Law. (3-0) 3 Credit Hours.**

Prerequisites: POL 1013, 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**GLA 3763. Globalization. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. This course examines theoretical and empirical issues in globalization, such as the role of states and non-state actors; the emergence of global civil society; patterns of international development; the influence of increased interconnectivity on security, health, environment, and violence; and the role of institutions in global politics. Further topics may include theories and debates on the scale and impact of globalization, backlash and resistance, and future trajectories. (Same as POL 3763. Credit cannot be earned for more than one of the following: GLA 3763, or POL 3763.) Course Fees: LRLF \$10.27; STLF \$18.48.

**GLA 3783. Democracy and World Politics. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. This course examines theories of democratization, democracy promotion, and cosmopolitan democracy 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 Eastern Europe and the post-Soviet space; democratic transitions in Latin America; patterns of change in Africa, the Middle East, and south Asia; and the democratizing influence of liberal democracies and international norms. (Same as POL 3783. Credit cannot be earned for both GLA 3783 and POL 3783.) (Formerly titled "Comparative Democratization.") Course Fees: LRLF \$10.27; STLF \$18.48.

**GLA 3833. Global Energy Politics. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. This course explores the policy and political aspects of the global energy system, with an emphasis on international energy issues at the intersection of human development, social change, global welfare, and environmental sustainability. It builds on theoretical perspectives of public choice, externalities, regulation, and transnationalism. Both international political and policy implications are explored with a focus on the formulation of public responses and the political engagement of citizens. Topics may include the future of fossil fuels, energy security, pipeline diplomacy, renewable energy and green politics, carbon trading, and international energy governance. A variety of case studies, drawn from U.S., European, and local developments, explore the relationship between the energy system and the environment, climate change, resource scarcity, and the emerging hydrogen economy. Course fees: LRLF \$10.27; STLF \$18.48.

**GLA 3863. Non-State Actors. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. The class provides students with the opportunity to study the role of non-state actors in world politics. This includes non-governmental advocacy groups (NGOs) but may also include multinational enterprises, epistemic communities, and illicit actors. Special attention is given to the practice and theory of non-state actors in terms of what they bring to global governance in areas such as security, global economy, development, and human rights. Course fees: LRLF \$10.27; STLF \$18.48.

**GLA 4123. Analytical Methods for National Security and Intelligence Decision-Making. (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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**GLA 4213. The Intelligence Community in World Affairs. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$36.96.

**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. Course Fees: LRLF \$10.27; STLF \$6.16.

**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. Course Fees: LRLF \$10.27; STLF \$12.32.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.



**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$36.96.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**GLA 4983. Research Practicum. (0-0) 3 Credit Hours.**

Prerequisites: GLA 1013 and permission in writing (form available) from 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**GLA 4993. Honors Thesis. (0-0) 3 Credit Hours.**

Prerequisite: 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. Course Fees: LRLF \$10.27; STLF \$18.48.

## 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 \$10.27; STLF \$24.64.

**GRK 1124. Introductory Classical Greek II. (3-2) 4 Credit Hours.**

Fundamentals of Greek grammar and readings in Greek. Generally offered: Spring. Course Fees: LRLF \$10.27; STLF \$24.64.

**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 \$10.27; STLF \$18.48.

**GRK 3123. Advanced Greek. (3-0) 3 Credit Hours.**

Prerequisite: GRK 2113 or the equivalent. Concentrated readings and interpretation of a selected Greek author, genre, or series of texts. May be repeated for credit when topics vary. Course Fee: LRLF \$10.27; STLF \$18.48.

## Health (HTH)

**NOTE: All prerequisites for Health (HTH) courses must be completed with a grade of "C-" or better.**

### Health (HTH) Courses

**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; LRHC \$10; STHC \$18; DL01 \$75.

**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; LRHC \$10; STHC \$18; DL01 \$75.

**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; LRHC \$10; STHC \$6.

**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: LRHC \$10; STHC \$18; DL01 \$75.

**HTH 2713. Human Disease Etiology, Prevention and Treatment. (3-0) 3 Credit Hours.**

An in-depth look at the etiology, prevention, and treatment of communicable and non-communicable diseases afflicting humans. Generally offered Fall and Spring. Course fees: LRHC \$10; STHC \$18.



**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: DL01 \$75; LRHC \$10; STHC \$18.

**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: DL01 \$75; LRHC \$10; STHC \$18.

**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: DL01 \$75; LRHC \$10; STHC \$18.

**HTH 3031. Peer Education in Health. (2-2) 1 Credit Hour.**

Prerequisite: Consent of instructor. Course offers the opportunity for students to participate in the Student Health Services Peer Educator Program. Students will have the opportunity to learn about health topics relevant to the college student population and implement outreach activities to educate and encourage the adoption of healthy behaviors among the UTSA student community. May be repeated for credit for a maximum of 6 semester credit hours. Generally offered: Fall, Spring, or Summer. Course Fees: LRHC \$10; STHC \$6.

**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: LRHC \$10; STHC \$18.

**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: DL01 \$75; LRHC \$10; STHC \$18.

**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: LRHC \$10; STHC \$18; DL01 \$75.

**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: DL01 \$75; LRHC \$10; STHC \$18.

**HTH 3533. Drugs and Health. (3-0) 3 Credit Hours.**

Prerequisites: 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: LRHC \$10; STHC \$18; DL01 \$75.

**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: DL01 \$75; LRHC \$10; STHC \$18.

**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: LRHC \$10; STHC \$18; DL01 \$75.

**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: DL01 \$75; LRHC \$10; STHC \$18.

**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: DL01 \$75; LRHC \$10; STHC \$18.

**HTH 3713. Effective Messaging in Public Health. (3-0) 3 Credit Hours.**

Prerequisite: HTH 2413. Reviews the basic concepts of public health-specific communication, including technical and professional writing and how to leverage the use of mass media and other emerging technologies. Generally offered Fall and Spring. Course Fees: LRHC \$10; STHC \$18.

**HTH 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. (Formerly SOC 4043 and PUB 4043. Credit can only be earned for one of the following: HTH 4043, PUB 4043, or SOC 4043). Generally offered: Fall and Spring. Course Fees: LRHC \$10; STHC \$18.

**HTH 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. (Formerly SOC 4053 and PUB 4053. Credit can only be earned for one of the following: HTH 4053, PUB 4053, or SOC 4053). Generally offered: Fall and Spring. Course Fees: LRHC \$10; STHC \$18.

**HTH 4503. Epidemiology. (3-0) 3 Credit Hours.**

Prerequisites: HTH 2413 and HTH 2713. Provide basic knowledge about epidemiological applications, including the investigative methods and research designs for studying disease outbreaks, new epidemics and chronic disease. Generally offered Fall and Spring. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

**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: LRHC \$10; STHC \$18; DL01 \$75.

**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: LRHC \$10; STHC \$18; DL01 \$75.

**HTH 4533. Nutrition and Health. (3-0) 3 Credit Hours.**

Prerequisites: HTH 2413, HTH 3503, HTH 3663, and HTH 3013, BIO 2043, or NDT 2043. 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: LRHC \$10; STHC \$18; DL01 \$75.

**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: DL01 \$75; LRHC \$10; STHC \$18.

**HTH 4563. Health Policy, Law and Ethics. (3-0) 3 Credit Hours.**

Prerequisite: HTH 2413. Introduction to health policy issues including related interventions, theoretical motivations, influence of the political, bureaucratic, and social environments on policy, and population health consequences of policy. Legal and ethical components are also discussed. Generally offered Fall and Spring. Course Fees: LRHC \$10; STHC \$18.

**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: STHC \$6.

**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: STHC \$18.

**HTH 4921. Capstone for Public Health. (1-0) 1 Credit Hour.**

This course aids students in synthesizing their classroom and internship experiences to reinforce critical skills and key responsibilities for students in public health. This course will provide students with an overview of resources, skills, and recommendations regarding their professional development. Students are required to take this course during their last semester. Course Fees: DL01 \$25; LRHC \$10; STHC \$6.

**HTH 4936. Internship in Health. (0-0) 6 Credit Hours.**

Prerequisites: Student must be within 30 credits of graduation, have a 2.5 GPA, and have completed HTH 2413, HTH 3503, HTH 3663, and HTH 3713; if student does not have a 2.5 GPA, they should contact the department about substitution options. The course provides the opportunity for work experience related to public health. Opportunities are developed in consultation with the Department of Public Health and local organizations. No more than 6 semester credit hours of internship will apply to a bachelor's degree. (Same as KIN 4936. Credit cannot be earned for both HTH 4936 and KIN 4936.) Generally offered: Fall, Spring, Summer. Course Fees: STFK \$57; STHC \$36.

**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: LRHC \$10; STHC \$6.

**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: LRHC \$10; STHC \$12.

**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: LRHC \$10; STHC \$18; DL01 \$75.

**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: STHC \$18.

## 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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**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. (Formerly IDS 2203. Credit cannot be earned for both HIS 2123 and IDS 2203.) Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. (Formerly IDS 2213. Credit cannot be earned for both HIS 2133 and IDS 2213.) Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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 \$10.27; STLF \$18.48.

**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 \$10.27; STLF \$18.48; DL01 \$75.

**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 \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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 \$10.27; STLF \$18.48.

**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 \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**HIS 3013. Historical Research Methods. (3-0) 3 Credit Hours.**

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 3013 to enroll in HIS 4973. (Formerly HIS 2003. Credit cannot be earned for both HIS 2003 and HIS 3013.) Generally offered: Fall, Spring. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10; STLF \$18.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**HIS 3103. History of Science. (3-0) 3 Credit Hours.**

This course examines the development of scientific thinking from classical antiquity to the present. It traces the impact that science has had on society and culture throughout history and the impact that society and culture have had on science. The course may include a variety of topics, including the origins of scientific thinking in classical antiquity, the relationship between science and religion during the medieval period, the relationship between science and art during the Renaissance, the origins of the Scientific Revolution, and the response to various theories, including Darwin's theory of evolution and Einstein's theory of relativity. Course fees: LRLF \$10.27; STLF \$18.48.

**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.") Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.



**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**HIS 3383. History of Technology. (3-0) 3 Credit Hours.**

This course examines the development of technological systems from classical antiquity to the present. It traces the impact that technology has had on society and culture throughout history, and the impact that society and culture have had on technology. The course may include topics such as the role of technology in ancient civilizations, the industrialization of production and consumption, the profound social impact of various inventions, and the importance of technological maintenance. Course fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.



**HIS 3413. Data and Society. (3-0) 3 Credit Hours.**

The course examines the social, ethical, and legal dimensions of data throughout history. Students will learn how social context shapes the collection, interpretation, and uses of data by examining the changing nature of categories defined by class, ethnicity, race, gender, and other elements of collective and individual identity. The course challenges students to ask how data is being collected, how data has been used to shape policy, and how social conditions shape the process of data analysis. The course examines the reciprocal impact between data and many different parts of society, which may include transportation, energy, governance, education, labor, agriculture, and warfare, among other topics. Course fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**HIS 3453. History of Medicine. (3-0) 3 Credit Hours.**

The course examines the social and cultural history of health and healing. 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 culture. The particular focus of the course may vary by semester to more closely examine different regions of the world and a range of topics that may include: epidemics and pandemics, women and health, health disparities, medical professions, technology and medicine, conceptions of contagion, and popular culture and health history. May be repeated for credit when topics vary. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**HIS 3583. Digital History. (3-0) 3 Credit Hours.**

This course introduces students to digital history. It examines how digital tools and methods have transformed the collection, curation, analysis, interpretation, and presentation of historical data. Students will learn to use some of the latest digital tools, and learn to contextualize those digital tools. The course introduces students to a variety of major theories, methods, and themes in digital history, and students will have opportunities to learn how to evaluate various collections, projects, and initiatives in digital history. May be repeated for credit when topics vary. Course fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**HIS 3693. Women and Gender in Early Modern Europe. (3-0) 3 Credit Hours.**

This course will examine the history of women and gender in early modern Europe from roughly 1450 through 1800. It will focus on the significant, yet often overlooked contributions of European women in various spheres of everyday life such as culture, politics, religion, science, and others. Course fees: LRLF \$10.27; STLF \$18.48.

**HIS 3733. Early Modern Europe. (3-0) 3 Credit Hours.**

This course will look at the major cultural, social, and political developments that took place in Europe from around 1450 to 1800, including the Renaissance, the Reformation, the Enlightenment, and others. It will also explore various aspects of the average person's everyday life. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**HIS 3793. Caribbean History. (3-0) 3 Credit Hours.**

This course focuses on the history of the Caribbean from pre-colonial times to the 21st Century. Topics may include an overview of the major themes of the Caribbean past, such as discovery and conquest, colonialism and independentism, slavery and emancipation, economic system, migrations, and cultural features. This course will emphasize the region's diversity and its importance in the broader history of the Americas. Course fees: LRLF \$10.27; STLF \$18.48.

**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.) May be repeated for credit when topics vary. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**HIS 3853. Refugees and Exiles: A History. (3-0) 3 Credit Hours.**

Prerequisite: HIS 3013. An examination of the global history of refugees and deported peoples from the Middle Ages to the present day, offering practice in comparative social/political history and the acquisition of career skills. This course will be conducted entirely online. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**HIS 3883. Ottoman Empire. (3-0) 3 Credit Hours.**

Survey of Ottoman history from its beginning around 1300 to the demise of the Ottoman Empire following the First World War. The first part of the course will provide a general overview of the transformation of the Ottomans from a small principality into a major empire with vast lands in Asia, Africa, and Europe, the institutions that enabled its longevity for more than six centuries, and the process that led to its collapse. The second half of the course will be devoted to various specific themes including ethnic and religious diversity, the military, women and gender, religion, law, food, and slavery in the Ottoman context. Course fees: LRLF \$10.27; STLF \$18.48.

**HIS 3893. Modern Middle East. (3-0) 3 Credit Hours.**

This course explores the history of the Middle East from the early 1800s to the present. General topics may include European colonial and imperial expansion into predominantly Muslim lands, the emergence of anti-imperial movements, the rise of modern nation-states, the Arab-Israeli conflict, attempts at reforming Islamic law, education, political thought, and gender relations, and the formation of modern Islamic revolutionary movements. This course may use relevant films, literature, and media will be used to supplement historical sources. May be repeated for credit when topics vary. Course fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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.") Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**HIS 3993. Slavery and its Legacy in the Digital Age. (3-0) 3 Credit Hours.**

The topic of slavery and its legacy continues to connect the past to the present and stimulate historical debates. This course covers a variety of essential components, including ancient slavery, modern slavery, the Atlantic Slave Trade, slavery in the United States, and digital resources for understanding slavery. Recent public debates around race, social inequalities, and access to political power are often framed as an aftereffect of slavery within modern global culture. Students will become familiar with online and archival resources for exploring the history of slavery and its legacies in contemporary culture. Course fees: LRLF \$10.27; STLF \$18.48.

**HIS 4013. Old Regime and the French Revolution. (3-0) 3 Credit Hours.**

This course will introduce students to the major events of the French Revolution, from its origins in the Old Regime through the Napoleonic Era. It will examine some of the topics of ongoing interest and debate that continue to shape the field, including its causes and radicalization. Students will also gain an understanding of the revolution's place in history and its enduring influence in the modern world. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Credit cannot be earned for both HIS 4923 and HIS 4603.) Course Fees: MEFH \$5; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$6.16.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**HIS 4933. Internship in History. (0-0) 3 Credit Hours.**

Prerequisites: HIS 3013 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**HIS 4973. Seminar in History. (3-0) 3 Credit Hours.**

Prerequisite: HIS 3013 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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

## Honors (HON)

### Honors (HON) Courses

**HON 1000. Honors 101. (1-0) 0 Credit Hours.**

Prerequisite: Membership in the Honors College. A series of weekly classes and peer coach meetings on how to excel in the Honors College. Weekly class topics are arranged around how to achieve excellence in required non-curricular and curricular areas. Students must complete Honors 101 within their first year in the Honors College in order to stay benefits eligible. Generally offered: Fall, Spring.

**HON 1100. Top Scholar. (1-0) 0 Credit Hours.**

Prerequisite: Membership in the Top Scholar program. During this course, designed exclusively for UTSA Top Scholars, students will explore topics related to Knowledge, Leadership, and Service through a series of speakers as well as group and individual signature experiences. Students will create a personal professional portfolio, which they will build upon each semester as they progress through their undergraduate experience as a UTSA Top Scholar. Honors College Learning Outcomes most directly relevant to this course include: Adaptability & Resilience, Project Management, Communicating Effectively, Intellectual Dexterity, Ethical Reasoning, and Self-Reflection and Awareness. This course is repeated each semester that the student is a member of the Top Scholar program.

**HON 2223. Special Topics in Social and Behavioral Sciences. (3-0) 3 Credit Hours.**

Prerequisite: Membership in the Honors College or consent of instructor. Interdisciplinary lower division 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 2233. Special Topics in Arts and Humanities. (3-0) 3 Credit Hours.**

Prerequisite: Membership in the Honors College or consent of instructor. Interdisciplinary lower division seminar that explores broad topics and themes in arts and humanities. May be repeated for credit when topics vary. Generally offered: Fall, Spring.

**HON 2243. Special Topics in Business and the Professions. (3-0) 3 Credit Hours.**

Prerequisite: Membership in the Honors College or consent of instructor. Interdisciplinary lower division seminar that explores broad topics and themes in business and the professions. May be repeated for credit when topics vary. Generally offered: Fall, Spring.

**HON 2253. Special Topics in the Sciences. (3-0) 3 Credit Hours.**

Prerequisite: Membership in the Honors College or consent of instructor. Interdisciplinary lower division seminar that explores broad topics and themes in the sciences. May be repeated for credit when topics vary. Generally offered: Fall, Spring.

**HON 2301. Honors: The Civic Ethos. (1-0) 1 Credit Hour.**

Prerequisite: Membership 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. Generally offered: Fall, Spring, Summer. Course Fee: DL01 \$25.



**HON 3021. Honors Essay Writing. (0-0) 1 Credit Hour.**

Prerequisites: WRC 1013 and WRC 1023, membership 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 3100. Honors Service. (0-0) 0 Credit Hours.**

Prerequisites: Membership in the Honors College and consent of instructor; students may enroll in this course when they have completed or are near completion of an out-of-class 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, and social impact that extends beyond volunteerism. In the course, students will prepare and present at the Honors College Experiential Learning Fair to demonstrate achievement of learning outcomes. May be repeated for credit when topics vary. Generally offered: Fall, Spring.

**HON 3101. Honors Service. (1-0) 1 Credit Hour.**

Prerequisites: Membership in the Honors College and 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. Generally offered: Fall, Spring.

**HON 3103. Honors Service. (3-0) 3 Credit Hours.**

Prerequisite: Membership 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. Generally offered: Fall, Spring. Course fee: DL01 \$75.

**HON 3223. Honors Seminar in Social & Behavioral Sciences. (3-0) 3 Credit Hours.**

Prerequisite: Membership 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. Course fee: DL01 \$75.

**HON 3233. Honors Seminar in Arts & Humanities. (3-0) 3 Credit Hours.**

Prerequisite: Membership 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. Course fee: DL01 \$75.

**HON 3243. Honors Seminar in Business & the Professions. (3-0) 3 Credit Hours.**

Prerequisite: Membership 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. Generally offered: Fall, Spring.

**HON 3253. Honors Seminar in the Sciences. (3-0) 3 Credit Hours.**

Prerequisite: Membership 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. Course fee: DL01 \$75.

**HON 3260. Honors Professional Development. (0-0) 0 Credit Hours.**

Prerequisites: Membership in the Honors College and consent of instructor; students may enroll in this course when they have completed or are near completion of an out of class experience of professional development and knowledge acquisition that will make students more competitive in the workforce. In the course, students will prepare and present at the Honors College Experiential Learning Fair to demonstrate achievement of learning outcomes. May be repeated for credit when topics vary. Generally offered: Fall, Spring.

**HON 3261. Honors Professional Development. (1-0) 1 Credit Hour.**

Prerequisites: Membership in the Honors College and consent of instructor. An advanced experiential course focusing upon professional 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 check the online section description before registering for the course. May be repeated for credit when topics vary. Generally offered: Fall, Spring.

**HON 3263. Honors Professional Development. (3-0) 3 Credit Hours.**

Prerequisite: Membership in the Honors College or consent of instructor. An advanced experiential course focusing on professional 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 check the online section description before registering for the course. May be repeated for credit when topics vary. Generally offered: Fall, Spring. Course fee: DL01 \$75.

**HON 3301. Graduate School Workshop. (1-0) 1 Credit Hour.**

Prerequisite: Membership 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.

**HON 3310. Honors Intellectual Achievement and Research. (0-0) 0 Credit Hours.**

Prerequisites: Membership in the Honors College and consent of instructor; students may enroll in this course when they have completed or are near completion of an out-of-class experience that demonstrates mastery of set of research skills that can lead to peer-reviewed outcomes. In the course, students will prepare and present at the Honors College Experiential Learning Fair to demonstrate achievement of learning outcomes. May be repeated for credit when topics vary. Generally offered: Fall, Spring.

**HON 3311. Honors Intellectual Achievement and Research. (1-0) 1 Credit Hour.**

Prerequisites: Membership in the Honors College and consent of instructor. An advanced experiential course designed to help students demonstrate mastery of a set of research skills that can lead to peer-reviewed outcomes. May be repeated for credit when topics vary. Generally offered: Fall, Spring.

**HON 3313. Honors Intellectual Achievement and Research. (3-0) 3 Credit Hours.**

Prerequisite: Membership in the Honors College or consent of instructor. An advanced experiential course designed to help students demonstrate mastery of a set of research skills that can lead to peer-reviewed outcomes. May be repeated for credit when topics vary. Generally offered: Fall, Spring.



**HON 3400. Honors Cultural Exploration. (0-0) 0 Credit Hours.**

Prerequisites: Membership in the Honors College and consent of instructor; students may enroll in this course when they have completed or are near completion of an out-of-class experience that immersed them in cultural settings or where they learned new socio-cultural skills. Emphasis will be on broadening the student's cultural capital and enabling them to act more comfortably in a global environment. In the course, students will prepare and present at the Honors College Experiential Learning Fair to demonstrate achievement of learning outcomes. May be repeated for credit when topics vary. Generally offered: Fall, Spring.

**HON 3401. Honors Cultural Exploration. (1-0) 1 Credit Hour.**

Prerequisites: Membership in the Honors College and consent of instructor. An advanced experiential 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. Generally offered: Fall, Spring.

**HON 3403. Honors Cultural Exploration. (3-0) 3 Credit Hours.**

Prerequisite: Membership 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. Generally offered: Fall, Spring.

**HON 3500. Honors Engaged Living. (0-0) 0 Credit Hours.**

Prerequisites: Membership in the Honors College and consent of instructor; students may enroll in this course when they have completed or are near completion of an out-of-class experience where students gained 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. In the course, students will prepare and present at the Honors College Experiential Learning Fair to demonstrate achievement of learning outcomes. May be repeated for credit when topics vary. Generally offered: Fall, Spring.

**HON 3501. Honors Engaged Living. (1-0) 1 Credit Hour.**

Prerequisites: Membership in the Honors College and consent of instructor. An advanced experiential course wherein 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. (Formerly titled "Honors Capstone Exploration.") Generally offered: Fall, Spring.

**HON 3503. Honors Engaged Living. (3-0) 3 Credit Hours.**

Prerequisite: Membership in the Honors College or consent of instructor. An advanced experiential course wherein 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. Generally offered: Fall, Spring. Course fee: DL01 \$75.

**HON 3513. Archer. 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. Course Fee: DL01 \$75.

**HON 3523. Archer. 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. Archer. 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 3600. Honors Skill Development. (0-0) 0 Credit Hours.**

Prerequisites: Membership in the Honors College and consent of instructor; students may enroll in this course when they have completed or are near completion of an out-of-class experience where students learned specific skills that are contemporary, relevant to a wide sector of the workforce, and/or helpful for improving one's quality of life. In the course, students will prepare and present at the Honors College Experiential Learning Fair to demonstrate achievement of learning outcomes. May be repeated for credit when topics vary. Generally offered: Fall, Spring.

**HON 3601. Honors Skill Development. (1-0) 1 Credit Hour.**

Prerequisites: Membership in the Honors College and consent of instructor. An advanced experiential 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. Generally offered: Fall, Spring.

**HON 3603. Honors Skill Development. (3-0) 3 Credit Hours.**

Prerequisite: Enrollment in the Honors College or consent of instructor. An advanced experiential 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. Generally offered: Fall, Spring. Course fee: DL01 \$75.

**HON 4403. Citymester. City Sites. (3-0) 3 Credit Hours.**

Prerequisite: Membership 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. Generally offered: Spring, Summer.

**HON 4911. Honors Independent Study. (0-0) 1 Credit Hour.**

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 4913. Honors Independent Study. (0-0) 3 Credit Hours.**

Prerequisite: Membership in the Honors College and 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 each semester.

**HON 4933. Honors Internship. (0-0) 3 Credit Hours.**

Prerequisite: Membership 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 each semester.

**HON 4936. Honors Internship. (0-0) 6 Credit Hours.**

Prerequisite: Membership 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 each semester.

**HON 4980. Honors Tutorial III (non-credit). (0-0) 0 Credit Hours.**

Prerequisites: HON 3984 or Honors College documentation of successful completion of Honors Tutorial II; membership in the Honors College; and consent of instructor. An in-depth exploration of the Tutorial I theme from primary texts in the discipline(s) of the student's major. Focus is upon reading, writing, and speaking skills about a topic from that specific discipline. This is a self-guided course in consultation with a professor in the student's major. It requires the student to pass a written and oral examination on the semester's materials. Generally offered each semester.

**HON 4984. Honors Tutorial III. (0-0) 4 Credit Hours.**

Prerequisites: HON 3984 or Honors College documentation of successful completion of Honors Tutorial II; membership in the Honors College; and consent of instructor. An in-depth exploration of the Tutorial I theme from primary texts in the discipline(s) of the student's major. Focus is upon reading, writing, and speaking skills about a topic from that specific discipline. This is a self-guided course in consultation with a professor in the student's major. It requires the student to pass a written and oral examination on the semester's materials. Generally offered each semester.

**HON 4993. Honors Thesis. (0-0) 3 Credit Hours.**

Prerequisites: Membership in the Honors College and consent of instructor. Supervised research and preparation of an Honors Thesis project. May be repeated once for credit. Generally offered each semester.

## 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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**HUM 2043. Basics of Screenwriting. (3-0) 3 Credit Hours.**

Prerequisite: Completion of the Core Curriculum requirement in Communication. Introduction to basic formats, strategies, and techniques in screenwriting for various genres. Includes close textual analysis of screenplays, as well as practice and development in writing screenplays. Course fees: LRLF \$10.27; STLF \$18.48.

**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 \$10.27; STLF \$18.48.

**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 \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**HUM 3023. History of Cultures. (3-0) 3 Credit Hours.**

Interdisciplinary investigation of the development of ideas in literature, philosophy, art, politics, and society. May be repeated for credit when topic varies. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**HUM 3123. Religion and Culture. (3-0) 3 Credit Hours.**

This course examines religion in contemporary culture, focusing on a theme or context. Examples include: religion and science, religion in film, religion and food, religion and punishment. May be repeated for credit when topic varies. Course Fees: LRLF \$10.27; STLF \$18.48.

**HUM 3133. Theory and Method in the Study of Religion. (3-0) 3 Credit Hours.**

A survey of interdisciplinary approaches to the study of religion, including psychological, sociological, and anthropological theories of religion, along with recent challenges to such theories from feminist, post-modern and post-colonial perspectives. Course Fees: LRLF \$10.27; STLF \$18.48.

**HUM 3143. Topics in Religious Studies. (3-0) 3 Credit Hours.**

An in-depth exploration of a religious tradition, concept, practice, or theme. Examples include: indigenous religious practices; atheism; Islam; afterlife; prophets. May be repeated for credit when topic varies. Course Fees: LRLF \$10.27; STLF \$18.48.

**HUM 3153. Humanistic Approaches to STEM. (3-0) 3 Credit Hours.**

Interdisciplinary examination of science, medicine, and technology through the lens of theories and concepts developed within the humanities. May be repeated for credit when topics vary. Course Fees: LRLF \$10.27; STLF \$18.48.

**HUM 3163. Global Humanities. (3-0) 3 Credit Hours.**

Intensive study of the humanities on a global scale. This course includes a substantive focus on humanities outside of the Western cultural context. May be repeated for credit when topics vary. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**HUM 3173. Digital Humanities. (3-0) 3 Credit Hours.**

This course studies the interface of humanities and digital technology. It includes hands-on training in digital humanities, including an independent project that connects students to the wider community. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**HUM 3213. Classics of Religious Thought. (3-0) 3 Credit Hours.**

An intensive examination of selected literary works that are important within different religious traditions. May be taught as a survey or with a focus on particular authors. May be repeated for credit when topic varies. Course Fees: LRLF \$10.27; STLF \$18.48.

**HUM 3223. Sacred Texts as Literature. (3-0) 3 Credit Hours.**

This course introduces frameworks for reading sacred texts as literary works, drawing on a range of theoretical perspectives, and highlighting major themes, stories, and motifs. May be repeated for credit when topic varies. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**HUM 3323. Race, Ethnicity, and Film. (3-0) 3 Credit Hours.**

Investigation of issues related to race and ethnicity in contemporary or historical film. May be taught with a focus on representation in film, theories of film, or producers and consumers of film. Course fees: LRLF \$10.27; STLF \$18.48.

**HUM 3333. Gender, Sexuality, and Film. (3-0) 3 Credit Hours.**

Investigation of issues related to gender and sexuality in contemporary or historical film. May be taught with a focus on representation in film, theories of film, or producers and consumers of film. Course fees: LRLF \$10.27; STLF \$18.48.

**HUM 3343. Antiquity on Film. (3-0) 3 Credit Hours.**

Exploration of the various intersections between classics and film/television, such as the depiction of classical civilizations; the enduring popularity of classical mythology, literature, history, and other sources on modern screens; or related topics. Course fees: LRLF \$10.27; STLF \$18.48.

**HUM 3353. Film and Medicine. (3-0) 3 Credit Hours.**

Investigation of issues at the intersection of film and medicine, such as film and television representations of illness, health, and the medical profession; narrative and documentary film explorations of contemporary and historical medical practices and ethics; the role of film in shaping popular conceptions and expectations of medicine; and the use of film as a tool in medical treatment, administration, and education. Course fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**HUM 4013. Screenwriting Workshop. (3-0) 3 Credit Hours.**

Prerequisite: HUM 2043. Advanced development of full-length screenwriting projects and the incorporation of peer analysis and critique. Can be repeated for up to 6 credits. Course fees: LRLF \$10.27; STLF \$18.48.

**HUM 4811. Internship in Film/Media. (0-0) 1 Credit Hour.**

Prerequisite: Enrollment as a Film Studies minor with junior or senior standing, or consent of instructor. Supervised experience relevant to film or media studies. A maximum of 6 credit hours can be earned through Internship in Film/Media. Course fees: LRLF \$10.27; STLF \$6.16.

**HUM 4812. Internship in Film/Media. (0-0) 2 Credit Hours.**

Prerequisite: Enrollment as a Film Studies minor with junior or senior standing, or consent of instructor. Supervised experience relevant to film or media studies. A maximum of 6 credit hours can be earned through Internship in Film/Media. Course fees: LRLF \$10.27; STLF \$12.32.

**HUM 4813. Internship in Film/Media. (0-0) 3 Credit Hours.**

Prerequisite: Enrollment as a Film Studies minor with junior or senior standing, or consent of instructor. Supervised experience relevant to film or media studies. A maximum of 6 credit hours can be earned through Internship in Film/Media. Course fees: LRLF \$10.27; STLF \$18.48.

**HUM 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 Fees: LRLF \$10.27; STLF \$6.16.

**HUM 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 Fees: LRLF \$10.27; STLF \$12.32.

**HUM 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 Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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") Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$6.16.

**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. Course Fees: LRLF \$10.27; STLF \$12.32.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

## Information Systems (IS)

### Information Systems (IS) Courses

**IS 1003. Unlocking Cyber. (3-0) 3 Credit Hours.**

Cybersecurity is a relevant topic for everyone today, personally and professionally. This three-hour course covers core security terminology and concepts and discusses current challenges and threats faced by individuals, organizations, and nations through current topics, case studies, and hands-on labs, and career profiles. We introduce a few tools of the trade to familiarize students with the problem-solving techniques and analytical skills needed for cybersecurity and related degree programs, and with the aim of increasing awareness of the field and its critical importance to our world. Course Fees: BISP \$10; BTSI \$15.41; LRB1 \$15.41; DL01 \$75.

**IS 1403. Business Information Systems Fluency. (3-0) 3 Credit Hours. (TCCN = BCIS 1305)**

This 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. Microsoft Office is required to complete the projects assigned in the course. This is an online course. All coursework (lessons, exams, and projects) is completed online. Course Fees: BISP \$10; BTSI \$15.41; DL01 \$75; LRB1 \$15.41.

**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 an online course. All coursework (lessons, exams, and projects) is completed online. 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 certified or have taken an equivalent course that specifically prepares students for the MOS Excel exam can petition for exemption for the course. Students in quantitative majors (such as Accounting, Actuarial Science, Economics, Finance, Management Science, and Statistics and Data Science) are strongly encouraged to take this course in lieu of IS 1403. Course Fees: BISP \$10; BTSI \$15.41; DL01 \$75; LRB1 \$15.41.



**IS 2053. Programming Languages I with Scripting. (3-0) 3 Credit Hours.**

Prerequisites: IS 1003 with a grade of "C-" or better. This course introduces programming logic and constructs in Python and basic command line scripting in Linux and Windows environments. Control structures, arithmetic and logical operators, functions, arrays, regular expressions, classes/objects, and exception handling are covered in Python. Students will also write Bash and PowerShell scripts to execute basic processes and tasks. The emphasis will be on building problem solving and coding skills that apply to any language. Course Fees: BISP \$10; BTSI \$15.41; LRB1 \$15.41; DL01 \$75.

**IS 2063. Programming Languages II with Java. (3-0) 3 Credit Hours.**

Prerequisites: IS 2053 with a grade of "C-" or better. The course focuses on high-level programming constructs through the Java programming language. Students will apply an object-oriented framework to business and security problems using data structures, built-in libraries, file processing, and exception handling, and become familiar with concepts such as inheritance, polymorphism, and generics. Course Fees: BISP \$10; BTSI \$15.41; LRB1 \$15.41; DL01 \$75.

**IS 3003. Principles of Information Systems for Management. (3-0) 3 Credit Hours.**

An overview of fundamental MIS concepts within a framework for describing and analyzing managerial/organizational information needs. Includes coverage of hardware and software tools, information structures, various types of information systems, and formal problem-solving techniques. Issues related to organizational controls, security, globalization, collaboration, and ethics as a result of changing technologies are discussed. A variety of assessment methods will be assigned to illustrate the use of specific tools and techniques for problem-solving. Differential Tuition: \$126. Course Fee: DL01 \$75.

**IS 3033. Operating Systems Security. (3-0) 3 Credit Hours.**

Prerequisites: IS 2053 (IS 2031 and IS 2033 in previous catalogs). IS 3033 is a hands-on course with an emphasis on studying real-world cyber security challenges of Operating System (OS). Throughout the course, students will be introduced to the fundamental knowledge of OS such as process scheduling, memory management, I/O device and file systems etc. as well as hands-on approaches to securing and hardening the essential components of a specified OS (Unix-like or Windows). The lab exercises of this course provide students with comprehensive practices on secure operation and maintenance, secure server configuration, system-level firewalls, kernel security module, logging, and anti-malware measures, etc. Differential Tuition: \$126. Course Fees: DL01 \$75, ISCS \$75.

**IS 3043. Secure Mobile App Development. (3-0) 3 Credit Hours.**

Prerequisites: IS 2063 (IS 2041 and IS 2043 in previous catalogs), 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. This course can be an elective for the information systems major and cyber security major and minor. Differential Tuition: \$126.

**IS 3053. Fundamentals of Cyber Security. (3-0) 3 Credit Hours.**

This course covers core cyber security terminology, concepts, and challenges faced by individuals, organizations, and nations through case studies and discussions. Application to business environments will be emphasized with hands-on exercises in areas such as network/device security hygiene, search techniques, incident response, and risk assessment. The overall aim of the course is to familiarize students with security techniques and strategies needed across a broad range of industry sectors. Credit for this course cannot be counted toward the B.B.A. in Information Systems or the B.B.A. in Cyber Security. Differential Tuition: \$126.

**IS 3063. Database Management for Information Systems. (3-0) 3 Credit Hours.**

Prerequisite: IS 2053 (IS 2031 and IS 2033 in previous catalogs). A study of database management systems (DBMS) features, functions, and architecture, including database conceptual design, data models, entity relationship diagrams, database query design, and database administration. A contemporary DBMS product such as MS SQL Server will be used to illustrate principles in a relational database. Differential Tuition: \$126. Course Fees: ISCS \$75; DL01 \$75.

**IS 3073. Application Development. (3-0) 3 Credit Hours.**

Prerequisite: IS 2063 (IS 2041 and IS 2043 in previous catalogs). This course examines the challenges, techniques, and methodologies involved with updating, maintaining, and testing software applications and packages. Students will analyze cases that address implementation and deployment issues; analysis and testing of code will be included. Differential Tuition: \$126.

**IS 3413. Telecommunications and Networking. (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. Includes comparisons of network topologies, protocol fundamentals, and architectures. Ethernet, IEEE 802.11x, TCP/IP, dedicated circuit, and VPN technologies are introduced. Network security fundamentals are explored. (Formerly titled "Introduction to Telecommunications for Business." Same as IS 6113. Credit cannot be earned for both IS 3413 and IS 6113.) Differential Tuition: \$126. Course Fees: DL01 \$75, ISCS \$75.

**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.") Differential Tuition: \$126. Course Fees: DL01 \$75, ISCS \$75.

**IS 3433. Cyber Crime Investigation Principles. (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. (Formerly titled "Introduction to Digital Forensics.") Differential Tuition: \$126. Course Fees: ISCS \$75; DL01 \$75.



**IS 3453. Networking Fundamentals. (3-0) 3 Credit Hours.**

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. Differential Tuition: \$126. Course fee: DL01 \$75.

**IS 3513. Information Assurance and Security. (3-0) 3 Credit Hours.**

Prerequisite: IS 3413 or IS 3453 with a grade of "C-" or better or consent of instructor. This course will provide the student the opportunity to learn about the basic elements that comprise Information Assurance Security. An in-depth presentation of information assurance topics such as fraud, eavesdropping, traffic analysis, intrusion detection and prevention, hacking, viruses, cryptography, risk management, and secure architectures will be discussed. (Formerly IS 4453. Same as IS 6213. Credit can only be earned for one of the following: IS 6213, IS 3513, and IS 4453.) Differential Tuition: \$126. Course Fees: DL01 \$75, ISCS \$75.

**IS 3523. Intrusion Detection and Incident Response. (3-0) 3 Credit Hours.**

Prerequisite: IS 3513 with a grade of "C-" or better. This course will provide the student with the opportunity to learn about the elements that comprise intrusion detection and incident response. It provides an in-depth look at intrusion detection methodologies, tools, and approaches to handling intrusions when they occur. It examines the laws that address cyber crime 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. (Same as IS 6223. Credit cannot be earned for both IS 6223 and IS 3523.) Differential Tuition: \$126. Course Fees: DL01 \$75, ISCS \$75.

**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. (Same as IS 6763. Credit cannot be earned for both IS 3533 and IS 6763.) Differential Tuition: \$126. Course fee: DL01 \$75.

**IS 3543. Cyber Analytics Policy, Law and Ethics. (3-0) 3 Credit Hours.**

There are numerous policy, legal, and ethical issues that surround the collection, warehousing, and analysis of cyber data, which includes both system and user data. Further, there are policy and legal issues that impact whether data even exists to be collected and analyzed. Students will be given the opportunity to learn how to write, implement, and apply cyber analytics policy. Legal permissions and constraints involving electronic data collection, aggregation, and analysis will be discussed. Critical analysis exercises will be provided involving privacy concerns and ethical issues that arise with cyber. Differential Tuition: \$126.

**IS 3833. Cyber Operations. (3-0) 3 Credit Hours.**

Prerequisite: IS 3523 with a grade of "C-" or better. This course investigates cyber operations, defining terms and discussing modern defensive and offensive cyber security strategies. Enterprise-level network protection will be addressed in the context of the cyber security operations center (CSOC), to include capabilities and technologies as well as organization and policies. Offensive cyber operations will be discussed in the context of red teaming and aggressor operations. Recent/current events will be examined as case studies. Differential Tuition: \$126. Course Fee: ISCS \$75.

**IS 4023. Applied Big Data with Machine Learning. (3-0) 3 Credit Hours.**

Prerequisite: IS 2053. 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 (ML) models that learn from data, and to scale those models up to big data problems. ML concepts covered include neural networks, support vector machines, and random forests. This course emphasizes a focus on the three major steps in the data analysis pipeline: 1) Data collection methods and techniques, 2) Data storing and feature engineering methods, and 3) Data modeling (supervised and unsupervised methods). The language of choice for this course is Python, along with the use of libraries such as Pandas, NumPy, Sklearn, Matplotlib, BeautifulSoup, and Selenium. RDBMS and SQL concepts are covered as aspects of data storing. Differential Tuition: \$126. Course Fee: ISCS \$75.

**IS 4043. Natural Language Processing. (3-0) 3 Credit Hours.**

Prerequisite: IS 2053. Natural Language Processing (NLP) employs computational tools to process, understand, and communicate using human (natural) language. NLP is a multi-disciplinary subject applicable to computation social science, humanities, biomedical informatics, business, cybersecurity, and a wide range of other fields. In this class, students will (1) gain hands-on experience implementing traditional NLP applications, including, but not limited to, text classification, part-of-speech tagging, parsing, coreference resolution, and machine translation, and (2) practice applying NLP techniques to real-world problems. Differential Tuition: \$126.

**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, and system models. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126. Course Fee: ISCS \$75; DL01 \$75.

**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. This course is structured around the concepts and skills covered in the Project Management Institute's (PMI) PMI-ACP certification exam. Differential Tuition: \$126.

**IS 4143. Wide Area Networks. (3-0) 3 Credit Hours.**

Prerequisite: IS 3413 with a grade of "C-" or better or consent of instructor. This course explores telecommunication technologies associated with wide area networks. Technologies such as frame relay, MPLS, SD-WAN and VPN tunneling will be studied. The role of common carriers, leased lines and associated security and quality of service issues will also be discussed. Differential Tuition: \$126.

**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. Differential Tuition: \$126. Course Fee: ISCS \$75.

**IS 4213. Data Center Infrastructure Planning. (3-0) 3 Credit Hours.**

Prerequisite: IS 3413 with a grade of "C-" or better or consent of instructor. The purpose of this class will be to explore the electrical power, air conditioning, and fire suppressant requirements of a data center. Electrical grids, standby generators, and uninterruptible 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. Differential Tuition: \$126.

**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 wireless technologies along with new data storage and retrieval techniques will be included. New hardware will also be included. Differential Tuition: \$126. Course fees: DL01 \$75; ISCS \$75.

**IS 4233. Cloud Computing. (3-0) 3 Credit Hours.**

The course provides an introduction to cloud computing and cloud security. Architectural principles, methodologies, and best practices are discussed. The course covers the foundational principles required to securely operate in the cloud, including cloud security architecture, guiding security design principles, design patterns and workflows, industry standards, and applied technologies. Real-world case studies and exercises are included to emphasize the topics covered. Differential Tuition: \$126. Course fees: BISP \$20; BTSI \$15; LRB1 \$21; DL01 \$75.

**IS 4443. Cyber Analytics I. (3-0) 3 Credit Hours.**

Prerequisites: IS 4023 or equivalent, and IS 3523. This integrative course will build upon students' cybersecurity and data analytics knowledge. Students will be given an opportunity to gain valuable experience with industry standard tools, platforms, and business processes for collecting, curating, sharing, and analyzing cyber data to proactively hunt for, reactively respond to, and investigate cyber threats. Analysis of low-level data from a wide variety of devices and sensors onto cyber threat frameworks for sense making in triaging and event reconstruction will be presented. Students will have an opportunity to gain extensive hands-on experience with proprietary and open-source cyber analytics tools. Differential Tuition: \$126.

**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." Same as IS 6463. Credit cannot be earned for both IS 6463 and IS 4463.) Differential Tuition: \$126. Course Fees: DL01 \$75, ISCS \$75.

**IS 4473. Cyber Security Policy, Compliance, and Risk Assessment. (3-0) 3 Credit Hours.**

This course will examine how policies, compliance, and risk assessments affect information assurance and cyber security practices. This course will align security with business strategy through the identification and development of administrative, physical, and technical policies to mitigate risk exposure, minimize liability, and maintain regulatory compliance for global organizations, government entities, and key industry sectors such as healthcare and finance. Cyber security frameworks, implementation issues, and current case studies will be included along with hands-on policy writing. (Same as IS 6473. Credit cannot be earned for both IS 6473 and IS 4473.) Differential Tuition: \$126. Course Fee: DL01 \$75.

**IS 4483. Digital Forensic Analysis I. (3-0) 3 Credit Hours.**

Prerequisites: Students may not enroll without 60 credit hours completed and without nine (9) hours of upper-division IS and/or CS coursework. An introductory course in digital forensic analysis. This course examines the fundamental data structures, software tools, and forensic analysis techniques commonly used to locate and recover trace evidence of crimes involving computers. This course focuses on file system forensic analysis of computer hosts and associated media. The tools of collecting, examining, and evaluating data in an effort to establish intent, culpability, motive, means, methods, and loss resulting from such crimes will be examined. (Same as IS 6483. Credit cannot be earned for both IS 4483 and IS 6483.) Generally offered: Fall. Course Fees: BISP \$20; BTSI \$15.41; LRB1 \$15.41; DL01 \$75. Differential Tuition: \$126.

**IS 4503. Cyber Analytics II. (3-0) 3 Credit Hours.**

Prerequisite: IS 4443. This capstone course integrates cybersecurity and data analytics knowledge. Students focus on the human aspect of cyber analytics, both behavioral analytics involving users and threat actors, as well as the humans to which findings need to be presented and communicated from a risk, intelligence, and business perspectives. Students will be given an opportunity to learn how to apply cyber analytics concepts holistically across multiple contexts. Additionally, students will explore advanced topics, such as the role of artificial intelligence in increasingly autonomous cyber systems for intrusion detection, prevention, investigation, attribution, and other current and potential uses. Differential Tuition: \$126.

**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. System architectures will be discussed. Current events will also be part of the class. (Formerly titled "Cyber and Physical Systems.") Same as IS 6513. Credit cannot be earned for both IS 6513 and IS 4513.) Differential Tuition: \$126. Course Fee: ISCS \$75.

**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. Differential Tuition: \$126. Course Fees: DL01 \$75, ISCS \$75.

**IS 4533. Malware Analysis. (3-0) 3 Credit Hours.**

Prerequisite: IS 3033 with a grade 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. Differential Tuition: \$126. Course Fee: ISCS \$75.

**IS 4543. Cyber Attack and Defend I. (3-0) 3 Credit Hours.**

Prerequisites: IS 3413 or the instructor's consent; students may not enroll without 60 credit hours completed and without nine (9) hours of upper-division IS and/or CS coursework. 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. Differential Tuition: \$126. Course Fees: ISCS \$75; DL01 \$75.

**IS 4553. Cyber Attack and Defend II. (3-0) 3 Credit Hours.**

Prerequisite: IS 4543. This course will build on the cyber themes and skillsets learned in prior classes to conduct threat hunts to detect advanced persistent threats. Students will learn the necessary skills to detect networking, operating system, and application-level exploitation. Students will utilize advanced community penetration testing tools to emulate advanced persistent threats. Students will leverage community security monitoring and log management tools to conduct threat hunting. Differential Tuition: \$126.

**IS 4563. Mobile Forensics. (3-0) 3 Credit Hours.**

Prerequisite: IS 4483. This course is a project-driven, hands-on study of mobile devices from a forensics perspective. Students will implement various techniques to collect and analyze information from mobile devices used in forensic investigations. Students will learn fundamental mobile device concepts, techniques, and tools needed to acquire and analyze common mobile devices in a forensically sound manner. Differential Tuition: \$126.

**IS 4893. Cyber Security Capstone. (3-0) 3 Credit Hours.**

Prerequisites: IS 3513 with a grade of "C-" or better and 18 hours of upper level IS courses, excluding IS 3003. This course should be taken during the final semester. This course builds upon the material in prior cyber security classes with an examination of the cybersecurity tactics, techniques, and procedures involved in executing cyber security in various business settings. Students are required to integrate their functional knowledge and understanding of the global cyber threat environment with advanced cybersecurity techniques, and determine effective ways to reduce risk, detect intrusions, and resolve complex breaches so that organizations can operate in high threat environments. Strong problem solving skills, creative analytical procedures, and effective communication in current cybersecurity scenarios are emphasized. Differential Tuition: \$126.

**IS 4911. Independent Study. (0-0) 1 Credit Hour.**

Prerequisites: Approval in writing from the instructor, the Department Chair, and the Dean of the Carlos Alvarez College of Business. 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. Differential Tuition: \$42.

**IS 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: A 3.0 Carlos Alvarez College of Business grade point average, and approval in writing from the instructor, the Department Chair, and the Dean of the College. 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. Differential Tuition: \$126.

**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 Carlos Alvarez 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. Differential Tuition: \$126.

**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 Carlos Alvarez 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. Differential Tuition: \$126.

**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. Differential Tuition: \$126. Course Fee: DL01 \$75.

# Interdisciplinary Studies (IDS)

## Interdisciplinary Studies (IDS) Courses

### 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 \$20.54; STSH \$30.81.

### 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 \$20.54; STSH \$30.81; DL01 \$75.

### 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. (Same as IDS 3234. Credit cannot be earned for both IDS 2403 and IDS 3234.) Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

### 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 \$20.54; STSH \$30.81; DL01 \$75.

### 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: DL01 \$75; LRH1 \$20.54; STSH \$30.81.

### 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 \$20.54; STSH \$30.81; DL01 \$75.

### 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: ISCU \$120; LRH1 \$20.54; STSH \$30.81; DL01 \$75.

### 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 \$35; LRH1 \$20.54; STSH \$10.27; DL01 \$25.

### 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. (Same as IDS 3211. 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 \$20.54; STSH \$10.27; DL01 \$25.

### 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. (Same as IDS 2413. Credit cannot be earned for IDS 2413, IDS 3213, and IDS 3211.) Generally offered: Fall, Spring, Summer. Course Fees: DL01 \$100; LRH1 \$20.54; STSH \$41.08.



**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. (Same as IDS 2403 and IDS 3201. Credit cannot be earned for IDS 2403 (formerly IDS 3203), IDS 3201, and IDS 3234.) Generally offered: Fall, Spring, Summer. Course Fees: DL01 \$100; LRH1 \$20.54; STSH \$41.08.

**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: DL01 \$75; LRH1 \$20.54; STSH \$30.81.

**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 \$30.81.

**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 \$20.54; STSH \$30.81.

## 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; DL01 \$75.

**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; DL01 \$75.

**IDE 2263. Color Theory and Behavior. (3-0) 3 Credit Hours.**

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; DL01 \$75.

**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; DL01 \$75.

**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; DL01 \$75.

**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; DL01 \$75. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**IDE 3236. Interior Design Studio I. (0-14) 6 Credit Hours.**

Prerequisites: IDE 2143, IDE 2423, and ARC 2166. Integration of design processes in meeting human needs relative to the built environment, along with conceptual, functional, spatial, and contextual layers of thought; developing critical thinking, research, and analytical skills to employ creative, innovative, and informed problem-solving techniques in the design of interior spaces; developing an understanding of specific industry trends in space planning, articulation, materials, and product selections. Course Fees: SAP1 \$25; STSA \$30. Differential Tuition: \$330.

**IDE 3246. Interior Design Studio II. (0-14) 6 Credit Hours.**

Prerequisites: IDE 3123 and IDE 3236. Integration of design processes in meeting human needs relative to the built environment, exploring functional spatial and contextual layers of thought; specific focus on augmenting understanding of the structural systems that are necessary for built spaces and how those spaces impact the interior volume and its articulation. Generally offered: Spring. Course Fees: SAP1 \$25; STSA \$30. Differential Tuition: \$330.

**IDE 4213. Design and Fabrication Workshop. (0-6) 3 Credit Hours.**

Focuses on essential elements of furniture or product design and fabrication, emphasizing relations to human environments, architectural space, human factors, and the use of materials, processes, and methods. May include digital design technologies and processes. Course Fees: SAP1 \$25; STSA \$15. Differential Tuition: \$165.

**IDE 4233. Computer Projects in Design. (2-2) 3 Credit Hours.**

Prerequisite: ARC 2166 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 and allied theories play in architectural and interior design. (Same as ARC 4233. Credit cannot be earned for both ARC 4233 and IDE 4233.) Course Fees: SAP1 \$25; STSA \$15; DL01 \$75. Differential Tuition: \$165.



**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. Comprehensive design of interior environments focusing on systems integration and articulation of building assemblies. Includes complex programming, life safety issues, thermal control, lighting, electrical, acoustics, water and waste management systems, and technical documentation. (Formerly titled "Interior Design Systems Studio.") Generally offered: Fall. Course Fees: SAP1 \$25; STSA \$30. Differential Tuition: \$330.

**IDE 4333. Practicum/Internship. (0-0) 3 Credit Hours.**

Prerequisite: IDE 3236 or consent of instructor; majoring in Interior Design. Offers students 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. Differential Tuition: \$165.

**IDE 4513. Practice and Ethics. (3-0) 3 Credit Hours.**

Prerequisite: 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; DL01 \$75. Differential Tuition: \$165.

**IDE 4816. International Studies Studio. (0-14) 6 Credit Hours.**

Prerequisite: IDE 3246 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. Differential Tuition: \$330.

**IDE 4823. International Studies Theory Seminar. (3-0) 3 Credit Hours.**

Prerequisites: IDE 3246 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. Differential Tuition: \$165.

**IDE 4833. International Studies Drawing Seminar. (0-8) 3 Credit Hours.**

Prerequisites: IDE 3246 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. Differential Tuition: \$165.

**IDE 4843. International Studies History Seminar. (3-0) 3 Credit Hours.**

Prerequisites: IDE 3246 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. Differential Tuition: \$165.

**IDE 4911. Independent Study. (0-0) 1 Credit Hour.**

Prerequisite: Permission in writing (form available) from the instructor, the student's advisor, the School Director, 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. Differential Tuition: \$55.

**IDE 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisite: Permission in writing (form available) from the instructor, the student's advisor, the School Director, 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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$330.

## 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 \$10.27; MM01 \$7; STLF \$24.64; DL01 \$100.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$24.64; DL01 \$100.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 \$10.27; MM01 \$7; STLF \$18.48.

**ITL 3023. Advanced Language Skills. (3-0) 3 Credit Hours.**

Prerequisite: ITL 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 Italian language, along with enhanced comprehension skills in listening and reading. May be repeated for credit when topics vary. Course Fee: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**ITL 4213. Topics in Italian Culture. (3-0) 3 Credit Hours.**

Prerequisite: ITL 2023, the equivalent, or consent of instructor. Selected topics in Italian culture, such as such as literature, fine arts, politics (current E.U.-Italian relationships), or cinema. May be repeated for credit when topics vary. Course Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

## 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 \$10.27; MM01 \$7; STLF \$24.64.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$24.64.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

## 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: LRHC \$10; PAG1 \$20; STHC \$6.

**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: LRHC \$10; STHC \$18.

**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: LRHC \$10; PAG1 \$20; STHC \$6.

**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: LRHC \$10; PAG1 \$20; STHC \$6.

**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: DL01 \$75; LRHC \$10; PAG1 \$20; STHC \$18.

**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: DL01 \$25; LRHC \$10; STHC \$6.

**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; LRHC \$10; STHC \$6; DL01 \$25.

**KIN 2303. Foundations of Kinesiology. (3-0) 3 Credit Hours. (TCN = 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: LRHC \$10; STHC \$18; DL01 \$75.

**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: LRHC \$10; PARC \$40; STHC \$6.

**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. (Formerly KIN 2423. Credit cannot be earned for both KIN 2423 and KIN 2441.) Course Fees: DL01 \$25; LRHC \$10; STHC \$6.

**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: LRHC \$10; PAG1 \$20; STHC \$6.

**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: LRHC \$10; PAG1 \$20; STHC \$6.

**KIN 3013. Theory of Coaching. (3-0) 3 Credit Hours.**

This course will discuss the principles and philosophies of coaching sports in a modern environment. Domains will remain consistent with that of the National Standards for Sport Coaches. Areas of focus: The study of professional and development of personal coaching philosophies, understanding and implementing mission-vision-values, mindset, awareness, and effective feedback. Student coaches will also gain certification through the NFHS coaching diploma. This course qualifies as part of the Athletic Coaching Certificate. Generally offered: Fall and Spring. Course Fees: LRHC \$10; STHC \$18.

**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: LRHC \$10; PAG1 \$20; STHC \$6.

**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: LRHC \$10; PAG1 \$20; STHC \$6.

**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: LRHC \$10; PAG1 \$20; STHC \$6.

**KIN 3053. Fitness Instruction. (2-2) 3 Credit Hours.**

The course will discuss how to design, choreograph and lead a group fitness class, training on modalities (including: walking/jogging, hiking, strength and resistance, HIIT and interval, boot camp, yoga, cycle and more), essentials of exercise and physiology, foundations of nutrition and healthy eating, how to adapt for special populations like pregnant and senior participants, and business skills and professional responsibilities. The course will follow the curriculum for the Athletics and Fitness Association of America (AFFA) Group Fitness Instructor Certification. Students will become eligible to take the certification exam upon passing the course. This course satisfies the requirement for KIN3051 and KIN2111. Course fees: LRHC \$10; KSM1 \$10; PAG1 \$20; STHC \$18.

**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: LRHC \$10; PAG1 \$20; STHC \$6.

**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: LRHC \$10; PAG1 \$20; STHC \$6.

**KIN 3073. Strength and Conditioning. (2-2) 3 Credit Hours.**

Prerequisite: KIN 3313 or BIO 2053. Introduces theories and principles of strength and conditioning to improve fitness, health, and overall wellness. The course will discuss the knowledge and skills needed to perform and instruct safe and effective strength and conditioning workouts. This course satisfies the requirement for KIN 3071. Course fees: LRHC \$10; PAG1 \$20; STHC \$18.

**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: LRHC \$10; STFK \$57; STHC \$18; DL01 \$75.

**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: DL01 \$75; KSM1 \$10; LRHC \$10; STHC \$18.

**KIN 3223. Coaching Leadership. (3-0) 3 Credit Hours.**

This course will discuss an athletic principled leadership model and decision-making and problem-solving techniques used by modern coaches. The student will learn to lead the team as a head coach through discussion of leadership scenarios. KIN 3013 is highly recommended as a prerequisite. This course qualifies as part of the Athletic Coaching Certificate. Course fees: LRHC \$10; KSM1 \$10; PAG1 \$20; STHC \$18.

**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; LRHC \$10; STHC \$18; DL01 \$75.

**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; LRHC \$10; STHC \$18; DL01 \$75.

**KIN 3321. Biomechanics Laboratory. (1-1) 1 Credit Hour.**

Prerequisite: KIN 3313 or BIO 2053. Corequisite: 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; LRHC \$10; STHC \$6; DL01 \$25.

**KIN 3323. Biomechanics. (3-0) 3 Credit Hours.**

Prerequisite: KIN 3313 or BIO 2053. 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: LRHC \$10; STHC \$18; DL01 \$75.

**KIN 3413. Instruction of Sports Activities and Games. (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: LRHC \$10; PAG1 \$20; STHC \$18.

**KIN 3431. Exercise Physiology Laboratory. (1-1) 1 Credit Hour.**

Prerequisite: KIN 3313 or equivalent (BIO 2053 and BIO 2063). Corequisite: 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; LRHC \$10; STHC \$6; DL01 \$25.

**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: LRHC \$10; STHC \$18; DL01 \$75.

**KIN 3441. Health Related Fitness Assessment Laboratory. (0-2) 1 Credit Hour.**

Prerequisite: KIN 3433. Corequisite: 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; LRHC \$10; STHC \$6; DL01 \$25.

**KIN 3443. Health Related Fitness Assessment. (3-0) 3 Credit Hours.**

Prerequisite: KIN 3433. Corequisite: KIN 3441. 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: LRHC \$10; STHC \$18; DL01 \$75.

**KIN 3453. Exercise Prescription. (3-1) 3 Credit Hours.**

Prerequisites: KIN 3071 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; LRHC \$10; STHC \$18; DL01 \$75.

**KIN 3463. Musculoskeletal Anatomy. (3-1) 3 Credit Hours.**

Prerequisite: KIN 3313 or BIO 2053. 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; LRHC \$10; STHC \$18; DL01 \$75.

**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: LRHC \$10; STHC \$18; DL01 \$75.

**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; LRHC \$10; STHC \$18.

**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: DL01 \$75; LRHC \$10; PAG1 \$20; STHC \$18.



**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: DL01 \$75; LRHC \$10; STHC \$18.

**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; LRHC \$10; STHC \$18; DL01 \$75.

**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. Same as CI 4313. Credit cannot be earned for both CI 4313 and KIN 4203. Generally offered: Fall, Spring. Course Fees: DL01 \$75; LRHC \$10; STFK \$57; STHC \$18.

**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; LRHC \$10; STHC \$18.

**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; LRHC \$10; STHC \$18; DL01 \$75.

**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; LRHC \$10; STHC \$18; DL01 \$75.

**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; LRHC \$10; STHC \$18.

**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. (Same as CI 4273. Credit cannot be earned for both KIN 4303 and CI 4273.) Generally offered: Fall, Spring. Course Fees: DL01 \$75; LRHC \$10; STFK \$57; STHC \$18.

**KIN 4343. Fundamental Motor Skills. (3-0) 3 Credit Hours.**

Prerequisite: KIN 3413. Provide instruction in facilitating motor skills, which provide the basis for all movement capacities and their application in specialized activities geared to the early childhood through adolescent stages. Generally offered: Fall, Spring. Course Fees: LRHC \$10; PAG1 \$20; STHC \$18.

**KIN 4401. Motor Learning Laboratory. (1-1) 1 Credit Hour.**

Prerequisite: KIN 3313 or BIO 2053. Corequisite: KIN 4403. Laboratory exercises demonstrating the principles of motor learning and motor control. This lab will complement KIN 4403. Course Fees: KSM1 \$10; LRHC \$10; STHC \$6.

**KIN 4403. Motor Learning. (3-0) 3 Credit Hours.**

Prerequisite: KIN 3313 or BIO 2053. 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: DL01 \$75; LRHC \$10; STHC \$18.

**KIN 4413. Coaching Athletics. (2-2) 3 Credit Hours.**

This course studies the physical application, planning, and practical implementation of different coaching methodologies in modern sporting environments. It will provide students with the necessary craft and skillsets to teach, assess, and self-evaluate their athletes through LTAD (Long Term Athletic Development) and relative age effect developmental models. This class will be approximately 30% theory and 70% practical format. KIN 3013 is highly recommended as a pre-req. This course qualifies as part of the Athletic Coaching Certificate. Generally offered: Fall, Spring. Course Fees: LRHC \$10; PAG1 \$20; STHC \$18.

**KIN 4423. Developmental/Adapted Physical Activity. (3-1) 3 Credit Hours.**

Prerequisites: KIN 3103 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: DL01 \$75; LRHC \$10; PAG1 \$20; STHC \$18.

**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: STHC \$6.

**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: STHC \$12.



**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: STHC \$18.

**KIN 4931. Clinical Applications of Athletic Injuries. (1-2) 1 Credit Hour.**

Prerequisites: Consent of instructor and admission to the Athletic Training concentration. This course provides practical applications in prevention, diagnosis, treatment, and rehabilitation of athletic injuries, and includes a minimum of 150 hours of supervised field and clinical experiences in athletic training. May be repeated for credit for a maximum of 6 semester credit hours. Course Fees: LRHC \$10; STFK \$57; STHC \$6.

**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. (Same as KIN 4936. Credit cannot be earned for both KIN 4936 and KIN 4933.) Generally offered: Fall, Spring, Summer. Course Fees: LRHC \$10; STHC \$18.

**KIN 4936. Internship in Kinesiology. (0-0) 6 Credit Hours.**

Prerequisites: Student is required to have a cumulative grade point average of 2.5 or greater and must be within 13 semester credit hours of graduation (including the 6 hours of the internship), and attend the mandatory new candidate meeting the semester prior to completing the internship to register for this course. Supervised internship with appropriate agency in the field of kinesiology. Student must complete this course during the last semester before graduation. No more than 6 semester credit hours of internship will apply to a bachelor's degree. (Same as HTH 4936 and KIN 4933. Credit cannot be earned for both KIN 4936, KIN 4933, and HTH 4936.) Generally offered: Fall, Spring, Summer. Course Fees: STFK \$57; STHC \$36.

**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: LRHC \$10; STHC \$18.

**KIN 4953. Special Studies. (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 topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Course Fees: KSM1 \$10; LRHC \$10; STHC \$18; DL01 \$75.

**KIN 4983. Applied Exercise Science. (3-1) 3 Credit Hours.**

Prerequisites: KIN 3323, KIN 3433, KIN 3443, KIN 3453, and KIN 4253; for students pursuing training and certification in exercise science. Capstone course and seminar for preparation for graduate studies. Generally offered: Fall, Spring, Summer. Course Fees: KSM1 \$10; LRHC \$10; STHC \$18.

**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: STHC \$18.

## 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 \$10.27; MM01 \$7; STLF \$24.64.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$24.64.

**KOR 2013. Intermediate Korean I. (3-1) 3 Credit Hours.**

Prerequisite: KOR 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 Korean language. Further study of Korean culture. Course Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**KOR 2023. Intermediate Korean II. (3-1) 3 Credit Hours.**

Prerequisite: KOR 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 Korean language. Further study of Korean culture. Course Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**KOR 3023. Advanced Language Skills. (3-0) 3 Credit Hours.**

Prerequisite: KOR 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 Korean language, along with enhanced comprehension skills in listening and reading. May be repeated for credit when topics vary. Course Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**KOR 4213. Topics in Korean Culture. (3-0) 3 Credit Hours.**

Prerequisite: KOR 2023, the equivalent, or consent of instructor. Selected topics in Korean culture, such as history, democracy, current social issues, pop culture, or contemporary cultural developments. May be repeated for credit when topics vary. Course Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

## 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 \$10.27; STLF \$24.64.

**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. Course Fees: LRLF \$10.27; STLF \$24.64.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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 Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**LAT 3213. Advanced Latin. (3-0) 3 Credit Hours.**  
Prerequisite: LAT 2113 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

## 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

## 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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**LNG 3873. Forensic Linguistics. (3-0) 3 Credit Hours.**  
This course examines how the analysis and manipulation of language is used to commit, solve, and prevent crimes. Students will explore case studies from law enforcement and counter-terrorism dealing with coerced confessions, the determination of authorship, and the manipulation of suspects under interrogation, among others. Course Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

## Literacy Education (LTED)

### Literacy Education (LTED) Courses

**LTED 3513. Children's Multicultural Literature in Early Childhood – Grade 6. (3-0) 3 Credit Hours.**

Designed to familiarize students with quality children's books from diverse cultures that can be used for aesthetic, personal, social, and critical purposes in EC-6 classrooms. A focus on the features of different genres and formats of children's literature and strategies for using these genres and formats to support both literacy instruction and instruction across the curriculum. (Formerly RDG 3513. Credit cannot be earned for both LTED 3513 and RDG 3513.) Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$20; STSH \$30; DL01 \$75.

**LTED 3523. Reading Development, Processes, and Instruction 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 "B-" or better for it to serve as a prerequisite for CI 4626 or CI 4633 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 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**LTED 3533. Reading and Writing Across the Disciplines-Grades 4-8. (3-0) 3 Credit Hours.**

Prerequisites: LTED 3523; must be admitted to the Teacher Certification Program; for Grades 4-8 LA/RDG/SS certification: completion of CI 4543, CI 4553, and EDP 4203 in semester prior to clinical teaching. 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 CI 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 \$20.54; STF1 \$75; STSH \$30.81.

**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 CI 4626 or CI 4633 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 \$20.54; STSH \$30.81.

**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 \$20.54; STSH \$30.81.

**LTED 3673. Reading Development, Processes, and Instruction Grades 7-12. (3-0) 3 Credit Hours.**

Prerequisite: Admission to teacher certification program. 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 "B-" or better for it to serve as a prerequisite for CI 4646 or CI 4643 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 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**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 "B-" or better for it to serve as a prerequisite for CI 4646 or CI 4643 Clinical Teaching: Grades 7-12. Generally offered: Fall, Spring. Course Fees: LRH1 \$20; STSH \$30.

**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 CI 4646 or CI 4643 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 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**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 Grades 4-8, this course must be completed with a grade of "B-" or better for it to serve as a prerequisite for CI 4626 or CI 4633 Clinical Teaching: Grades 4-8. Restricted course; advisor code required for registration. Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**LTED 3813. Writing Development & Instruction in Early Childhood–Grade 6. (3-0) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, LTED 3513, and LTED 3823; for EC6 Core Subjects: this course is concurrent with Clinical Year Semester 2 courses; for EC6 ESL certification: take this course concurrent with Clinical Year Semester 1. Examines the developmental nature of writing and contextual factors that impact development. Focuses on theories of writing development, including the nature of written language, the writing process, and writing to learn (within various disciplines) for monolingual and multilingual children. Course Fees: LRH1 \$20; STSH \$30; DL01 \$75.

**LTED 3823. Literacy Assessment and Instruction Early Childhood–Grade 6. (2-2) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, ECE 3143, ECE 3313, and ECE 3603; may not be taken concurrently with CI 4303, ECE 4143, and LTED 4833. Corequisites: CI 4353, CI 4403, and ECE 4203. Designed to support students in using assessment, planning, and research-based instruction in their work with individuals and small groups of children. Students will focus on differentiating and drawing on children's cultural, linguistic, and experiential backgrounds in their literacy teaching. Students will mentor (i.e., tutor) an elementary-age child across the semester as part of the course. For EC–6 Core Subjects, this course must be completed with a grade of "B-" or better for it to serve as a prerequisite for CI 4612, CI 4613, and/or CI 4616. 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 \$20; STF1 \$75; STSH \$30; DL01 \$75.

**LTED 4503. Literacy Methods in Early Childhood–Grade 6. (3-0) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, and completion of LTED 3513, LTED 3823, and CI 4611 Clinical Teaching Field experience required. Corequisites: Clinical Year Semester 2 Courses. This course involves the study of instructional methods and materials that support diverse children's meaningful literacy learning in small group and whole-class contexts from EC–Grade 6. Students will mentor (i.e., tutor) elementary-age children across the semester as part of the course. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STSH \$30.81; STF1 \$75.

**LTED 4833. Organizing Literacy Programs for Differentiated Instruction–EC–6. (2-2) 3 Credit Hours.**

Prerequisites: Admission to the Teacher Certification Program, completion of CI 4353, CI 4403, ECE 4203, and LTED 3823; field experience required; may not be taken concurrently with CI 4353, CI 4403, ECE 4203, and LTED 3823; RESTRICTED COURSE: advisor code required for registration. Corequisite: CI 4303. Course is designed to familiarize students with a variety of literacy (reading and writing) programs (and how those programs support the science of teaching reading and writing) and to implement differentiated reading and writing pedagogy to support literacy development in various contexts (individual, small group, and whole-class). Students will learn to administer, interpret, and use assessments to gain a holistic view of students' strengths and areas of need to inform instruction. This course must be completed with a grade of "B-" or better for it to serve as a prerequisite for CI 4621 Clinical Teaching: Early Childhood-Grade 6. Restricted course; advisor code required for registration. Field experience required. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**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. Credit cannot be earned for both RDG 4913 and LTED 4913.) Course Fee: STSH \$30.81.

## Management (MGT)

### Management (MGT) Courses

**MGT 3003. Business Communication and Professional Development. (3-0) 3 Credit Hours.**

Prerequisites: Take one of the following: COM 1043, COM 1053, COM 1063, or WRC 1023; student must be classified as a business studies student, declared major in the Carlos Alvarez College of Business, or have approval from the Department Chair and Dean of the College. This course examines basic professional and communication skills, with practical applications for the business environment. The course emphasizes two areas: 1) applying analytical thinking and related skills to the formulation of communications in support of business decision processes; and 2) developing professional competencies, with special emphasis on career readiness. Written assignments are required. (Formerly MGT 3043. Credit cannot be earned for both MGT 3003 and MGT 3043.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$126. Course Fee: DL01 \$75.

**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 innovation, changing technological, social, and political/legal environments and the internationalization of the economy. Some introduction to entrepreneurship, strategic analysis, planning, and decision making. Attention is given to the ethical dimensions of management and social responsibility. Generally offered: Fall, Spring, Summer. Differential Tuition: \$126. Course Fee: DL01 \$75.

**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. Differential Tuition: \$126. Course Fee: DL01 \$75.

**MGT 3123. Organizational Communication. (3-0) 3 Credit Hours.**

Prerequisites: MGT 3013 with a grade of "C-" or better, and a declared major in the Carlos Alvarez 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. Differential Tuition: \$126. Course fee: DL01 \$75.



**MGT 3253. Interpersonal Communication. (3-0) 3 Credit Hours.**

Prerequisites: A declared major in the Carlos Alvarez 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. Differential Tuition: \$126. Course Fee: DL01 \$75.

**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 Carlos Alvarez 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. Differential Tuition: \$126. Course Fee: DL01 \$75.

**MGT 4073. International Management. (3-0) 3 Credit Hours.**

Prerequisites: MGT 3013 with a grade of "C-" or better and a declared major in the Carlos Alvarez 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. Differential Tuition: \$126. Course fee: DL01 \$75.

**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 Carlos Alvarez 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. Differential Tuition: \$126.

**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. Differential Tuition: \$126.

**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 Carlos Alvarez 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. Differential Tuition: \$126. Course Fee: DL01 \$75.

**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. Differential Tuition: \$126. Course Fee: DL01 \$75.

**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. Differential Tuition: \$126.

**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 Carlos Alvarez College of Business or approval from the 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. Differential Tuition: \$126. Course fee: DL01 \$75.

**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 Carlos Alvarez College of Business or approval from the 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. Differential Tuition: \$126. Course Fee: DL01 \$75.

**MGT 4643. Human Resources Law. (3-0) 3 Credit Hours.**

Prerequisites: MGT 3003 with a grade of "C-" or better and a declared major in the Carlos Alvarez 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. Differential Tuition: \$126.



**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 Carlos Alvarez College of Business or approval from the 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. Differential Tuition: \$126.

**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 Carlos Alvarez College of Business or approval from the 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. Differential Tuition: \$126.

**MGT 4893. Management Strategy. (3-0) 3 Credit Hours.**

Prerequisites: Successful completion of all courses in the Business Common Body of Knowledge (CBK), except MS 3053, which may be taken concurrently; and Carlos Alvarez College of Business declared major in semester of graduation. 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. Differential Tuition: \$126. Course Fee: DL01 \$75.

**MGT 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: A 3.0 Carlos Alvarez College of Business grade point average, MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the Carlos Alvarez 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. Differential Tuition: \$126.

**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 Carlos Alvarez 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. Differential Tuition: \$126. Course Fee: DL01 \$75.

**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 Carlos Alvarez 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. Differential Tuition: \$126.

**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 Carlos Alvarez College of Business or approval from the 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. Differential Tuition: \$126. Course Fee: DL01 \$75.

**MGT 4951. Special Studies in Management. (1-0) 1 Credit Hour.**

Prerequisites: A declared major in the Carlos Alvarez College of Business or approval from the 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. Differential Tuition: \$42.

**MGT 4953. Special Studies in Management. (3-0) 3 Credit Hours.**

Prerequisites: A declared major in the Carlos Alvarez 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. Differential Tuition: \$126.

## Management Science (MS)

### Management Science (MS) Courses

**MS 1023. Business Statistics with Computer Applications I. (3-0) 3 Credit Hours. (TCCN = BUSI 2305)**

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 \$15.41; DL01 \$75; LRB1 \$15.41.

**MS 3003. Visualization in Business Analytics. (3-0) 3 Credit Hours.**

This course covers the foundations of data visualization, exploratory data analysis, and data communication via interactive and non-interactive graphical analyses. Students will be able to articulate design principles and best practices for creating meaningful visual displays of data, prepare different types of data for visualization, develop and interpret a wide range of charts and graphs using software (e.g., Tableau), and effectively communicate data-driven business insights using visualizations. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126. Course Fee: DL01 \$75.

**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, and MS 1023 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. Differential Tuition: \$126. Course Fee: DL01 \$75.

**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. Differential Tuition: \$126.

**MS 3073. Business Intelligence and Analytics. (3-0) 3 Credit Hours.**

Prerequisite: a grade of "C-" or better in MS 3043 or the equivalent. This course is designed to provide an introduction to business analytics and offer context to introductory statistical models. It also describes and interprets the basic concepts of business analytics, including descriptive, predictive, and prescriptive analytics. Comparison and contrasts among different business analytics techniques are examined. Students use computer software to conduct their analyses. Generally offered: Fall. Differential Tuition: \$126. Course fee: DL01 \$75.

**MS 3083. Data Management for Business Analytics. (3-0) 3 Credit Hours.**

This course introduces essential programming concepts using R, SAS, and SQL to efficiently manipulate and clean data for statistical analyses. Topics include reading raw data, restructuring and combining data files, formatting and recoding variables, and displaying data using tables, charts, and plots. Differential Tuition: \$126. Course fee: DL01 \$75.

**MS 3313. Multivariate Statistics for Business Analytics. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "C-" in MS 3073 and MS 3083, or approval of instructor. This course emphasizes application of statistics in problem-solving situations within business disciplines. Useful techniques include analysis of variance, multiple regression, logistic regression, discriminant analysis, factor analysis, principal component analysis, cluster analysis, multidimensional scaling, and conjoint analysis. Students use computer software (e.g., SPSS, SAS, and/or R) to conduct their analyses. (Formerly titled "Business Applications of Statistics.") Generally offered: Spring. Differential Tuition: \$126.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

**MS 3413. Purchasing and Supply Management. (3-0) 3 Credit Hours.**

This course explores the strategic and tactical issues in procurement and supply management. Topics include, but are not limited to, purchasing process, procurement cycle, determination of requirements, supplier qualifications and relationships, appraisals, source selection, contract negotiation and management, commodity planning, buying practices, policies, ethics, and international purchasing. Cost, price, and value analysis in industrial purchasing cycle are also discussed. The course emphasizes a balance of academic and practitioner's perspectives. Differential Tuition: \$126.

**MS 4203. Business Analytics Applications. (3-0) 3 Credit Hours.**

Prerequisite: A grade of "C-" or better in MS 4373 or the equivalent, or approval of instructor. This course presents an overview of business analytics applications, including its purpose, benefits and challenges, important analytic processes, and methodologies to perform business analytics in a data driven environment. Students will be introduced to a wide spectrum of relevant business analytics applications encountered in different functional areas. Scope of learning incorporates but not limited to hands-on experience, case-based study, and guest lectures from data analytics experts and managers. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

**MS 4323. Analytics with Spreadsheet and Simulation 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. Differential Tuition: \$126.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126.

**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.) Differential Tuition: \$126.

**MS 4373. Data Mining for Business Analytics. (3-0) 3 Credit Hours.**

Prerequisites: A grade of "C-" or better in MS 3073 and MS 3083, or approval of instructor. This course provides an introduction to machine learning algorithms with applications. Topics include supervised and unsupervised learning methods, resampling methods, model selection, generalized additive model, classification and regression tree methods, k-nearest neighbors, bagging and random forest, support vector machines, social network analysis, and text mining. (Formerly titled "Knowledge Discovery for Business Analytics.") Differential Tuition: \$126. Course fee: DL01 \$75.

**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, time series, and monitoring (automatic procedures such as tracking signals). (Formerly titled Applied Forecasting in Operations.) Differential Tuition: \$126.

**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. Differential Tuition: \$126.

**MS 4913. Independent Study in Management Science. (0-0) 3 Credit Hours.**

Prerequisites: For business majors: A 3.0 Carlos Alvarez College of Business grade point average, permission in writing from the instructor, the Department Chair, and the Dean of the Carlos Alvarez 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. Differential Tuition: \$126.

**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 Carlos Alvarez 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. Differential Tuition: \$126.

**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. Differential Tuition: \$126.

# Management of Technology (MOT)

## 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.") Differential Tuition: \$126. Course fee: DL01 \$75.

### **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. Differential Tuition: \$126.

### **MOT 4153. Project Management Certification. (3-0) 3 Credit Hours.**

Prerequisite: Consent of instructor. This course is a comprehensive coverage of project management 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's (PMI) Project Management Body of Knowledge and Agile Practice Guide, emphasizing domains, tasks, and enablers associated with the core project management processes as described in PMI's published exam content outline. Students will also complete diagnostics exam instruments and practice exams. Differential Tuition: \$126.

### **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. Differential Tuition: \$126.

### **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. Differential Tuition: \$126.

### **MOT 4911. Independent Study. (0-0) 1 Credit Hour.**

Prerequisite: Approval in writing from the instructor, the Department Chair, and the Dean of the Carlos Alvarez College of Business. 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. Differential Tuition: \$42.

### **MOT 4912. Independent Study. (0-0) 2 Credit Hours.**

Prerequisite: Approval in writing from the instructor, the Department Chair, and the Dean of the Carlos Alvarez College of Business. 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. Differential Tuition: \$84.

### **MOT 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisite: Approval in writing from the instructor, the Department Chair, and the Dean of the Carlos Alvarez College of Business. 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. Differential Tuition: \$126.

### **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. Differential Tuition: \$42. Course fee: DL01 \$25.

### **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. Differential Tuition: \$84.

### **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. Differential Tuition: \$126.

# Marketing (MKT)

## Marketing (MKT) Courses

### **MKT 3003. Happiness, Well Being, and Modern Consumerism. (3-0) 3 Credit Hours.**

Got Happiness? This course provides an introduction to modern consumerism and how it relates to our happiness, well-being and aspects of human experience. Students will gain an understanding of the complex world of consumerism, how companies offer "happiness", and where marketing practice meets the science of well-being. Differential Tuition: \$126. Course fee: DL01 \$75.

### **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. Differential Tuition: \$126. Course Fee: DL01 \$75.



**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. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

**MKT 4033. Social Media Marketing. (3-0) 3 Credit Hours.**

The invention of social media (web 2.0) has radically changed the way we interact with the world. Students will gain knowledge and social media marketing tactical skills through coursework and hands-on practice. Students will also learn proven approaches to understanding your target market, audience engagement, influencer marketing, content curation, strategic planning, campaign execution, paid advertising, data analysis, ROI, and much more. Differential Tuition: \$126. Course Fee: DL01 \$75.

**MKT 4053. New Product Development. (3-0) 3 Credit Hours.**

Prerequisite: MKT 3013 with a grade of "C-" or better. 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. Differential Tuition: \$126.

**MKT 4073. International Marketing. (3-0) 3 Credit Hours.**

Prerequisites: 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. Differential Tuition: \$126. Course fee: DL01 \$75.

**MKT 4093. Consumer Behavior. (3-0) 3 Credit Hours.**

Prerequisites: 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. Differential Tuition: \$126. Course fee: DL01 \$75.

**MKT 4143. Sports Marketing. (3-0) 3 Credit Hours.**

Prerequisites: 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. Differential Tuition: \$126. Course fee: DL01 \$75.

**MKT 4153. Ethics in Marketing. (3-0) 3 Credit Hours.**

Prerequisites: 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. Differential Tuition: \$126.

**MKT 4233. Integrated Marketing Communications. (3-0) 3 Credit Hours.**

Prerequisites: 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. Differential Tuition: \$126.

**MKT 4253. Digital Marketing. (3-0) 3 Credit Hours.**

Digital marketing is one of the most effective ways to build customer confidence and promote your organization's products and services. This course begins with an overview of the digital marketing landscape where students will learn digital marketing foundations and the importance of keywords. Understand the theoretical while learning the proven methodologies and tactical approaches to website structure, organic search, email marketing, and search engine paid advertising campaigns. Differential Tuition: \$126. Course fee: DL01 \$75.

**MKT 4353. Service Operations Management. (3-0) 3 Credit Hours.**

Prerequisites: 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.) Differential Tuition: \$126.



**MKT 4763. Real Estate Marketing. (3-0) 3 Credit Hours.**

Prerequisites: 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.) Differential Tuition: \$126.

**MKT 4893. Marketing Capstone. (3-0) 3 Credit Hours.**

Prerequisites: MKT 3013 with a grade of "C-" or better, senior standing, and 12 additional semester credit hours in marketing. 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. Differential Tuition: \$126. Course fee: DL01 \$75.

**MKT 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: A 3.0 Carlos Alvarez 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 Carlos Alvarez 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. Differential Tuition: \$126.

**MKT 4933. Internship in Marketing. (0-0) 3 Credit Hours.**

Prerequisites: MGT 3003 and MKT 3013 with a grade of "C-" or better, and approval in writing from the instructor, the Department Chair, and the Dean of the Carlos Alvarez 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. Differential Tuition: \$126.

**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. Same as MKT 4143, credit cannot be earned for both MKT 4143 and MKT 4953. Generally offered: Spring, Summer. Differential Tuition: \$126. Course Fee: DL01 \$75.

## Mathematics (MAT) Courses

**MAT 1023. College Algebra with Applications. (3-0) 3 Credit Hours.**

Prerequisite: Satisfactory performance on a placement examination; students pursuing majors in the College of Science or in Engineering should not enroll in this course; students majoring in areas that require MAT 1214 Calculus I are encouraged to take MAT 1073 instead of MAT 1023. 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. (Formerly MTC 1023 and MAT 1063. Credit can be earned for only one of the following: MAT 1023, MTC 1023, MAT 1063, or MAT 1073 (formerly MTC 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.) May apply toward the Core Curriculum requirement in Mathematics. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRS1 \$46.20; STSI \$21.60; DL01 \$75.

**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 \$45; STSI \$21; DL01 \$75.

**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. Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRS1 \$46.20; STSI \$21.60; DL01 \$75.

## Mathematics (MAT)

**NOTE: All prerequisites for Mathematics (MAT) courses must be completed with a grade of "C-" or better.**

**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 1023 (formerly MAT 1063 and MTC 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 \$46.20; STSI \$21.60; DL01 \$75.

**MAT 1093. Precalculus. (3-0) 3 Credit Hours. (TCCN = MATH 2312)**

Prerequisite: MAT 1023, MAT 1053, or MAT 1073, 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: DL01 \$75; LRC1 \$12; LRS1 \$46.20; STSI \$21.60.

**MAT 1133. Calculus for Business. (3-0) 3 Credit Hours. (TCCN = MATH 1325)**

Prerequisite: MAT 1023, MAT 1053, or MAT 1073 (with a grade of "C-" or better), 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. (Formerly MAT 1033. Credit cannot be earned for both MAT 1033 and MAT 1133.) Generally offered: Fall, Spring, Summer. Course Fees: DL01 \$75; LRC1 \$12; LRS1 \$46.20; STSI \$21.60.

**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. (Formerly MAT 1143. Credit cannot be earned for both MAT 1153 and MAT 1143.) Generally offered: Fall, Spring, Summer. Course Fees: LRS1 \$46.20; MFSM \$30; STSI \$21.60; DL01 \$75.

**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 \$46.20; MFSM \$30; STSI \$21.60; DL01 \$75.

**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. Same as MAT 1214. 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: DL01 \$75; LRC1 \$12; LRS1 \$46.20; STSI \$21.60.

**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. (Same as MAT 1214 and MAT 1193. Credit can be earned for only one of the following: MAT 1214 or MAT 1193 (formerly MAT 1194).) May apply toward the Core Curriculum requirement in Mathematics. Generally offered: Fall, Spring, Summer. Course Fees: DL01 \$100; LRC1 \$16; LRS1 \$61.60; STSI \$28.80.

**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 \$61.60; STSI \$28.80; DL01 \$100.

**MAT 1313. Algebra and Number Systems. (3-0) 3 Credit Hours.**

Corequisite: MAT 1214. Basic logic and proofs. Properties of integer numbers, mathematical induction, the fundamental theorem of arithmetic, the infinitude of primes, modular arithmetic, rational and irrational numbers, complex numbers, functions, polynomials, and the binomial theorem. Generally offered: Fall, Spring. Course Fees: LRS1 \$46.20; STSI \$21.60.

**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.) Course Fees: LRS1 \$46.20; STSI \$21.60; DL01 \$75.

**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 \$61.60; STSI \$28.80; DL01 \$100.

**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 \$46.20; STSI \$21.60; DL01 \$75.

**MAT 2313. Combinatorics and Probability. (3-0) 3 Credit Hours.**

Prerequisite: MAT 1224. Introduction to combinatorics and graph theory; discrete and conditional probability; random variables and pdfs. Generally offered in Fall. Course Fees: LRS1 \$46.2; STSI \$21.6; DL01 \$72.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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.) Differential Tuition: \$150.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150.

**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. Differential Tuition: \$150.

**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. Differential Tuition: \$150.

**MAT 3313. Logic and Computability. (3-0) 3 Credit Hours.**

Prerequisites: MAT 1214 and MAT 3013. Recursive functions, Turing computability, insolvability, decidability, completeness and compactness of first order logic. Generally offered: Spring. Differential Tuition: \$150.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150.

**MAT 3633. Numerical Analysis. (3-0) 3 Credit Hours.**

Prerequisites: MAT 2233, MAT 3213, and one of the following: CS 1063, CS 1714, or CS 2073. Solution of linear and nonlinear equations, curve-fitting, and eigenvalue problems. Generally offered: Fall, Spring. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150.

**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. Differential Tuition: \$150.

**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. (Same as UTE 3023. Credit cannot be earned for both UTE 3023 and MAT 4123.) Generally offered: Spring, Summer. Differential Tuition: \$150.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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 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. Differential Tuition: \$150. Course fee: DL01 \$75.

**MAT 4333. Probability and Computing. (3-0) 3 Credit Hours.**

Prerequisites: CS 3333 or MAT 2313. May include moments of random variables: randomized mincut algorithm, Chebyshev and Markov inequalities, sampling estimator for mean. Basic Concentration Inequalities: Chernoff and Hoeffding inequalities; parameter estimation and set balancing. Discrete probabilistic structures: Bucket sort algorithm, Poisson approximation, Lovasz local Lemma, independent set search. The Gaussian: Moment Generating Functions, Central Limit Theorem, JL dimensionality reduction lemma. Markov Chains and Random Walks: Stationary Distributions, and randomized 3-SAT algorithm, Entropy Function: Information and Compression. Same as CS 4333. Credit cannot be earned for both CS 4333 and MAT 4333. Generally offered in Springs. Differential Tuition: \$150.

**MAT 4343. Introduction to Optimization. (3-0) 3 Credit Hours.**

Prerequisites: (MAT 2214 and MAT 2233) or EGR 3323 or (MAT 1224 and CS 3333). May include Discrete, Continuous, Linear, and non-Linear optimization. Optimality conditions, Lagrange multipliers, duality theory. Applications of linear programming in computer science and discrete optimization. Gradient descent and Newton iteration (i.e., RST and second order methods), trust region methods, and conjugate gradient. Applications of RST and second order methods to engineering. Same as CS 4303. Credit cannot be earned for both CS 4303 and MAT 4343. Generally offered in Fall. Differential Tuition: \$150.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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.) Differential Tuition: \$150.

**MAT 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. Differential Tuition: \$150.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150.



# Mechanical Engineering (ME)

**NOTE: All prerequisites for Mechanical Engineering (ME) courses must be completed with a grade of "C-" or better.**

## 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 \$25; 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 \$25; STSE \$30; DL01 \$75.

**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, technical report writing, and data acquisition. Generally offered: Fall, Spring, Summer. Differential Tuition: \$165. Course Fees: L001 \$30; DL01 \$75.

**ME 3183. Python: Big Data in Engineering and Environmental Systems. (3-0) 3 Credit Hours.**

Prerequisite: ME 2173. Introduction to Python as a programming language and to several modules of Python specific to scientific computing. Understanding physical principles of engineering systems from data using Python platform. The course introduces scientific data analysis including statistical analysis of stochastic processes and numerical methods for big data. Differential Tuition: \$165.

**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.) Differential Tuition: \$55. Course Fee: L001 \$30.

**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 or ME 3243 and ME 3241. Prior completion of ME 3244 can be substituted for ME 3243 and ME 3241.) Generally offered: Fall, Spring. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

**ME 3273. Operations Research. (3-0) 3 Credit Hours.**

Prerequisite: ME 2173. Introduction to fundamental optimization models and solution methods, including linear programs, the simplex method, duality theory, sensitivity analysis, integer programs, and network flows. Focus on formulating and solving practical operations research problems and the use of optimization software. Differential Tuition: \$165.

**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. (Same as CME 2503. Credit cannot be earned for both ME 3293 and CME 2503.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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.) Differential Tuition: \$55.

**ME 3543. Dynamic Systems and Control. (3-0) 3 Credit Hours.**

Prerequisites: EGR 2513 and EGR 3323, and concurrent enrollment in or completion of ME 3113. 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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**ME 3813. Mechanics of Solids. (3-0) 3 Credit Hours.**

Prerequisites: EGR 2103 and MAT 1224. Internal forces and deformations in solids, stress, strain and their relations, torsion, stresses and deflections in beams, and elastic behavior of columns. (Same as CE 3103. Credit cannot be earned for both ME 3813 and CE 3103.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$165. Course fee: DL01 \$75.



**ME 3823. Machine Element Design. (3-0) 3 Credit Hours.**

Prerequisites: ME 1403, ME 3241, 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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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). Differential Tuition: \$165.

**ME 4183. Compressible Flow and Propulsion Systems. (3-0) 3 Credit Hours.**

Prerequisites: ME 3293 and ME 3663. Analysis of one-dimensional steady compressible flow, isentropic flow, compressible boundary layers, transition from subsonic to supersonic flow, Fanno and Rayleigh flow, supersonic nozzle design, normal and oblique shock waves, and expansion fans. (Formerly EGR 4183. Credit cannot be earned for both ME 4183 and EGR 4183.) Differential Tuition: \$165.

**ME 4243. Intermediate Materials Engineering. (3-0) 3 Credit Hours.**

Prerequisites: ME 3241, 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. Differential Tuition: \$165.

**ME 4273. Systems Modeling and Analysis. (3-0) 3 Credit Hours.**

Prerequisites: ME 2173 and ME 3113. Systems analysis approach to formulating and solving engineering problems. Topics include mathematical modeling, discrete event simulation, and decision analysis. Focus on applying systems modeling methods on practical industrial problems and the use of simulation software. Differential Tuition: \$165.

**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, and thermodynamic relations. Generally offered: Fall, Spring. Differential Tuition: \$165.

**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.) Differential Tuition: \$110.

**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. Differential Tuition: \$165.

**ME 4323. Thermal Systems Design. (3-0) 3 Credit Hours.**

Prerequisite: ME 4313. Application of thermodynamics, fluid mechanics, heat transfer, and computer methods to the design of thermal energy systems. Differential Tuition: \$165.

**ME 4343. Heating, Air Conditioning, and Refrigeration Design. (3-0) 3 Credit Hours.**

Prerequisite: ME 4293. Moist air properties, human comfort, solar radiation, heating/cooling loads, design selection, operation of air conditioning equipment, and duct design. Differential Tuition: \$165.

**ME 4373. Separation Processes. (3-0) 3 Credit Hours.**

Prerequisite: ME 4293. Rate- and equilibrium-controlled separation, mass transfer, phase equilibrium, distillation, and extraction. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course Fees: L001 \$30; DL01 \$75.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**ME 4593. Alternative Energy Sources. (3-0) 3 Credit Hours.**

Prerequisites: ME 2173, ME 3113, ME 3663, and ME 4293. Nuclear, geothermal, solar, biomass, wind, and hydrogen energy sources. Resources, production, utilization, economics, sustainability, and environmental considerations. (Formerly ME 3593. Credit cannot be earned for both ME 3593 and ME 4593.) Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**ME 4643. Pressure Vessel and Piping Design. (3-0) 3 Credit Hours.**

Prerequisites: ME 3663 and ME 3813. ASME Section VIII Boiler and Pressure Vessel code, inspection, maintenance, repair, and modification of pressure vessels. Piping design and construction. Differential Tuition: \$165.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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. Differential Tuition: \$165.

**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. Differential Tuition: \$55.

**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.) Differential Tuition: \$110. Course fee: DL01 \$50.

**ME 4813. Senior Design II. (2-3) 3 Credit Hours.**

Prerequisites: ME 3541, 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. Differential Tuition: \$165. Course Fees: L001 \$30; DL01 \$75.

**ME 4911. Independent Study. (0-0) 1 Credit Hour.**

Prerequisite: Permission in writing (form available) from the instructor, 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. Differential Tuition: \$55.

**ME 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisite: Permission in writing (form available) from the instructor, 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. Differential Tuition: \$165.

**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. Differential Tuition: \$165. Course fee: DL01 \$75.

**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.) Differential Tuition: \$165.

## 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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

## 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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**MHU 2023. Introduction to Pharmaceutical Technology. (3-0) 3 Credit Hours.**

This course will provide students with instruction on the knowledge and skills relevant to pharmacy technicians. The course will prepare students to take either the Pharmacy Technician Certification Board Exam or the Exam for the Certification of Pharmacy Technicians. Course Fees: LRLF \$10.27; STLF \$18.48.

**MHU 3013. Inequality, Intersectionality, and Healthcare. (3-0) 3 Credit Hours.**

This course will introduce students to the ways in which healthcare can form the axis at which types of inequality intersect, with an emphasis on the ways in which healthcare practitioners and institutions can both perpetuate and ameliorate inequality. Students will gain a deeper theoretical understanding of the ways in which healthcare both reflects and shapes societal norms, especially surrounding race, gender, sexual orientation, disability, citizenship, and poverty. The course may be a survey or it may have a more particular focus, e.g. mental health, hospitalization, the immune system. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. May be repeated for credit when topics vary. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**MHU 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: MHU 2013, Medical Humanities major, and 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 Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$6.16.

**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. Course Fees: LRLF \$10.27; STLF \$12.32.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**MHU 4953. Special Topics in Medical 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 topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree. Course Fees: LRLF \$10.27; STLF \$18.48.

## 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 \$20.54; STSH \$30.81; DL01 \$75.

**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: DL01 \$75; LRC1 \$12; LRH1 \$20.54; STSH \$30.81.

**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 \$20.54; STSH \$30.81; DL01 \$75.

**MAS 2043. Selena: A Mexican American Identity and Experience. (3-0) 3 Credit Hours.**

This course examines how the life and career of Selena Quintanilla-la Reina de Tejano music-embodies the historical trajectory of the Mexican American identity and experience in Texas. As exemplified by a line from the biopic about her life, "We gotta prove to the Mexicans how Mexican we are, and we gotta prove to the Americans how American we are. We gotta be more Mexican than the Mexicans and more American than the Americans, both at the same time." Selena's rise to fame will be contextualized by addressing how systemic oppression and intersectionality impact the Mexican American experience. In particular, the course will emphasize how race/ethnicity, gender, class, sexuality, and citizenship function as axes of marginalization, as well as how sociohistorical, economic, and political factors converge to shape a Mexican American group identity in Texas, the Southwest and the United States. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**MAS 2053. Mexican American Music Performance Practicum: MAS Corazón de San Antonio. (3-0) 3 Credit Hours.**

An ensemble course open to all students by audition. May be repeated for credit. This course is for advanced performers with previous experience. It will focus on refining on-stage performance technique and style. It also examines the historical development of Mexican American/Chicanx Music, its cross-cultural interactions and influences, and its role as an integral part of Mexican American society, culture, education, and economy. Repertoire will vary from semester-to-semester, ranging from: Mariachi, Conjunto, Tejano, Chicano/a/x Hip Hop, and modern fusion, and will incorporate each ensemble's respective instrumentation. Course fees: LRH1 \$20.54; STSH \$30.81.

**MAS 2063. Latinx Songwriting. (3-0) 3 Credit Hours.**

Designed to give an overview of Latinx songwriting styles and techniques. Course suitable for anyone, whether interested in songwriting as an art form or contemplating a career in music. Topics include the importance of song in the Latinx music industry and culture, the relationship of words to music, study of song forms including but not limited to those found in Latin Pop, American Pop, and Mexican Corridos, Boleros, and Rancheras. The course will include an introduction to song demo production using home studio digital audio workstations (DAW), Garage Band, and Logic Pro, and touch upon music publishing and other song-related fields. Course fees: LRH1 \$20.54; STSH \$30.81.

**MAS 2073. Chicanx Music Methods and Pedagogy. (3-0) 3 Credit Hours.**

An introduction course focused on creating an aligned, culturally relevant, Mexican American music performance curriculum. Course offers methods and pedagogical tools for teaching Mexican American music, ensemble types, and students. The course introduces best practices, instrumentation of traditional Mexican American ensembles, and how to navigate the public-school system to implement culturally inclusive music programs in schools and communities. Course fees: LRH1 \$20.54; STSH \$30.81.

**MAS 3003. Chicana/o/x Music. (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. (Formerly titled Musical Mestizaje.) Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**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 \$20.54; STSH \$30.81.

**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 \$20.54; STSH \$30.81; DL01 \$75.

**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 \$20.54; STSH \$30.81.

**MAS 3063. 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. (Formerly MAS 3023. Same as BBL 3063. Credit can be earned for only one of the following: BBL 3063, MAS 3023, or MAS 3063.) Course Fees: LRH1 \$20.54; STSH \$30.81.

**MAS 3113. Latinx Music Production and Industry. (3-0) 3 Credit Hours.**

An introduction to audio-visual techniques and notational skills that are required to appropriately disseminate the unique characteristics of Latinx music, rhythms, chord progressions, stylistic features, artistic and cultural expressions, and commercial ventures. An introduction to audio-visual production software (Sibelius, Finale, Pro Tools, Logic Pro, Final Cut and Adobe Premier Pro) and audio-visual launching platforms. Course fees: LRH1 \$20.54; STSH \$30.81.



**MAS 3123. 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. (Same as BBL 3123. Credit cannot be earned for both BBL 3123 and MAS 3123.) Generally offered: Fall, Spring, Summer. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**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 \$20.54; STSH \$30.81.

**MAS 3423. Mexican American Foodways: Recipes for Justice, Health, and Liberation. (3-0) 3 Credit Hours.**

This course introduces students to the study of Mexican American foodways and sovereignty movements through theoretical concepts and methodologies in Chicana/x/o Studies, Latina/x/o Studies, Indigenous Studies, and food studies. This course also centers community knowledge and efforts of community-based spaces to restore cultural knowledge and promote food justice. Readings, lectures, films, group discussions, active class participation, and community events are central features of this course. Course fees: LRH1 \$20.54; STSH \$30.81.

**MAS 4013. Sí se puede! Latino Leadership, Activism and Organizing. (3-0) 3 Credit Hours.**

Prerequisite: MAS 2013. This course will examine theories of social justice, social change, leadership styles, and basic components required to organizing at the local level for creating meaningful social change. By studying the history and legacy of activism among Mexican American and other Latina/o/x communities, it provides students with the basic tools to become more effective leaders at the grassroots level. Course may include community engagement component as part of the coursework. Course Fees: LRH1 \$20.54; STSH \$30.81.

**MAS 4023. Black and Brown Youth Resistance. (3-0) 3 Credit Hours.**

This course examines theories of youth resistance, and specifically the ways in which youth of color have and continue to resist, whether through organizing social justice movements, self-expression, and/or cultural production. Drawing from Critical Youth Studies, Ethnic Studies, and Women of Color feminisms, this course explores how youth as a whole, and youth of color specifically are socially constructed in the U.S. and the impact of these constructions of race, gender, sexuality, and age structurally on youth in terms of the policies that are created that impact their everyday lives. This course also explores the contributions youth of color have made and continue to make in society, not only through organizing but also through their everyday forms of resistance such as their behaviors, languaging, forms of self-expression, engagement with popular culture, and resulting cultural production. Same as AAS 4023, credit cannot be earned for both AAS 4023 and MAS 4023. Course fees: LRH1 \$20.54; STSH \$30.81.

**MAS 4033. Women of Color Feminisms. (3-0) 3 Credit Hours.**

This course centers feminist epistemological contributions of Women of Color. As a result of their positionalities, Women of Color have developed their own organizations, printing presses, research approaches, and critical theories, and have contributed to social change. This course examines critical theories that make up Black, Chicana/x and Latina/x, Indigenous, and Asian/Asian American feminisms. Women of Color feminisms have advanced change through their scholarship, activism, community organizing, participation in mutual aid, cultural production, and critique of and resistance to coloniality in all of its forms. This course uses an intersectional approach to examining the contributions of Women of Color feminisms across disciplines to include, but not limited to, education, public health, popular culture, community organizing, policy, and cultural production. Same as AAS 4033 and WGSS 4033, credit cannot be earned for both AAS 4033, WGSS 4033, and MAS 4033. Course fees: LRH1 \$20.54; STSH \$30.81.

**MAS 4043. Chicana/x Feminisms. (3-0) 3 Credit Hours.**

This course centers the development of Chicana/x Feminisms before, during, and after the Chicana/o/x Civil Rights Movement. Developed by Chicana/x mothers, activists, youth, community workers, academics, and artists. Chicana/x Feminisms reflects the embodied knowledges and resulting theories of Chicanas/x who live at the intersections of race, class, gender, and sexuality that provide them with the unique insight and strategies to advocate for social transformation within their communities and beyond. The course begins with an examination of the foundational scholars within Chicana/x Feminist Thought, surveys the various contributions Chicana/x feminisms has made to education, research, labor, cultural production, spirituality, and other areas, and extends to the present to explore the shifts and advancements within Chicana/x Feminist Thought since the Movement. Same as WGSS 4043, credit cannot be earned for both WGSS 4043 and MAS 4043. Course fees: LRH1 \$20.54; STSH \$30.81.

**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 \$20.54; STSH \$30.81; DL01 \$75.

**MAS 4143. Latinas/xs in Music and Society. (3-0) 3 Credit Hours.**

A survey of the contributions of women/femmes to Latino music, culture and society. This course is designed to introduce students to analyzing music within Latinx communities through a sociocultural perspective that identifies not only the contributions women/femmes have made to different genres of music, but also the impact of these musicians and their music to Latinx communities and social justice movements throughout history, for example those of antigua Tenochtitlan to Tonya La Negra, Xiomara Alfaro, Lydia Mendoza, Selena, and their successors. Students will also explore and learn to appreciate different stylistic and technical aspects of Latinx music created and performed by Latinas/xs. Students will explore concepts of diaspora, mestizaje, colonialism, and migration through their study of Latinas/xs in music. Too often relegated to the background, despite their talent and skills, this course examines the contributions of Latinas/femmes in Music. Course fees: LRH1 \$20.54; STSH \$30.81.



**MAS 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Program Coordinator or 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 Fees: LRH1 \$20.54; STSH \$30.81.

**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 \$10.27.

**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 \$20.54.

**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 \$30.81.

**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: DL01 \$75; LRH1 \$20.54; STSH \$30.81.

**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 \$30.81.

## Military Science (MSC)

### Military Science (MSC) Courses

**MSC 1012. Introduction to the Army and Critical Thinking. (2-0) 2 Credit Hours.**

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 will 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"). Course Fee: LRRT \$24.50.

**MSC 1122. Adaptive Leadership and Professional Competence. (2-0) 2 Credit Hours.**

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 will 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 2012. Leadership and Decision Making. (2-0) 2 Credit Hours.**

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 will 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. Course Fee: LRRT \$24.50.

**MSC 2022. Army Doctrine and Team Development. (2-0) 2 Credit Hours.**

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 will 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 3013. Training Management and the Warfighting Functions. (3-0) 3 Credit Hours.**

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 will participate in weekly 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 titled "Leading Small Organizations I"). Generally offered: Fall. Course Fee: LRRT \$37.50.

**MSC 3023. Applied Leadership in Small Unit Operations. (3-0) 3 Credit Hours.**

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 will participate in weekly 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 titled "Leading Small Organizations II"). Generally offered: Spring.

**MSC 3033. American Military History. (3-0) 3 Credit Hours.**

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. Course Fees: LRRT \$37.50; DL01 \$75.

**MSC 4013. The Army Officer. (3-0) 3 Credit Hours.**

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 will participate in weekly 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 titled "Adaptive Leadership"). Generally offered: Fall. Course Fee: LRRT \$37.50.

**MSC 4023. Company Grade Leadership. (3-0) 3 Credit Hours.**

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 will participate in weekly 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 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. Course Fee: LRRT \$37.50.

## Molecular Microbiology and Immunology (MMI)

**NOTE: All prerequisites for Molecular Microbiology and Immunology (MMI) courses must be completed with a grade of "C-" or better.**

### Molecular Microbiology and Immunology (MMI) Courses

**MMI 1053. Introductory Microbiology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1233 or BIO 1203 (Formerly listed as BIO 1404 in previous catalogs); concurrent enrollment in MMI 1061 is recommended for students intending to complete both courses. A general study of microorganisms, their characteristics, isolation, growth, and importance in nature, particularly with regards to public health and human disease. (Formerly BIO 1053. Credit cannot be earned for both BIO 1053 and MMI 1053. MMI 1053 cannot substitute for MMI 3713.) Generally offered: Fall, Spring. Course Fees: LRS1 \$46.20; STSI \$21.60.

**MMI 1061. Introductory Microbiology Laboratory. (0-3) 1 Credit Hour.**

Prerequisites: BIO 1233 or BIO 1203 (Formerly listed as BIO 1404 in previous catalogs), and completion of or concurrent enrollment in MMI 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 of the Microbiology Teaching Labs, for additional instructions prior to the class start date. (Formerly BIO 1061. Credit cannot be earned for both BIO 1061 and MMI 1061. MMI 1061 cannot substitute for MMI 3722.) Generally offered: Fall, Spring, Summer. Course Fees: IUB2 \$10; L001 \$30; LRS1 \$15.40; STSI \$7.20.

**MMI 3013. Introduction to Clinical Medicine and Pathology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1233 or BIO 2313. Introduction to concepts of human disease, diagnosis, and underlying pathology. (Formerly BIO 3013. Credit cannot be earned for both BIO 3013 and MMI 3013.) Generally offered: Fall. Differential Tuition: \$150. Course fee: IUB2 \$10.

**MMI 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. (Formerly BIO 3323. Credit cannot be earned for both BIO 3323 and MMI 3323.) Generally offered: Spring. Differential Tuition: \$150. Course fee: IUB2 \$10.

**MMI 3713. Microbiology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1223 (Formerly listed as BIO 1414 in previous catalogs); concurrent enrollment in MMI 3722 is recommended for students intending to complete both courses. A comprehensive study of microorganisms, including their composition, morphology, growth, metabolism, classification, ecology, and significance in disease. MMI 1053 cannot substitute for MMI 3713. (Formerly BIO 3713. Credit cannot be earned for both MMI 3713, BIO 3713, and ES 3103.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$150. Course fee: IUB2 \$10.

**MMI 3722. Microbiology Laboratory. (0-4) 2 Credit Hours.**

Prerequisites: BIO 1223 (Formerly known as BIO 1414) and completion of or concurrent enrollment in MMI 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 of the Microbiology Teaching Labs for additional instructions prior to the class start date. (Formerly BIO 3722. Credit cannot be earned for both BIO 3722 and MMI 3722. BIO 1061 cannot substitute for MMI 3722.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$100. Course Fees: IUB2 \$10; L001 \$30.

**MMI 3743. Bacteriology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 2313 and MMI 3713; prior completion of MMI 3722 is also 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. (Formerly BIO 3743. Credit cannot be earned for both BIO 3743 and MMI 3743.) Generally offered: Fall. Differential Tuition: \$150. Course fee: IUB2 \$10.

**MMI 4473. Advanced Clinical Medicine and Pathology. (3-0) 3 Credit Hours.**

Prerequisite: MMI 3013. Advanced concepts of human disease, diagnosis, and underlying pathology. (Formerly BIO 4473. Credit cannot be earned for both BIO 4473 and MMI 4473.) Generally offered: Spring. Differential Tuition \$150. Course fee: IUB2 \$10.

**MMI 4483. Medical Mycology. (3-0) 3 Credit Hours.**

Prerequisites: MMI 3713 and MMI 3722. Comprehensive study of causative agents, pathogenesis, and treatment of human fungal diseases. (Formerly BIO 4483. Credit cannot be earned for both BIO 4483 and MMI 4483.) Generally offered: Spring. Differential Tuition \$150. Course fee: IUB2 \$10.

**MMI 4723. Virology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 2313, prior completion of BIO 3513 is strongly recommended. Introduction to the molecular, genetic, and biological properties of viruses. Course covers the basic concepts of virus structure, replication, virus/host interactions, pathogenesis, and evolution. (Formerly BIO 4723. Credit cannot be earned for both BIO 4723 and MMI 4723.) Generally offered: Fall and Spring. Differential Tuition: \$150. Course fee: IUB2 \$10.

**MMI 4743. Immunology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 2313; concurrent enrollment in MMI 4752 is recommended for students intending to complete both courses. This course introduces students to the molecular, cellular, and genetic principles of innate and adaptive immunity. The course covers the development of B and T lymphocytes, and explains how these components of adaptive immunity function in the contexts of infection by pathogenic microbes, allergic reactions, autoimmunity, transplant rejection, cancer, and vaccination. (Formerly BIO 4743. Credit cannot be earned for both BIO 4743 and MMI 4743.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$150. Course fee: IUB2 \$10.

**MMI 4752. Immunology Laboratory. (0-4) 2 Credit Hours.**

Prerequisites: BIO 2313, BIO 2362 or BIO 2322, and completion of or concurrent enrollment in MMI 4743. Laboratory applications of principles presented in MMI 4743. (Formerly BIO 4752. Credit cannot be earned for both BIO 4752 and MMI 4752.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$100. Course Fees: IUB2 \$10; L001 \$30.

**MMI 4763. Parasitology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 2313; prior completion of MMI 3713 is strongly recommended. This course focuses 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. (Formerly BIO 4763. Credit cannot be earned for both BIO 4763 and MMI 4763.) Generally offered: Spring. Differential Tuition \$150. Course fee: IUB2 \$10.

**MMI 4773. Microbial Ecology and Metagenomics. (3-0) 3 Credit Hours.**

Prerequisites: BIO 2313 and MMI 1053 or MMI 3713. This course will provide an overview of microbial ecology principles and application of microbial ecological approaches to understand microbial structure and function across environments, including the soil, freshwater, and marine environments. The course will focus its content on prokaryotes and fungi. An emphasis in this course will be on learning foundational concepts in microbiome science and applying concepts to laboratory and computational techniques through hands-on experiments. (Same as BIO 4773, credit cannot be earned for both BIO 4773 and MMI 4773.) Generally offered: Fall, Spring. Differential Tuition: \$150. Course fee: IUB2 \$10.

**MMI 4783. Microbial Genomes and Virulence. (3-0) 3 Credit Hours.**

Prerequisite: BIO 2313; prior completion of MMI 3713 is recommended. This course is focused on microbial pathogens of medical importance. Insights into the genome make-up and virulence inventories of pathogens is essential for understanding their biology, epidemiology, human disease, and trajectories of pathogen evolution. Topics covered include the basic concepts of genome sequencing, pathogen-specific virulence traits, and the role of genetic exchange in genome evolution, speciation, fitness, and pathogenicity. (Formerly BIO 4783. Credit cannot be earned for both BIO 4783 and MMI 4783.) Generally offered: Spring. Differential Tuition \$150. Course fee: IUB2 \$10.

**MMI 4911. Independent Study. (0-0) 1 Credit Hour.**

Prerequisites: Permission in writing (form available in the MMI office) 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 will apply to a bachelor's degree regardless of discipline. Only 6 semester credit hours of BIO 3043, MMI 4911-3, MMI 4923, and MMI 4993, in any combination, can be taken as MMI 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. Differential Tuition: \$50. Course fee: IUB2 \$10.

**MMI 4912. Independent Study. (0-0) 2 Credit Hours.**

Prerequisites: Permission in writing (form available in the MMI office) 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 will apply to a bachelor's degree regardless of discipline. Only 6 semester credit hours of BIO 3043, MMI 4911-2, MMI 4923, and MMI 4993, in any combination, can be taken as MMI 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. Differential Tuition: \$100. Course fee: IUB2 \$10.



**MMI 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: Permission in writing (form available in the MMI office) 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 will apply to a bachelor's degree regardless of discipline. Only 6 semester credit hours of BIO 3043, MMI 4911-3, MMI 4923, and MMI 4993, in any combination, can be taken as MMI 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. Differential Tuition: \$150. Course fee: IUB2 \$10.

**MMI 4923. Laboratory Research. (0-6) 3 Credit Hours.**

Prerequisites: Permission in writing (form available in the MMI 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, MMI 4923, and MMI 4993, in any combination, can be taken as MMI 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. Differential Tuition: \$150. Course fees: L001 \$30; IUB2 \$10.

**MMI 4953. Special 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. Special Studies may be repeated for credit when the topics vary, but no more than 6 semester credit hours will apply to a bachelor's degree regardless of discipline. No more than 6 semester hours of MMI 2953, MMI 4951, or MMI 4953 can be applied to a B.S. degree in MMI. Generally offered: Fall, Spring, Summer. Differential Tuition: \$150. Course fee: IUB2 \$10.

**MMI 4993. Honors Research. (0-0) 3 Credit Hours.**

Enrollment limited to Microbiology and Immunology 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. This course requires supervised research and preparation of an Honors Thesis. May be repeated for credit with approval, but no more than 6 semester credit hours will apply to a bachelor's degree regardless of discipline. Only 6 semester credit hours of MMI 4911-3, MMI 4923, and MMI 4993, in any combination, can be taken as MMI 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. Differential Tuition: \$150. Course fee: IUB2 \$10.

## 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 is required for the B.A. degree in Multidisciplinary Studies. It 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. Course Fees: DL01 \$75; LRMS \$37.50.

**MDS 2023. Introduction to Multidisciplinary Studies. (3-0) 3 Credit Hours.**

Introduction to Multidisciplinary Studies as an academic program. This course is required for the B.S. Degree in Multidisciplinary Studies. This course integrates experiential learning opportunities with 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 scientific, engineering, technical, social, and civic problems. The course includes a capstone project in which students design and present the experiential learning project. Course Fees: LRMS \$37.50; DL01 \$75.

**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 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. Course Fee: LRMS \$37.50.

**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. Course Fee: LRMS \$37.50.

**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. Course Fee: DL01 \$75; LRMS \$37.50.

# 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.

Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

### **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. Course Fees: LRLF \$10.27; STLF \$18.48.

### **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. Course Fees: LRLF \$10.27; STLF \$18.48.

### **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. Course Fees: LRLF \$10.27; STLF \$18.48.

# Music (MUS)

## Music (MUS) Courses

### **MUS 1102. Aural Skills I. (2-1) 2 Credit Hours. (TCCN = MUSI 1116)**

Prerequisite: 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. Course Fees: LRLF \$10.27; STLF \$12.32.

### **MUS 1112. Basic Skills of Music I. (2-1) 2 Credit Hours. (TCCN = MUSI 1311)**

Prerequisite: 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. Course Fees: LRLF \$10.27; STLF \$12.32; DL01 \$50.

### **MUS 1122. Aural Skills II. (2-1) 2 Credit Hours. (TCCN = MUSI 1117)**

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. Course Fees: LRLF \$10.27; STLF \$12.32.

### **MUS 1132. Basic Skills of Music II. (2-1) 2 Credit Hours. (TCCN = MUSI 1312)**

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. Course Fees: LRLF \$10.27; STLF \$12.32; DL01 \$50.

### **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. Course Fees: LRLF \$10.27; STLF \$6.16.

### **MUS 1511. Secondary Private Instruction. (0-0) 1 Credit Hour.**

Prerequisite: 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. May be repeated for credit. (Formerly Music Performance-Secondary Instruction.) Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; M001 \$154; STLF \$6.16.

### **MUS 1512. Private Instruction. (0-0) 2 Credit Hours.**

Prerequisite: 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. (Formerly Music Performance-Private Instruction.) Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; M001 \$308; STLF \$12.32.

### **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. May not be attempted more than three times. Generally offered: Fall, Spring. Course Fees: IUM1 \$30; LRLF \$10.27; STLF \$6.16.

### **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. Course Fees: IUM1 \$30; LRLF \$10.27; STLF \$6.16.



**MUS 1542. Private Instruction. (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. (Formerly Music Performance-Private Instruction I.) Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; M001 \$308; STLF \$12.32.

**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 Fees: IUM1 \$60; LRLF \$10.27; STLF \$12.32.

**MUS 1621. Class Piano 2. (1-1) 1 Credit Hour. (TCCN = MUSI 1182)**

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. May not be attempted more than three times. Generally offered: Fall, Spring. Course Fees: IUM1 \$30; LRLF \$10.27; STLF \$6.16.

**MUS 2000. Music Convocation. (0-0) 0 Credit Hours.**

Prerequisite: Music major. Required attendance at a selected number of approved music concerts, recitals, lectures, and master classes as determined by the Department of Music. May be repeated for credit. Generally offered: Fall, Spring.

**MUS 2102. Aural Skills III. (2-1) 2 Credit Hours. (TCCN = MUSI 2116)**

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. Course Fees: LRLF \$10.27; STLF \$12.32.

**MUS 2112. Aural Skills IV. (2-1) 2 Credit Hours. (TCCN = MUSI 2117)**

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. Course Fees: LRLF \$10.27; STLF \$12.32.

**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. Course Fees: LRLF \$10.27; STLF \$12.32.

**MUS 2132. Introduction to Improvisation. (2-0) 2 Credit Hours.**

Prerequisites: Enrollment is limited to music majors and students pursuing the Minor in Jazz Studies. Classroom instruction for development of creative skills applied to melodic, rhythmic, and harmonic elaboration techniques adapted to the student's instrument. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; M001 \$308; STLF \$12.32.

**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 Fees: LRLF \$10.27; M001 \$154; STLF \$6.16.

**MUS 2152. Basic Skills of Music III. (2-1) 2 Credit Hours. (TCCN = MUSI 2311)**

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. Course Fees: LRLF \$10.27; STLF \$12.32; DL01 \$50.

**MUS 2162. Basic Skills of Music IV. (2-1) 2 Credit Hours. (TCCN = MUSI 2312)**

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. Course Fees: LRLF \$10.27; STLF \$12.32; DL01 \$50.

**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.) Course Fees: LRLF \$10.27; STLF \$12.32; DL01 \$50.

**MUS 2183. Jazz Skills. (3-0) 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**MUS 2243. World Music in Society. (3-0) 3 Credit Hours.**

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 \$10.27; MC01 \$75; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**MUS 2402. Conducting I. (2-2) 2 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. (Formerly MUS 2403. Credit cannot be earned for both MUS 2402 and MUS 2403.) Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; STLF \$12.32.

**MUS 2421. Class Piano 3. (1-1) 1 Credit Hour. (TCCN = MUSI 2181)**

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. May not be attempted more than three times. Generally offered: Fall, Spring. Course Fees: IUM1 \$30; LRLF \$10.27; STLF \$6.16.

**MUS 2501. Accompanying. (0-2) 1 Credit Hour.**

Prerequisite: 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. Course Fees: LRLF \$10.27; M001 \$154; STLF \$6.16.

**MUS 2521. Class Piano 4. (1-1) 1 Credit Hour. (TCCN = MUSI 2182)**

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. May not be attempted more than three times. Generally offered: Fall, Spring. Course Fees: IUM1 \$30; LRLF \$10.27; STLF \$6.16.

**MUS 2542. Private Instruction. (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. (Formerly Music Performance-Private Instruction II.) Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; M001 \$308; STLF \$12.32.

**MUS 2601. Diction Survey. (1-1) 1 Credit Hour.**

Prerequisite: 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. Course Fees: LRLF \$10.27; STLF \$6.16.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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 \$10.27; MC01 \$75; STLF \$18.48; DL01 \$75.

**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: DL01 \$75; LRC1 \$12; LRLF \$10.27; MC01 \$75; STLF \$18.48.

**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: DL01 \$75; LRC1 \$12; LRLF \$10.27; MC01 \$75; STLF \$18.48.

**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 \$10.27; MC01 \$75; STLF \$18.48; DL01 \$75.

**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: DL01 \$75; LRC1 \$12; LRLF \$10.27; MC01 \$75; STLF \$18.48.

**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 \$10.27; MC01 \$75; STLF \$18.48; DL01 \$75.

**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; LRLF \$10.27; MC01 \$75; STLF \$18.48.

**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 Fees: IUM1 \$90; LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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 Fees: DL01 \$75; IUM1 \$90; LRLF \$10.27; STLF \$18.48.

**MUS 3123. Introduction to Electronic and Computer Music. (3-0) 3 Credit Hours.**

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 Fees: IUM1 \$90; LRLF \$10.27; STLF \$18.48; DL01 \$75.

**MUS 3133. Analysis of Twentieth-Century Music. (3-0) 3 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, and one of the following: MUS 1552 or 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**MUS 3143. Orchestration. (3-0) 3 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, and either MUS 1552 or 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**MUS 3153. Conducting II. (3-1) 3 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, MUS 2402, and one of the following: MUS 1552 or 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. Same as MUS 3103. Credit cannot be earned for both MUS 3103, MUS 3153, and MUS 2413.) Generally offered: Spring. Course Fees: LRLF \$10.27; STLF \$18.48.

**MUS 3162. Composition III. (0-0) 2 Credit Hours.**

Prerequisites: MUS 2112, MUS 2141, MUS 2162, and one of the following: MUS 1552 or 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 Fees: LRLF \$10.27; M001 \$308; STLF \$12.32.

**MUS 3163. Audio Technology II. (3-0) 3 Credit Hours.**

Prerequisite: MUS 3103. A continuation of Audio Technology I, this course emphasizes hands-on and project-oriented application of sound engineering concepts in performance and live studio environments. Topics include session planning, microphone selection and placement, mixing, automation, acoustics, and sound system design. Generally offered: Fall, Spring. Course Fees: IUM1 \$90; LRLF \$10.27; STLF \$18.48; DL01 \$75.

**MUS 3213. Music in Civilization I. (3-0) 3 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, and one of the following: MUS 1552 or MUS 2521. A study of the development of musical styles and literature 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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**MUS 3223. Music in Civilization II. (3-0) 3 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, and one of the following: MUS 1552 or 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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$12.32.

**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. Course Fees: LRLF \$10.27; STLF \$12.32.

**MUS 3263. Music Since 1900. (3-0) 3 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, and one of the following: MUS 1552 or 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**MUS 3272. Choral Literature. (2-1) 2 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, and one of the following: MUS 1552 or MUS 2521. A survey of major choral composers, genres, works, and styles appropriate for middle school and high school choirs. Includes exposure to Renaissance, Baroque, Classical, and contemporary choral literature, including jazz and popular music. Generally offered: Fall of odd-numbered years. Course Fees: LRLF \$10.27; STLF \$12.32.

**MUS 3303. Music in Health. (3-0) 3 Credit Hours.**

Introduction to the field of music and health, and how participation in music can impact health and wellbeing. Examines different professions in which both arts practices and research take place, existing music intervention practices, and published research. Course fees: LRLF \$10.27; STLF \$18.48.

**MUS 3311. Music Technology for Music Educators. (1-1) 1 Credit Hour.**

Prerequisite: Enrollment is limited to music majors; designed specifically for Music Education 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 3312. Credit cannot be earned for both MUS 3311 and MUS 3312.) Generally offered: Spring. Course Fees: IUM1 \$30; LRLF \$10.27; STLF \$6.16; DL01 \$25.

**MUS 3372. Choral Arranging. (2-1) 2 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, and one of the following: MUS 1552 or MUS 2521. A robust introduction to composing and arranging for choral voices. Addresses practical concerns of writing for children's choir, changing voices, teenage voices, and mature voices in a variety of musical genres and styles. Generally offered: Fall of even-numbered years. Course Fees: LRLF \$10.27; STLF \$12.32.

**MUS 3382. Topics in Performance Literature. (2-0) 2 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, and one of the following: MUS 1552 or MUS 2521. A study of performance repertoire from a representative composer, group of composers, or musical genre. Individuals and musical works are considered within the contexts of historical, social, and cultural identities and the frameworks of intellectual history and performance practices. May be repeated for credit when topics vary. Generally offered: Fall.

**MUS 3392. Applied Performance Literature. (0-0) 2 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, and one of the following: MUS 1552 or MUS 2521. A focused study of the solo, chamber, and/or ensemble performance repertoire as it applies to students' principal instrumental and/or course of study. Generally offered: Spring. Course Fees: LRLF \$10.27; STLF \$12.32.

**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 Fees: IUM1 \$30; LRLF \$10.27; STLF \$6.16; DL01 \$25.

**MUS 3413. Music Perception and Cognition. (3-0) 3 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, and one of the following: MUS 1552 or 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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 Education majors with the opportunity to develop experience and familiarity with teaching vocal music. Generally offered: Fall, Spring. Course Fees: IUM1 \$30; LRLF \$10.27; STLF \$6.16.



**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 Fees: IUM1 \$30; LRLF \$10.27; STLF \$6.16; DL01 \$25.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**MUS 3463. Teaching Secondary Vocal Music. (3-0) 3 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, and one of the following: MUS 1552 or MUS 2521. A study of the essential elements of teaching general and vocal music at the secondary level. Generally offered: Spring. Course Fees: LRLF \$10.27; STLF \$18.48.

**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 Fees: IUM1 \$30; LRLF \$10.27; STLF \$6.16.

**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 Fees: IUM1 \$30; LRLF \$10.27; STLF \$6.16.

**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 Education majors with the opportunity to develop experience and familiarity with teaching orchestral and band instruments. Generally offered: Spring. Course Fees: IUM1 \$30; LRLF \$10.27; STLF \$6.16; DL01 \$25.

**MUS 3511. Diction for Singers. (1-1) 1 Credit Hour.**

Prerequisite: 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. Course Fees: LRLF \$10.27; STLF \$6.16.

**MUS 3532. Private Instruction. (0-0) 2 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, successful completion of two semesters of MUS 2542 with grades of "C-" or better, and one of the following: MUS 1552 or MUS 2521; this course is 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; concurrent enrollment in an assigned University ensemble is required. Attendance at performance seminar is required. May be repeated for credit a maximum of three semesters. (Formerly Music Performance-Private Instruction III.) Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; M001 \$308; STLF \$12.32.

**MUS 3543. Private Instruction. (0-0) 3 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, successful completion of two semesters of MUS 2542 with grades of "C-" or better, and one of the following: MUS 1552 or MUS 2521; enrollment is limited to students accepted to upper-division standing in the Performance emphasis of the Bachelor of Music degree program and 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; concurrent enrollment in an assigned University ensemble is required. Private instruction at an advanced level. Attendance at performance seminar is required. May be repeated for credit a maximum of three semesters. (Formerly Music Performance-Private Instruction IV.) Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; M001 \$462; STLF \$18.48.

**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 Fees: LRLF \$10.27; M001 \$462; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**MUS 3623. Composition with the Digital Audio Workstation. (3-0) 3 Credit Hours.**

Prerequisite: MUS 3103. The digitization of music production, widespread since the general adoption of computer programs known as Digital Audio Workstations (DAWs), has fundamentally changed the working methods of, and blurred the lines between, composers, and producers. This course examines the formal and practical implications of this shift, emphasizing the recent and prevalent focus on molding real sounds (and the related de-emphasis on molding abstract models of sound). Production tools such as automation, quantization, looping, beat-making, MIDI coding, and sample triggering will be considered with respect to their effect on composition and songwriting. Students will employ these techniques while creating their own productions using the DAW Pro Tools. Course Fees: IUM1 \$60; LRLF \$10.27; STLF \$18.48.

**MUS 3633. Seminar in Object-Oriented Sound Design. (3-0) 3 Credit Hours.**

This course will cover a conceptual and practice approach to making live, interactive sound processing. Employing Ableton Live, Max/MSP, and Jitter, students will create new compositions, instruments, and environments that employ object oriented-approaches to sound processing and video. Generally offered: Fall. Course Fees: IUM1 \$60; LRLF \$10.27; STLF \$18.48.

**MUS 3711. Mariachi Ensemble. (0-3) 1 Credit Hour.**

Prerequisite: 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 Fees: LRLF \$10.27; MC01 \$25; STLF \$6.16.



**MUS 3771. Jazz Ensemble. (0-3) 1 Credit Hour.**

Prerequisite: 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 Fees: LRLF \$10.27; MC01 \$25; STLF \$6.16.

**MUS 3791. Lyric Theatre. (0-5) 1 Credit Hour.**

Prerequisite: 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. Credit cannot be earned for both MUS 3791 and MUS 3792.) Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; MC01 \$25; STLF \$6.16.

**MUS 3801. UTSA Athletic Band. (0-5) 1 Credit Hour.**

Prerequisite: 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. (Same as MUS 3802.) (Formerly titled UTSA Marching Band.) Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; MC01 \$25; STLF \$6.16.

**MUS 3802. UTSA Athletic Band. (0-5) 2 Credit Hours.**

Prerequisite: 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. (Same as MUS 3801.) Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; MC01 \$50; STLF \$12.32.

**MUS 3803. UTSA Athletic Band. (0-6) 3 Credit Hours.**

Prerequisite: 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. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; MC01 \$75; STLF \$18.48.

**MUS 3831. Principal Ensemble. (0-5) 1 Credit Hour.**

Prerequisite: Open to all students, but an audition may be required. Large ensembles that rehearse and perform literature from the standard choral, orchestral, and wind band literature. Possible ensembles are: Chamber Singers, Concert Choir, Women's Choir, Men's Glee Club, UTSA Orchestra, Wind Ensemble, Symphonic Band, and University Band. May be repeated for credit. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; MC01 \$25; STLF \$6.16.

**MUS 3832. Principal Ensemble. (0-5) 2 Credit Hours.**

Prerequisite: Open to all students, but an audition may be required. Large ensembles that rehearse and perform literature from the standard choral, orchestral, and wind band literature. Possible ensembles are: Chamber Singers, Concert Choir, Women's Choir, Men's Glee Club, UTSA Orchestra, Wind Ensemble, Symphonic Band, and University Band. May be repeated for credit. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; MC01 \$50; STLF \$12.32.

**MUS 3833. Principal Ensemble. (0-6) 3 Credit Hours.**

Prerequisite: Open to all students, but an audition may be required. Large ensembles that rehearse and perform literature from the standard choral, orchestral, and wind band literature. Possible ensembles are: Chamber Singers, Concert Choir, Women's Choir, Men's Glee Club, UTSA Orchestra, Wind Ensemble, Symphonic Band, and University Band. May be repeated for credit. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; MC01 \$75; STLF \$18.48.

**MUS 4113. Counterpoint. (3-0) 3 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, and one of the following: MUS 1552 or 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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**MUS 4142. Composition IV. (0-0) 2 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, MUS 3162, and one of the following: MUS 1552 or MUS 2521. 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 Fees: LRLF \$10.27; M001 \$308; STLF \$12.32.

**MUS 4153. Audio Technology III. (3-0) 3 Credit Hours.**

Prerequisite: MUS 3103. A seminar in advanced 'in the box' studio sound production techniques. Subjects covered include recording, editing, signal processing, mixing, mastering, MIDI and software sequencing, project planning and arrangement, and the role of the engineer and the producer. Generally offered: Fall, Spring. Course Fees: IUM1 \$90; LRLF \$10.27; STLF \$18.48; DL01 \$75.

**MUS 4163. Topics in Music Theory. (3-0) 3 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, and one of the following: MUS 1552 or 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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 Fees: IUM1 \$90; LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$12.32; DL01 \$50.

**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. (Same as MUS 4532. Credit cannot be earned for both MUS 4522 and MUS 4532.) Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; STLF \$12.32.

**MUS 4531. Vocal Pedagogy I. (1-1) 1 Credit Hour.**

Prerequisites: MUS 2112, MUS 2162, and one of the following: MUS 1552 or 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. Course Fees: LRLF \$10.27; STLF \$6.16.

**MUS 4532. Music Pedagogy. (2-1) 2 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, and one of the following: MUS 1552 or 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. Class can be repeated for credit when topics vary. (Same as MUS 4522. Credit cannot be earned for both MUS 4522 and MUS 4532.) Generally offered: Fall. Course Fees: LRLF \$10.27; STLF \$12.32; DL01 \$50.

**MUS 4541. Vocal Pedagogy II. (1-1) 1 Credit Hour.**

Prerequisites: MUS 2112, MUS 2162, MUS 4531, and one of the following: MUS 1552 or 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. Course Fees: LRLF \$10.27; STLF \$6.16.

**MUS 4543. Private Instruction. (0-0) 3 Credit Hours.**

Prerequisites: MUS 2112, MUS 2162, successful completion of two semesters of MUS 3543 with grades of "C-" or better, and one of the following: MUS 1552 or MUS 2521; 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; concurrent enrollment in an assigned University ensemble is required. Private instruction at an advanced level. Attendance at area performance seminar is required. May be repeated for credit for a maximum of three semesters. (Formerly Music Performance-Private Instruction V.) Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; M001 \$462; STLF \$18.48.

**MUS 4561. Senior Recital. (0-0) 1 Credit Hour.**

Prerequisites: MUS 2112, MUS 2162, MUS 2521, and consent of instructor; concurrent enrollment in MUS 4543 is required of students in the Performance emphasis; concurrent enrollment in MUS 4142 is required of students in the Composition emphasis. A public performance presented as a culmination of the student's private instruction. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; STLF \$6.16.

**MUS 4581. Chamber Music. (0-3) 1 Credit Hour.**

Prerequisite: 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 Fees: LRLF \$10.27; MC01 \$25; STLF \$6.16; DL01 \$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. Course Fees: LRLF \$10.27; STLF \$18.48.

**MUS 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 Fees: LRLF \$10.27; STLF \$6.16.

**MUS 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 Fees: LRLF \$10.27; STLF \$12.32.

**MUS 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 Fees: LRLF \$10.27; STLF \$18.48.

**MUS 4931. Music Internship. (0-0) 1 Credit Hour.**

Prerequisite: MUS 2542. The opportunity to gain knowledge through experience in the music field under the supervision of private music professionals. Opportunities will be developed in consultation with the faculty advisor and appropriate music professionals. May be repeated for credit. Generally offered: Fall and Spring semesters. Course Fees: LRLF \$10.27; STLF \$6.16.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$6.16; DL01 \$25.

**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. Course Fees: LRLF \$10.27; STLF \$12.32.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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 Fees: IUM1 \$30; LRLF \$10.27; STLF \$6.16.

**MUS 4971. Music Marketing Project. (0-0) 1 Credit Hour.**

Prerequisite: Consent of instructor. A guided project in music marketing. Students will have the opportunity to create a product that brings together knowledge of their major discipline with their specific skills in music marketing. Generally offered: Fall. Course fees: LRLF \$10.27; STLF \$6.16.

## Neuroscience, Developmental and Regenerative Biology (NDRB)

**NOTE: All prerequisites for Neuroscience, Developmental and Regenerative Biology (NDRB) courses must be completed with a grade of "C-" or better.**

### Neuroscience, Developmental and Regenerative Biology (NDRB) Courses

**NDRB 1033. Drugs and Society. (3-0) 3 Credit Hours.**

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. (Same as BIO 1033. Credit cannot be earned for both NDRB 1033 and BIO 1033.) Generally offered: Fall, Spring. Course Fees: LRC1 \$12; LRS1 \$46.20; STSI \$21.60.

**NDRB 2113. Introduction to Neuroscience. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1203 (formerly BIO 1404). An introduction to the interdisciplinary field of Neuroscience, including understanding of the foundations of brain function, behavior, and neurological diseases from molecular, neuroanatomical, neurophysiological, neurochemical, and behavioral points of view. Generally offered: Fall, Spring. Course Fees: LRS1 \$46.20, STSI \$21.60.

**NDRB 2953. Special Topics. (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 Topics may be repeated for credit when the topics vary, but no more than 6 semester credit hours will apply to a bachelor's degree, regardless of discipline. No more than 6 semester credit hours of NDRB 2953, NDRB 4951, or NDRB 4953 can be applied to a Bachelor of Science degree in Neuroscience. Course Fees: LRS1 \$46.20; STSI \$21.60.

**NDRB 3213. Animal Behavior. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203 (formerly BIO 1404); prior completion of BIO 1223 (formerly BIO 1414) recommended. 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. (Formerly BIO 3213. Credit cannot be earned for both NDRB 3213 and BIO 3213.) Generally offered: Fall, Spring, Summer. Differential Tuition \$150. Course fee: IUB1 \$10.

**NDRB 3362. Molecular Biochemistry Laboratory. (1-4) 2 Credit Hours.**

Prerequisites: BIO 2362, CHE 1103, and completion or concurrent enrollment in MAT 1093 or higher. A study of the microscopic, biochemical and molecular techniques used to investigate biochemical reactions and the structure and function of proteins in cells and tissues. Techniques will include protein extraction, protein characterization, enzyme kinetics, chromatography, western blotting, Immunofluorescence, and bioinformatics. (Formerly BIO 3522, BIO 3822, and BME 3114. Same as BIO 3362. Credit cannot be earned for both NDRB 3362 and BIO 3362 or NRDB 3362 and any of the following: BIO 3522, BIO 3822, or BME 3114.) Generally offered: Fall, Spring, Summer. Differential tuition: \$100, Course Fees: IUB1 \$10; L001 \$30.

**NDRB 3433. Neurobiology. (3-0) 3 Credit Hours.**

Prerequisite: NDRB 2113. Anatomy and physiology of nervous systems and the mechanisms of neuronal functions. Formerly BIO 3433. Credit cannot be earned for both NDRB 3433 and BIO 3433. Generally offered: Fall, Spring. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 3442. Neurobiology Laboratory. (0-4) 2 Credit Hours.**

Prerequisites: NDRB 2113 and completion of or concurrent enrollment in NDRB 3433. A laboratory course emphasizing principles presented in NDRB 3433. (Formerly BIO 3442. Credit cannot be earned for both NDRB 3442 and BIO 3442.) Generally offered: Fall, Spring. Differential Tuition: \$100. Course Fees: IUB1 \$10; L001 \$30.

**NDRB 3453. Neuroscience and Our Future. (3-0) 3 Credit Hours.**

Prerequisite: NDRB 2113. A discussion of the implications of recent Neuroscience discoveries. Students will use available literature and their own powers of reason to separate fact from fantasy and determine what future applications of Neuroscience may be possible. (Formerly BIO 3453. Credit cannot be earned for both NDRB 3453 and BIO 3453.) Generally offered: Spring. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 3463. Brain Diseases. (3-0) 3 Credit Hours.**

Prerequisite: NDRB 3433. A study of selected major brain diseases and neurological disorders, their underlying causes and treatments, and an emphasis on molecular mechanisms. Generally offered: Fall. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 3623. Neuropsychopharmacology. (3-0) 3 Credit Hours.**

Prerequisite: NDRB 3433. 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. (Formerly BIO 3623. Credit cannot be earned for both NDRB 3623 and BIO 3623.) Generally offered: Fall. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 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. (Formerly BIO 3663. Credit cannot be earned for both NDRB 3663 and BIO 3663.) Generally offered: Fall. Differential Tuition: \$150. Course fee: IUB1 \$10.



**NDRB 3813. Cell Biology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 2313; prior completion of BIO 3513 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 NDRB 3813 and BME 3114. (Formerly BIO 3813, credit also cannot be earned for both NDRB 3813 and BIO 3813.) Generally offered: Fall, Spring, Summer. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 3913. Molecular Biology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 2313; prior completion of BIO 3513 is recommended. A study of nucleotides, DNA, replication, recombination, RNA, transcription, genetic code, translation, genomes, and chromosomes. (Formerly BIO 3913. Credit cannot be earned for both NDRB 3913 and BIO 3913.) Generally offered: Fall, Spring. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 3993. Principles of Cancer Biology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 1203 (formerly BIO 1404). A broad introduction to mechanisms that produce oncogenes and tumor suppressor genes. Methodologies of cancer assessment and prevention will be reviewed. (Formerly BIO 3933. Credit cannot be earned for both NDRB 3993 and BIO 3933.) Generally offered: Fall, Spring. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 4143. Developmental Biology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 2313; prior completion of 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 4143. Credit cannot be earned for both NDRB 4143 and BIO 4143.) Generally offered: Fall. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 4153. Frontiers in Pluripotent Stem Cells. (3-0) 3 Credit Hours.**

Prerequisite: BIO 2313; prior completion of NDRB 3813 is recommended. The course covers interrelated topics such as pluripotency, cell fate specification, differentiation, patterning, organogenesis, morphogenesis, regeneration, and tissue engineering with an emphasis on human pluripotent stem cells and translational applications/emerging technologies related to regenerative medicine such as CRISPR/Cas9 gene editing and 3D organoids. Generally offered: Spring. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 4453. Endocrinology. (3-0) 3 Credit Hours.**

Prerequisite: BIO 2313. Molecular, cellular, and physiological effects of hormones in health and disease. Topics include molecular mechanisms of hormone action in reproductive physiology, growth and development, and defects in hormonal regulation underlying clinically important syndromes (e.g., diabetes, hypertension, osteoporosis, and cancer). (Formerly BIO 4453. Credit cannot be earned for both NDRB 4453 and BIO 4453.) Generally offered: Fall. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 4483. Developmental Neuroscience: From Zygote to Brain Circuits. (3-0) 3 Credit Hours.**

Prerequisites: BIO 2313, NDRB 3813, and NDRB 3433. A comparative developmental approach will be used to understand patterning mechanisms that control formation of the nervous system along the major axes of the body. Other topics include epigenetic mechanisms regulating neuronal plasticity and disease. Generally offered: Fall. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 4583. Emergent Properties of Neural Circuits. (3-0) 3 Credit Hours.**

Prerequisite: NDRB 3433. An exploration of how interesting and useful functions arise in networks of neurons based on fundamental principles of cellular neurophysiology, neuroanatomy, and neurochemistry. (Formerly BIO 4583. Credit cannot be earned for both NDRB 4583 and BIO 4583.) Generally offered: Spring. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 4683. Neural Data Science. (3-0) 3 Credit Hours.**

Prerequisites: MAT 1193, CS 1063 or DS 4013, STA 1403 or PSY 2073, and NDRB 2113. Analysis and interpretation of neurophysiological data, such as spike trains and EEG traces recorded from behaving animals or human subjects. While gaining hands-on computer-programming experience, this course will examine how neuroscientists use data analysis to investigate open questions. Lastly, more advanced "data science" techniques will tackle the complex data sets that arise from innovative brain-machine interfaces. Generally offered: Spring. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 4783. Computational Neuroscience. (3-0) 3 Credit Hours.**

Prerequisites: MAT 1193, CS 1063 or DS 4013, STA 1403 or PSY 2073, and NDRB 2113, or consent of the instructor. An introduction to brain modeling and computational approaches to brain function. Topics include neural coding and the computational properties of neurons and neuronal networks. Generally offered: Fall. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 4813. Brain and Behavior. (3-0) 3 Credit Hours.**

Prerequisite: NDRB 2113. 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. (Formerly BIO 4813. Credit cannot be earned for both NDRB 4813 and BIO 4813, nor PSY 4183.) Generally offered: Fall. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 4823. Cognitive Neuroscience. (3-0) 3 Credit Hours.**

Prerequisite: NDRB 3433, or NDRB 4813, 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, and research with other species, to study the brain basis of complex behavior and cognitive disorders, such as memory loss, language impairment, and developmental disorders. (Formerly BIO 4823. Credit cannot be earned for both NDRB 4823 and BIO 4823.) Generally offered: Spring. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 4911. Independent Study. (0-0) 1 Credit Hour.**

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 will apply to a bachelor's degree, regardless of discipline. Only 6 semester credit hours of NDRB 4911-3, NDRB 4923, and NDRB 4993, in any combination, can be taken as NDRB 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. Differential Tuition: \$50.

**NDRB 4912. Independent Study. (0-0) 2 Credit Hours.**

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 will apply to a bachelor's degree, regardless of discipline. Only 6 semester credit hours of NDRB 4911-3, NDRB 4923, and NDRB 4993, in any combination, can be taken as NDRB 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. Differential Tuition: \$100.

**NDRB 4913. Independent Study. (0-0) 3 Credit Hours.**

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 will apply to a bachelor's degree, regardless of discipline. Only 6 semester credit hours of NDRB 4911-3, NDRB 4923, and NDRB 4993, in any combination, can be taken as NDRB 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. Differential Tuition: \$150.

**NDRB 4923. Laboratory Research. (0-0) 3 Credit Hours.**

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 NDRB 4911-3, NDRB 4923, and NDRB 4993, in any combination, can be taken as NDRB 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. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 4951. Special Studies. (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 no more than 6 semester credit hours will apply to a bachelor's degree, regardless of discipline. No more than 6 semester credit hours of NDRB 2953, NDRB 4951, or NDRB 4953 can be applied to a B.S. degree in Neuroscience. Generally offered: Fall, Spring, Summer. Differential Tuition: \$50.

**NDRB 4953. Special 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. Special Studies may be repeated for credit when the topics vary, but no more than 6 semester credit hours will apply to a bachelor's degree, regardless of discipline. No more than 6 semester credit hours of NDRB 2953, NDRB 4951, or NDRB 4953 can be applied to a B.S. degree in Neuroscience. Generally offered: Fall, Spring, Summer. Differential Tuition: \$150. Course fee: IUB1 \$10.

**NDRB 4993. Honors Research. (0-0) 3 Credit Hours.**

Prerequisites: 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 will apply to a bachelor's degree, regardless of discipline. Only 6 semester credit hours of NDRB 4911-3, NDRB 4923, and NDRB 4993, in any combination, can be taken as NDRB 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. Generally offered: Fall, Spring. Differential Tuition: \$150.

## Non-course Based Instruction (NCB)

### Non-course Based Instruction (NCB) Courses

**NCB 0502. Specialized Study for Math. (2-0) 2 Credit Hours.**

This class requires co-enrollment in MAT 1023 for those students who are not exempted from the TSI and do not have a passing score on the TSI Math Assessment. This course provides the opportunity for students to review and practice just in time support of prerequisite and MAT 1023 topics. Students should be in a degree plan that requires MAT 1023. Course Fee: LRNC \$24.50; DL01 \$50.

**NCB 0542. Specialized Study for MAT 1043 Corequisite. (2-0) 2 Credit Hours.**

This class requires co-enrollment in MAT 1043 for those students who are not exempted from the TSI and do not have a passing score on the TSI Math Assessment. This course provides the opportunity for students to review and practice just in time support of prerequisite and MAT 1043 topics. Students should be in a degree plan that requires MAT 1043. Course Fee: LRNC \$24.50; DL01 \$50.

**NCB 0552. Specialized Study for MAT 1053 Corequisite. (2-0) 2 Credit Hours.**

This class requires co-enrollment in MAT 1053 for those students who are not exempted from the TSI and do not have a passing score on the TSI Math Assessment. This course provides the opportunity for students to review and practice just in time support of prerequisite and MAT 1053 topics. Students should be in a degree plan that requires MAT 1053. Course Fee: LRNC \$24.50; DL01 \$50.

**NCB 0572. Specialized Study for MAT 1073 Corequisite. (2-0) 2 Credit Hours.**

This class requires co-enrollment in MAT 1073 for those students who are not exempted from the TSI and do not have a passing score on the TSI Math Assessment. This course provides the opportunity for students to review and practice just in time support of prerequisite and MAT 1073 topics. Students should be in a degree plan that requires MAT 1073. Course Fee: LRNC \$24.50; DL01 \$50.

**NCB 0602. Specialized Study for Writing and Reading. (2-0) 2 Credit Hours.**

This class requires co-enrollment in WRC 1013 for those students who are not exempted from the TSI and do not have a passing score on the TSI ELAR Assessment (formerly the TSI Reading/Writing Assessments). This course provides the opportunity for students to review and practice composing, editing, and research in support of the WRC 1013 course. Course Fee: LRNC \$24.50; DL01 \$50.



# 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 1203. 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. (Same as BIO 2043. Credit cannot be earned for both NDT 2043 and BIO 2043.) Generally offered: Fall, Spring. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

### NDT 2313. Introduction to Public Health Nutrition. (3-0) 3 Credit Hours.

Prerequisite: NDT 2043 or equivalent. Introduces students to the principles of nutrition and public health. Considers the multiple levels of influence on diet intake, food choice, and related health outcomes. Examines nutrition prevention policy, programs, initiatives, and interventions. The course will also cover the role of the public health nutrition professional in the community. Course fees: LRHC \$10; STHC \$18.

### NDT 2323. Nutrition Matters: Food Systems from Farm to Fork. (3-0) 3 Credit Hours.

Prerequisite: NDT 2043 or equivalent. Students will gain a scientific foundation for understanding what we eat matters, farm to fork, and the tools and skills to make the healthy food choices to promote good health and prevent chronic disease. Course fees: LRHC \$10; STHC \$18.

### 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 \$225; LRHC \$10; STHC \$6; DL01 \$25.

### 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: DL01 \$75; LRHC \$10; STHC \$18.

### 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; LRHC \$10; STHC \$12.

### 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: LRHC \$10; STHC \$18; DL01 \$75.

### 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: LRHC \$10; STHC \$18.

### 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: LRHC \$10; STHC \$18.

### 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: LRHC \$10; STHC \$18; DL01 \$75.

### 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: LRHC \$10; STHC \$18.

### NDT 3363. Nutrition Education and Communication for Health Professionals. (3-0) 3 Credit Hours.

Prerequisite: NDT 2043 or equivalent. Introduces students to the fundamentals of nutrition education including traditional and developing models and theories of learning for promoting good nutrition and health. Students will develop a basic understanding of the consumer trends in food, nutrition, health, and effective communication skills to promote a healthy lifestyle. Course fees: LRHC \$10; STHC \$18.

### NDT 3373. Foundations of Maternal and Child Health and Nutrition. (3-0) 3 Credit Hours.

Prerequisite: NDT 2043 or equivalent. This course is an introduction to the historical perspective of maternal and child health with an emphasis on nutritional recommendations during preconception, pregnancy, lactation, early infancy, and childhood. Students will gain an understanding of the federal programs that support women, infants, and children, and explore career opportunities. Course fees: LRHC \$10; STHC \$18.

### 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: LRHC \$10; STHC \$18; DL01 \$75.

### 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: DNPF \$20; LRHC \$10; STHC \$6; DL01 \$25.

**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: DNPF \$20; LRHC \$10; STHC \$6.

**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: DL01 \$75; LRHC \$10; STHC \$18.

**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: LRHC \$10; STHC \$18.

**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: LRHC \$10; STHC \$18; DL01 \$75.

**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: LRHC \$10; STHC \$18.

**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: LRHC \$10; STHC \$18.

**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: LRHC \$10; STHC \$18; DL01 \$75.

**NDT 4911. 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. (Formerly NDT 4951. Credit cannot be earned for both NDT 4951 and NDT 4911.) Course Fee: STHC \$6.

**NDT 4912. 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. (Formerly NDT 4952. Credit cannot be earned for both NDT 4952 and NDT 4912.) Course Fee: STHC \$12.

**NDT 4913. 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. (Formerly NDT 4953. Credit cannot be earned for both NDT 4953 and NDT 4913.) Course Fee: STHC \$18.

**NDT 4943. Special Studies in Nutrition and Dietetics. (3-0) 3 Credit Hours.**

Prerequisite: Consent of Instructor. Organized course offering the opportunity for specialized study in an area of nutrition and dietetics 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: LRHC \$10; STHC \$18; DL01 \$75.

## 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 Fees: LRC1 \$12; LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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 Fees: LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**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 \$10.27; STLF \$18.48.

**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 \$10.27; STLF \$18.48.

**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 \$10.27; STLF \$18.48; DL01 \$75.

**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 \$10.27; STLF \$18.48.

**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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**PHI 3083. Philosophy of Mind. (3-0) 3 Credit Hours.**

This course examines the answers to the metaphysical question of how mind or consciousness fits into the physical world, also known as the mind body problem. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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.") Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**PHI 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 Fees: LRLF \$10.27; STLF \$6.16.

**PHI 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 Fees: LRLF \$10.27; STLF \$12.32.

**PHI 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 Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$6.16.

**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. Course Fees: LRLF \$10.27; STLF \$12.32.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

## 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. Course Fees: LRC1 \$12; LRS1 \$46.20; MEPA \$18; STSI \$21.60.

**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 \$46.20; MEPA \$18; STSI \$21.60; DL01 \$75.

**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 \$15.40; STSI \$7.20; DL01 \$25.

**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 \$46.20; MEPA \$18; STSI \$21.60; DL01 \$75.



**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 \$15.40; STSI \$7.20; DL01 \$25.

**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 \$46.20; MEPA \$18; STSI \$21.60; DL01 \$75.

**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. (Formerly PHY 1911. Credit cannot be earned for both PHY 1951 and PHY 1911.) Generally offered: Fall, Spring. Course Fees: IUP1 \$20; LRS1 \$15.40; STSI \$7.20; DL01 \$25.

**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 \$46.20; MEPA \$18; STSI \$21.60; DL01 \$75.

**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. (Formerly PHY 1931. Credit cannot be earned for both PHY 1971 and PHY 1931.) Generally offered: Fall, Spring. Course Fees: IUP1 \$20; LRS1 \$15.40; STSI \$7.20; DL01 \$25.

**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 \$46.20; STSI \$21.60; DL01 \$75.

**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 \$15.40; STSI \$7.20; DL01 \$25.

**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 \$46.20; MEPA \$18; STSI \$21.60; DL01 \$75.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150.

**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.") Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.



**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150. Course Fee: MEPA \$18; DL01 \$75.

**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.) Differential Tuition: \$150. Course Fee: MEPA \$18.

**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. Differential Tuition: \$150.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150.

**PHY 4833. Molecular Biophysics. (3-0) 3 Credit Hours.**

Prerequisites: CHE 1113 and one of the following: PHY 2103, CHE 3804, or CHE 4354 (Formerly 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. Differential Tuition: \$150. Course fee: DL01 \$75.

**PHY 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 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. Differential Tuition: \$50.

**PHY 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 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. Differential Tuition: \$150.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150. Course Fee: MEPA \$18; DL01 \$75.

**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. Differential Tuition: \$150.

# Political Science (POL)

## 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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**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: DL01 \$75; LRC1 \$12; LRLF \$10.27; STLF \$18.48.

**POL 2403. Mexican American Politics. (3-0) 3 Credit Hours.**

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). Course Fees: LRLF \$10.27; STLF \$18.48.

**POL 2503. Introduction to Political Theory. (3-0) 3 Credit Hours.**

Prerequisite: POL 1013. An introduction to important works in the history of political thought. Topics examined may include justice, ethics, freedom, agency, leadership, political regimes, and the origins of political communities. Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; STLF \$18.48.

**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.") Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**POL 2603. Introduction to Global Politics. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. This course provides an overview of the intellectual development of the field of international relations and world affairs in the context of globalization. The course examines interactions among the actors of global politics - states, non-state actors, and institutions - in an interconnected world. It introduces students to basic theoretical frameworks and concepts including but not limited to discussions of levels of analysis, order, governance, and international organization. Specific topics may include conflict and security, war and peace, transnational terrorism, humanitarian intervention and peacekeeping operations, international human rights, globalization, climate change, international aid and trade, international finance, and democracy promotion. (Same as GLA 2603. Credit cannot be earned for both POL 2603 and GLA 2603.) Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**POL 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. Topics may include political development and modernization, dependency and development, conflict, civil wars, coups and terrorism. (Same as GLA 2633. Credit cannot be earned for both GLA 2633 and POL 2633.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**POL 2703. Scope and Methods. (3-0) 3 Credit Hours.**

Prerequisite: POL 1013. An introduction to fundamental quantitative analysis and its applications to the study of political phenomena. The class will cover descriptive and inferential statistics, from hypothesis testing through multivariate regression. Class will emphasize applied learning, so students will practice how to obtain, prepare, visualize, and analyze data using R programming language. Course is generally offered: Fall, Spring. Course fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**POL 3003. Environmental Law. (3-0) 3 Credit Hours.**

Prerequisite: POL 1013. This course surveys the legal and regulatory framework for environmental protection in the United States. The course surveys the major environmental statutes, and the common law, constitutional law, and administrative law principles and requirements that can also apply. Topics include air quality, water quality, hazardous waste, toxic substances, land use, endangered species, and climate change. Course fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**POL 3033. Global 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 among a broad range of actors including nation states, civil society, the private sector and many more. This course explains theories of global governance and compares these perspectives to the analysis of political scientists on the past record and likely future of world order. (Formerly International Governance.) (Same as GLA 3033. Credit cannot be earned for both POL 3033 and GLA 3033.) Generally offered: Summer. Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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? Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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 Fees: LRLF \$10.27; MST1 \$30; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL1 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**POL 3303. Race and American Politics. (3-0) 3 Credit Hours.**

Prerequisite: POL 1013. What is the role of racial and ethnic identities in American political life? Why is this so often a difficult topic for Americans to engage when discussing their political views and actions? Can the United States accurately be described as a democratic country in relation to ethnic and racial divisions? If not, what more is required before such a description is accurate? These are among the central questions that we will address in this course. The premise of the course is that racial and ethnic divisions are among the most important fault lines in American politics, and that we cannot fully understand the country's politics without a deeper understanding of the causes, effects, and meanings of these divisions and the roles they play in our politics. Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. (Formerly POL 3023. Credit cannot be earned for both POL 3023 and POL 3333.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.



**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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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 3573. Credit can only be earned for one course: GES 3573 or POL 3413.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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 (formerly GRG 3423), or POL 3423.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**POL 3463. Politics of the Developing World. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. The class introduces the political and economic systems of various developing nations and relates them to those of developed nations. It provides students with the opportunity for inquiry into the political and economic problems of these countries, such as development, instability, and political change. (Formerly Politics of the Third World.) (Same as GLA 3463. Credit cannot be earned for both POL 3463 and GLA 3463.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.") Course Fees: LRLF \$10.27; STLF \$18.48.

**POL 3483. International Political Economy. (3-0) 3 Credit Hours.**

Prerequisite: POL 1013. This course is an introduction to the theories, 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. Further topics may include globalization, development, regional and global institutions and multinational enterprises. (Same as GLA 3483. Credit cannot be earned for both POL 3483 and GLA 3483.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**POL 3503. American Foreign Policy since World War II. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. The class offers students to study theories and the history of US foreign policy. This may include an examination of major public institutions involved in foreign policy making as well as private interests influencing American foreign policy. Further topics may include public opinion and foreign involvement, specific policies toward international organizations and major world regions, as well as issue areas such as security, global economy, human rights and developments and the global environment. (Same as GLA 3503. Credit cannot be earned for both POL 3503 and GLA 3503.) Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**POL 3513. International Organizations in World Politics. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. The class provides students with the opportunity to study the role of international organizations in world politics. Special attention is given to the practice and theory of intergovernmental organizations in areas such as security, global economy, development and human rights and the global environment. Theories may include traditional IR and organizational theories. Organizations examined may include the United Nations system, regional organizations, development banks, security alliance systems, and common markets. (Same as GLA 3513. Credit cannot be earned for both POL 3513 and GLA 3513.) Generally offered: Fall. Course Fees: LRLF \$10.27; STLF \$18.48.



**POL 3523. Violence 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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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 childcare. (Formerly titled "Social Policy in Modern Welfare States.") Generally offered: Spring. Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**POL 3653. Federalism. (3-0) 3 Credit Hours.**

Prerequisite: POL 1013. Federalism is a constitutional arrangement that formally divides power between a central government and member states, each of which governs citizens concurrently. This course explores the theory and practice of federalism in the United States and other federal systems with special attention to questions of constitutional structure, decentralization and concurrent enforcement, secession and nullification, minority rights, sectional conflict, and judicial review. Course fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**POL 3763. Globalization. (3-0) 3 Credit Hours.**

Prerequisite: GLA 1013 or POL 1013. This course examines normative and empirical issues in globalization, such as the role of states and non-state actors, the emergence of global civil society, patterns of international development, the influence of international integration on security, health, violence, and the role of institutions for global politics. Further topics may include theories and debates on the scale and impact of globalization, backlash and resistance, as well as future trajectories. (Same as GLA 3763 (formerly INS 3763). Credit cannot be earned for more than one of the following: POL 3763, GLA 3763, or INS 3763.) Generally offered: Summer. Course Fees: LRLF \$10.27; STLF \$18.48.

**POL 3773. Experiments in Democratic Renewal. (3-0) 3 Credit Hours.**

Prerequisite: POL 1013. This course examines experiments with popular participation around the world that use various techniques to solve public problems and deepen democracy. The setting of these experiments is the double movement of globalization of the economy and bureaucratic government. Experts and activists have turned to learning processes and direct action. The course examines reform experiments in the United States as well as other countries in Latin America, Europe, South Asia, and elsewhere. The course will examine debates about the political and ethical foundations of the experiments as well as the efficacy of new decision-making techniques. Policy cases may include schooling, environmental protection, policing, housing, drug rehabilitation, sweatshop labor, community finance, women's development, and public budgeting. Course Fees: LRLF \$10.27; STLF \$18.48.

**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.") Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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). Course Fees: LRLF \$10.27; STLF \$18.48.

**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 who have taken GLA 3533. (Formerly GLA 4163. Credit cannot be earned for both POL 4163 and GLA 4163.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$6.16.

**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. Course Fees: LRLF \$10.27; STLF \$12.32.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$36.96.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**POL 4983. Research Practicum. (0-0) 3 Credit Hours.**

Prerequisites: Permission in writing (form available) from 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

## 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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**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. Course Fees: DL01 \$75; LRLF \$10.27; STLF \$18.48.

**PAL 3003. Environmental Law. (3-0) 3 Credit Hours.**

This course surveys the legal and regulatory framework for environmental protection in the United States. The course surveys the major environmental statutes, and the common law, constitutional law, and administrative law principles and requirements that can also apply. Topics include air quality, water quality, hazardous waste, toxic substances, land use, endangered species, and climate change. Course fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**PAL 3343. 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 and PAL 3323. Credit can only be earned for one course: PAL 3343, PAL 3323 or LGS 3323.) Generally offered: Summer. Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.



**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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 and POL 4123. Credit cannot be earned for both PAL 4123 and POL 4123 or LGS 4123.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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.) Course Fees: LRLF \$10.27; STLF \$18.48.

**PAL 4153. 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. (Formerly Law and Literature.) (Same as POL 4133. Credit cannot be earned for both PAL 4153 and POL 4133.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**PAL 4223. Torts through the Case Method. (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. Course Fees: LRLF \$10.27; STLF \$18.48.

**PAL 4233. Federal Courts. (3-0) 3 Credit Hours.**

Prerequisite: POL 1013. Legal principles and rules are taught in law school through "casebooks" that include court opinions and explanatory or supplemental case notes. Students are expected to learn about "the law" in a particular subject area through the study of cases. This course uses a law school textbook on Torts. The method of study is useful for students aiming to attend law school or for students interested legal system practices apart from attending law school. (Formerly Federal Courts.) (Formerly LGS 4233. Credit cannot be earned for both PAL 4233 and LGS 4233.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**PAL 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 Fees: LRLF \$10.27; STLF \$6.16.

**PAL 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 Fees: LRLF \$10.27; STLF \$12.32.

**PAL 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. (Formerly LGS 4913. Credit cannot be earned for both PAL 4913 and LGS 4913.) Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Credit cannot be earned for both LGS 4933 and PAL 4933.) Course Fees: LRLF \$10.27; STLF \$18.48.



**PAL 4953. Special Studies in Politics and Law. (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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48; DL01 \$75.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

## 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. (Formerly PSY 2013. Credit cannot be earned for both PSY 1013 and PSY 2013.) Generally offered: Fall, Spring, Summer. Course Fees: DL01 \$75; LRC1 \$12; LRHC \$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. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

**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. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

**PSY 2513. Abnormal Psychology. (3-0) 3 Credit Hours. (TCCN = PSYC 2320)**

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. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

**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. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$18.

**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. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$18.

**PSY 3053. Multicultural 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. (Formerly titled "Cross-Cultural Psychology." Credit cannot be earned for both PSY 3053 Cross-Cultural Psychology and PSY 3053 Multicultural Psychology.) Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**PSY 3073. Personality and Behavior. (3-0) 3 Credit Hours.**

Prerequisite: PSY 3403 completed with a minimum grade of "C-". Examination of the relationship of personality to behavior, behavioral tendencies, including thoughts and feelings. Topics include the theoretical foundation of personality psychology, an examination of research regarding personality's influence on behavior, and the application of what psychologists know about personality. Course Fees: LRHC \$10; STHC \$18.

**PSY 3113. Motivation and Emotion. (3-0) 3 Credit Hours.**

Prerequisite: PSY 3403 completed with a minimum grade of "C-", 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. Course Fees: LRHC \$10; STHC \$18.

**PSY 3153. Sensation and Perception. (3-0) 3 Credit Hours.**

Prerequisite: PSY 3403 completed with a minimum grade of "C-". 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. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$18.

**PSY 3303. Psychological Perspectives on Gender. (3-0) 3 Credit Hours.**

Prerequisite: PSY 1013. Consideration of physiological and social-learning origins of sex differences and psychological theories of sex-stereotyped and sexual behavior. Topics may include gender differences and similarities in aggression, sexual behavior, personality, intellectual activity, psychopathology, the development of gender and gender roles, sexism and discrimination, gender stereotypes, sexual orientation and sexuality, and intersex conditions. Generally offered: Fall, Spring. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**PSY 3403. Experimental Psychology. (3-0) 3 Credit Hours.**

Prerequisites: Two courses from PSY 2503, PSY 2513, PSY 2533, or PSY 2563; and PSY 2073 completed with a minimum grade of "C-" 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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**PSY 3413. Experimental Projects and Laboratory. (2-2) 3 Credit Hours.**

Prerequisite: Completion of or concurrent enrollment in PSY 3403 (completed with a minimum grade of "C-"). 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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**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 emerging adulthood through old age. Relevant research is reviewed in the areas of memory, intellect, mental and physical health, social development, personality, meaning, stress and coping, bereavement, and dying. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

**PSY 3543. Introduction to Clinical Psychology. (3-0) 3 Credit Hours.**

Prerequisites: PSY 2513 and PSY 3403 completed with a minimum grade of "C-"; or consent of instructor. An introduction to the scientist-practitioner viewpoint of clinical psychology, which balances research and practice. The basic tools of psychological assessment, psycho-diagnosis, and psychotherapy will be addressed. Generally offered: Fall, Spring, Summer. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**PSY 3553. Behavior Analysis and Learning. (3-0) 3 Credit Hours.**

Prerequisites: PSY 1013 or equivalent; and PSY 3403 completed with a minimum grade of "C-" 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. Course Fees: LRHC \$10; STHC \$18.

**PSY 3563. Couple and Family Psychology. (3-0) 3 Credit Hours.**

Prerequisites: PSY 1013, and PSY 3403 completed with a minimum grade of "C-". 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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**PSY 4003. History of Psychology. (3-0) 3 Credit Hours.**

Prerequisite: PSY 3403 completed with a minimum grade of "C-" 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. Course Fees: LRHC \$10; STHC \$18.

**PSY 4013. Social Psychology of the Self. (3-0) 3 Credit Hours.**

Prerequisites: PSY 2533 and PSY 3403 completed with a minimum grade of "C-"; 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. Course Fees: LRHC \$10; STHC \$18.

**PSY 4103. Social Psychology of Prejudice. (3-0) 3 Credit Hours.**

Prerequisites: PSY 2533 and PSY 3403 completed with a minimum grade of "C-". Consideration of social, psychological, and personality factors in prejudice and stereotyping, and their interaction with cultural factors in producing racism and other prejudices. Course Fees: LRHC \$10; STHC \$18.

**PSY 4133. Social and Personality Development. (3-0) 3 Credit Hours.**

Prerequisites: PSY 2503 or PSY 2533; and PSY 3403 completed with a minimum grade of "C-", 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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**PSY 4143. Memory. (3-0) 3 Credit Hours.**

Prerequisites: PSY 3403 completed with a minimum grade of "C-", 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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**PSY 4183. Physiological Psychology. (3-0) 3 Credit Hours.**

Prerequisites: BIO 1203 (Formerly BIO 1404) or PSY 1013; and PSY 3403 completed with a minimum grade of "C-". 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. (Same as BIO 4183. Credit cannot be earned for both BIO 4183 and PSY 4183.) Generally offered: Fall, Spring, Summer. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**PSY 4193. Relationships. (3-0) 3 Credit Hours.**

Prerequisites: PSY 2533 and PSY 3403 completed with a minimum grade of "C-". 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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**PSY 4213. Social Cognition. (3-0) 3 Credit Hours.**

Prerequisites: PSY 2533 or PSY 2563; and PSY 3403 completed with a minimum grade of "C-", 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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**PSY 4253. Psychology of Health. (3-0) 3 Credit Hours.**

Prerequisite: PSY 3403 completed with a minimum grade of "C-" 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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**PSY 4343. Cognitive Neuroscience. (3-0) 3 Credit Hours.**

Prerequisite: PSY 3403 and PSY 3413. 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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**PSY 4911. Independent Study. (0-0) 1 Credit Hour.**

Prerequisites: Permission in writing (form available) from the instructor, 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. Course Fees: LRHC \$10; STHC \$6.

**PSY 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: Permission in writing (form available) from the instructor, 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. Course Fees: LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$36.

**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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**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. Course Fees: LRHC \$10; STHC \$18.

## Public Administration (PAD)

### Public Administration (PAD) Courses

**PAD 1113. Public Administration and Policy 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 Core Curriculum requirement in the Component Area Option. (Formerly Public Administration in American Society.) Generally offered: Fall, Spring. Course Fees: LRC1 \$12; STHC \$18; DL01 \$75.

**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: STHC \$18; DL01 \$75.

**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: STHC \$18; DL01 \$75.

**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: STHC \$18; DL01 \$75.

**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: STHC \$18; DL01 \$75.

**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: STHC \$18; DL01 \$75.

**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: STHC \$18; DL01 \$75.

**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. Students will analyze the social impact of economic development, including quality of life for residents and community well-being. It reviews the impact of public sector incentives and the outcomes of collaborative efforts between government agencies, corporations, and nonprofit organizations through case studies of a variety of urban areas. Course Fee: STHC \$18; DL01 \$75.

**PAD 3063. Public Sector Economics. (3-0) 3 Credit Hours.**

This course examines the role that government plays in the economy and its effects on the welfare of its citizens. The efficiency and equity of government expenditures and tax policies are examined by looking at their impact on individual behavior and the distribution of income. Among the topics covered are public goods, externalities, social security, health care reform, public assistance programs, and taxation. Course fees: LRHC \$10; STHC \$18.

**PAD 3073. Civic Leadership 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: STHC \$18; DL01 \$75.

**PAD 3083. Project Management for the Public Sector. (3-0) 3 Credit Hours.**

This course will introduce key concepts of project management from the perspective of public agencies and institutions that contract with those agencies. This course will cover project management methodology and tools to successfully manage large-scale projects. Students will learn how to meet project goals on time and within the allocated budget. The course will cover how to effectively engage stakeholders to maximize project success. Topics may also include risk management, oversight, problem-solving, and government procurement and contracting. Students will learn about the role of a project manager and related public service careers. Course fees: LRHC \$10; STHC \$18.

**PAD 3113. Managing Nonprofit Organizations. (3-0) 3 Credit Hours.**

This course focuses on leading nonprofit organizations. Students will consider organizational performance and client/community engagement in order to maximize the public value of nonprofit organizations. In light of efforts to foster inclusion and representation, students will learn about recruiting staff and volunteers and strategically composing board memberships. Topics will include organizational goal setting, program management/evaluation, community awareness/advocacy, and decision-making through collaborative models. Course Fee: STHC \$18.

**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: STHC \$18.



**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: STHC \$18; DL01 \$75.

**PAD 3163. Quantitative Analysis for Public Administration and Policy. (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: STHC \$18; DL01 \$75.

**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: STHC \$18.

**PAD 4853. Essential Skills for a Career in Public Service (Research Capstone). (3-0) 3 Credit Hours.**

Prerequisite: Should be taken in the senior year or with consent of instructor. The course provides an opportunity for students to develop essential skills for careers in public service. Students consider their career and educational plans after graduation, and gain tools to prepare them for a successful job search. Students then strengthen the following skills: research, writing, critical analysis of contemporary policy issues, and communicating research findings. This is the capstone course for the Bachelor of Arts in Public Administration and Policy degree but is also open to students in other majors. Generally offered: Fall, Spring. Course Fee: STHC \$18; DL01 \$75.

**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 for Health, Community and 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: STHC \$6.

**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 for Health, Community and 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: STHC \$18.

**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: STHC \$18.

**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: STHC \$36.

**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: STHC \$18.

**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: STHC \$18.

## Race, Ethnicity, Gender, and Sexuality Studies (REGS)

### Race, Ethnicity, Gender, and Sexuality Studies (REGS) Courses

**REGS 2003. Intersectional Approaches to Social Justice. (3-0) 3 Credit Hours.**

This course will introduce students to concepts and race-based and gender-based theories that frame critical and liberatory pedagogies. Historical, social, political, philosophical, cultural, and economic forces that shape United States public school system will be explored. Students in the course will engage in an intensive study around systemic injustices as they relate to hegemonic logics of schooling, such as coloniality, heteronormativity, white supremacy, and anti-blackness. This course also seeks to recover community-rooted ways of knowing that facilitate culturally sustaining pedagogies, liberatory identities and critical consciousness. Topics addressing economic, political, and status hierarchies as well as how struggles for equality have varied across race, ethnicity, religion, sexual identity, and class within these systems vary from semester to semester. The course includes a capstone project in which students plan a program of study appropriate to the academic fields of African American Studies, Mexican American Studies and Women's and Gender Studies. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.



**REGS 4083. Ethnic and Gender Studies Research Seminar. (3-0) 3 Credit Hours.**

Prerequisites: 12 hours completed in AAS, MAS, WGSS, REGSS, or combination; limited to junior and senior majors in AAS, MAS, WGSS, or REGSS. This seminar provides students the opportunity to learn interdisciplinary research methods for conducting research in ethnic studies and intersectional gender studies. Provides students the opportunity to compare, contrast, and integrate theory and methods, and guides students in the design and conduct of interdisciplinary research with communities of color. Topics may include qualitative, ethnography, oral history, feminist, archival analysis, decolonial, interdisciplinary, humanities, humanistic social science, or other methods with an emphasis on innovative community-oriented research that respond to dominant theories of knowledge production. Designed for students majoring in fields related to Race, Ethnicity, Gender, and Sexuality Studies, such as African American Studies, Mexican American Studies, or Women's, Gender, and Sexuality Studies. Students may earn credit for this course or for AAS 3113, MAS 4083, or WGSS 3613. May be repeated if methods focus differs or with instructor consent. Course fees: LRH1 \$20.54; STSH \$30.81.

## Real Estate (RFD)

### 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. Differential Tuition: \$126. Course Fee: DL01 \$75.

**RFD 3533. Principles of Construction for Real Estate Professionals. (3-0) 3 Credit Hours.**

Prerequisites: Real Estate Finance Development major or consent of instructor. 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. Differential Tuition: \$126. Course fee: DL01 \$75.

**RFD 3571. Real Estate Seminar. (1-0) 1 Credit Hour.**

Prerequisites: Declared Real Estate Finance and Development major or minor. Weekly presentations of current topics in real estate. This seminar may be repeated one time for a total of two semester credit hours. Differential Tuition: \$42.

**RFD 4303. Facility and Property Management Policies and Procedures. (3-0) 3 Credit Hours.**

Prerequisite: 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.) Differential Tuition: \$126.

**RFD 4313. Facility and Property Management Practices. (3-0) 3 Credit Hours.**

Prerequisite: 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.) Differential Tuition: \$126.

**RFD 4733. Principles of Sustainable Real Estate Development. (3-0) 3 Credit Hours.**

Prerequisites: FIN 4713, FIN 4723, and RFD 3533. 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. Generally offered: Fall, Spring. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126.

**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. Differential Tuition: \$126.

**RFD 4763. Real Estate Marketing. (3-0) 3 Credit Hours.**

Prerequisite: 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.) Differential Tuition: \$126.

**RFD 4773. Real Estate Data Analysis. (3-0) 3 Credit Hours.**

Prerequisite: Declared Real Estate Finance and Development major or minor. Study of applications and quantitative real estate market data to support business decision making. Differential Tuition: \$126.

**RFD 4853. Real Estate Appraisal. (3-0) 3 Credit Hours.**

Prerequisites: FIN 3013 and FIN 3433. 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.) Differential Tuition: \$126.

**RFD 4911. Independent Study. (0-0) 1 Credit Hour.**

Prerequisites: A 3.0 Carlos Alvarez College of Business grade point average (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. Differential Tuition: \$42.

**RFD 4912. Independent Study. (0-0) 2 Credit Hours.**

Prerequisites: A 3.0 Carlos Alvarez College of Business grade point average (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. Differential Tuition: \$84.

**RFD 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: A 3.0 Carlos Alvarez College of Business grade point average (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. Differential Tuition: \$126.

**RFD 4923. Internship in Real Estate. (0-0) 3 Credit Hours.**

Prerequisites: 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 Carlos Alvarez 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. Credit cannot be earned for both FIN 4923 and RFD 4923.) Generally offered Fall, spring, and summer. Differential Tuition: \$126.

**RFD 4951. Special Studies in Real Estate. (1-0) 1 Credit Hour.**

Prerequisites: Declared Real Estate Finance and Development major or minor. 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. Differential Tuition: \$42.

**RFD 4952. Special Studies in Real Estate. (2-0) 2 Credit Hours.**

Prerequisites: Declared Real Estate Finance and Development major or minor. 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. Differential Tuition: \$84.

**RFD 4953. Special Studies in Real Estate. (3-0) 3 Credit Hours.**

Prerequisites: Declared Real Estate Finance and Development major or minor. 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. Differential Tuition: \$126.

## Russian (RUS)

### Russian (RUS) Courses

**RUS 1014. Elementary Russian I. (3-2) 4 Credit Hours. (TCCN = RUS 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 \$10.27; MM01 \$7; STLF \$24.64; DL01 \$100.

**RUS 1024. Elementary Russian II. (3-2) 4 Credit Hours. (TCCN = RUS 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 Fees: LRLF \$10.27; MM01 \$7; STLF \$24.64; DL01 \$100.

**RUS 2013. Intermediate Russian I. (3-1) 3 Credit Hours. (TCCN = RUS 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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**RUS 2023. Intermediate Russian II. (3-1) 3 Credit Hours. (TCCN = RUS 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: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**RUS 4213. 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 geopolitics, traditions, history, music, literature, art, or film. May be repeated for credit when topics vary. (Formerly RUS 3633). Generally offered: Spring. Course Fee: DL01 \$75; LRLF \$10.27; MM01 \$7; STLF \$18.48.

## 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: DL01 \$75; LRC1 \$12; LRHC \$10; STHC \$18.

**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: DL01 \$75; LRC1 \$12; LRHC \$10; STHC \$18.

**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: DL01 \$75; LRC1 \$12; LRHC \$10; STHC \$18.

**SOC 2033. Introduction to Health and Social Services Professions. (3-0) 3 Credit Hours.**

This course introduces students to the health and social services professions. Students will explore career opportunities and develop professional skills. In considering the delivery of health care and social services across society, several bureaucratic and organizational perspectives are examined with an awareness regarding cultural diversity and ethics. Service delivery systems are introduced and classified according to sub-populations being served by the professional and inter-professional teams. Major characteristics of the U.S. health care system are introduced and integrated as the student explores issues that influence professional practice. Different career options are explored utilizing assessment tools and reflective writing to identify the knowledge, skills, educational requirements, and potential compensation of various career opportunities. Students develop career planning skills while creating a professional portfolio for volunteer opportunities, internships, and employment. Course fees: LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$18.

**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: Fall, Spring. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

**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. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**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. Course Fees: LRHC \$10; STHC \$18.

**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. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

**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. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**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: Fall, Spring. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.



**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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**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.") Same as DEM 3223. Credit cannot be earned for both SOC 3223 and DEM 3223. Generally offered: Fall, Spring. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**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. Course Fees: LRHC \$10; STHC \$18.

**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 WGSS 3953 (formerly WS 3953). Credit cannot be earned for both SOC 3263 and WGSS 3953 if the topics are the same.) Generally offered: Spring. Course Fees: LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**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.") Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**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. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

**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. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**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 and BBL 3413. Credit cannot be earned for both BBL 3413, MAS 3413, and SOC 3413.) (Formerly titled "Mexican American Family.") Generally offered: Summer. Course Fees: LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$18.

**SOC 3443. Health in Adolescence and the Transition to Adulthood. (3-0) 3 Credit Hours.**

This course examines sociological perspectives on health and well-being in adolescence and the transition to adulthood. The life course perspective is presented as a framework for understanding adolescence within social, historical, and institutional contexts. An additional focus of the course is on inequalities in risks, opportunities, resources, and health outcomes across racial, ethnic, gender, socioeconomic, and other social statuses. Course fees: LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$18.

**SOC 3553. Health Care Fraud and Compliance Investigation. (3-0) 3 Credit Hours.**

This course introduces students to the examination of health care fraud and compliance investigation. Students will also explore career opportunities related to health care compliance. This class will look at the devastating effects that healthcare fraud has on the financial resources of the United States. We will review cases of healthcare fraud that involved more than just money - the ultimate price - human lives. We will review healthcare fraudulent schemes and methods to detect these schemes. Who are the perpetrators? Who are the victims? Methods of investigation will be explored to look at how to prevent fraud with current laws, task forces and compliance efforts. Whistleblowers will be discussed regarding their efforts to stop healthcare fraud and the risks they took to come forward. The class will also examine the many free resources available to the public on the topic of healthcare fraud. Students will have a chance to investigate possible career paths related to fighting healthcare fraud. Course fees: LRHC \$10; STHC \$18.

**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. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

**SOC 4093. Urban Sociology. (3-0) 3 Credit Hours.**

This course explores the nature, conditions, and consequences of urbanization. A focus on population growth and structural change in metropolitan areas is presented. Additionally, social and demographic characteristics are used to understand dynamics associated with urban populations. Course fees: LRHC \$10; STHC \$18.

**SOC 4123. Senior Seminar in Sociology. (3-0) 3 Credit Hours.**

Pre-requisites: SOC 3323, SOC 3373 or SOC 3393, and SOC 3353. A writing intensive capstone course for sociology majors that synthesizes and applies sociological knowledge through the integration of theory and research methods. Professional development is emphasized. Course fees: LRHC \$10; STHC \$18.

**SOC 4133. Religion, Spirituality, and Health. (3-0) 3 Credit Hours.**

This course introduces students to the study of religion, spirituality, and health. Students will explore the effects of religion and spirituality on mental health, physical health, and mortality risk. Taken together, these diverse aspects of the course will: (a) provide new information about the role of religion and spirituality in contemporary life, especially in the United States, (b) help students to learn about basic theoretical tools and empirical approaches via which scholars in the social scientists and multiple other disciplines study the religion/spirituality-health connection, and (c) acquaint students with central themes and findings in the burgeoning empirical literature on religion and spirituality and mental health and psychological well-being, physical health, biological functioning, and mortality. Course fees: LRHC \$10; STHC \$18.

**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. Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$18; DL01 \$75.

**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). Course Fees: DL01 \$75; LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$6.

**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. Course Fees: LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$18.



**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 classroom 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. Course Fees: LRHC \$10; STHC \$36.

**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. Course Fees: LRHC \$10; STHC \$18.

**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. Course Fees: LRHC \$10; STHC \$36.

**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. Course Fees: LRHC \$10; STHC \$18.

## 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: DL01 \$100; LRC1 \$16; LRLF \$10.27; MM01 \$7; STLF \$24.64.

**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: DL01 \$100; LRLF \$10.27; MM01 \$7; STLF \$24.64.

**SPN 2013. 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 \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 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: DL01 \$75; LRC1 \$12; LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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. (Formerly SPN 2103. Credit cannot be earned for both SPN 3003 and SPN 2103.) Generally offered: Fall, Spring. Course Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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. Generally offered: Fall, Spring, Summer. Course Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**SPN 3053. Spanish for Healthcare Professionals. (3-0) 3 Credit Hours.**

Prerequisite: SPN 2023 or SPN 3003, the equivalent, or consent of instructor. This course will empower students to interact with Spanish-speaking patients in clinical settings. Students will learn to navigate patient histories and interviews, examinations, diagnostic procedures, patient education, common diagnoses, informed consent, treatment plans, etc. Course Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: DL01 \$75; LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**SPN 4003. Advanced Language Skills. (3-0) 3 Credit Hours.**

Prerequisite: SPN 3043, SPN 3063, 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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 Fees: DL01 \$75; LRLF \$10.27; MM01 \$7; STLF \$18.48.

**SPN 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. No more than 6 semester credit hours of SPN 4913 and/or SPN 4993 may be applied to the major in Spanish. Course Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

## Special Education (SPE)

### Special Education (SPE) Courses

**SPE 3303. Introduction to Applied Behavior Analysis. (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 intervention 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 recommended prerequisite for SPE 3633, SPE 3673, SPE 4673, SPE 4681, and SPE 4683. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STSH \$30.81.

**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: DL01 \$75; LRH1 \$20.54; STSH \$30.81.

**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; Restricted course: advisor code required for registration. Corequisites: SPE 3653, SPE 4643, and SPE 4683. 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 CI 4716 Clinical Teaching: All level EC-12. Generally offered: Spring. Course Fees: LEA1 \$15; LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**SPE 3633. Classroom and Behavior Management. (3-0) 3 Credit Hours.**

Prerequisite: SPE 3603. An in-depth introduction to behavior management for K-12 classrooms and other settings using applied behavior analysis. Objectives of this course include mastering evidence-based practices in applied behavior analysis within a Response to Intervention (RTI) framework, such as functional behavior assessment and function-based treatment of challenging behavior in students or clients. Behavioral approaches to classroom management at the class-wide and school-wide level are also addressed. Strategies also include the use of single-subject experimental design methodology, preference assessments, reinforcer assessments, differential reinforcement, and avoiding the use of punishment. Generally offered: Fall, Spring. Course Fees: DL01 \$75; LRH1 \$20.54; STSH \$30.81.

**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; Restricted course; advisor code required for registration. Corequisites: SPE 3623, SPE 4643, and SPE 4683. 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 CI 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 \$20.54; STF1 \$75; STSH \$30.81.

**SPE 3673. Behavioral Assessment of Students with Autism and Developmental Disorders. (3-0) 3 Credit Hours.**

Prerequisites: SPE 3603, SPE 3633, SPE 3683, SPE 3693, and SPE 4623; Restricted course: advisor code required for registration. Corequisites: SPE 4653, SPE 4673, and SPE 4693. An in-depth introduction to comprehensive curriculum development and behavioral assessment of academic and nonacademic behavior, with a focus on students or clients with autism and other developmental disorders and intellectual disability. Objectives in this course include mastering basic information about autism spectrum disorders and using the evidence-based practice of applied behavior analysis in a Response to Intervention (RTI) framework to conduct assessments and treatment evaluations which inform curriculum development, implementation, and refinement. Strategies include advanced applications of single-subject design methodology, advanced functional analysis, brief experimental analysis of academic behavior, and assessments for literacy, verbal behavior, social, and life skills. This course must be completed with a grade of "B" or better for it to serve as a prerequisite for CI 4716 Clinical Teaching: All Level EC-12. Generally offered: Fall. Course Fees: LEA1 \$15; LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**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 \$20.54; STSH \$30.81; DL01 \$75.

**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: DL01 \$75; LRH1 \$20.54; STSH \$30.81.

**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 CI 4716 Clinical Teaching: All Level EC-12. Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**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; Restricted course: advisor code required for registration. Corequisites: SPE 3623, SPE 3653, and SPE 4683. 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 CI 4716 Clinical Teaching: All Level EC-12. Generally offered: Spring. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**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; Restricted course: advisor code required for registration. Corequisites: SPE 3673, SPE 4673, and SPE 4693. 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 CI 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 \$20.54; STF1 \$75; STSH \$30.81; DL01 \$75.

**SPE 4673. Behavioral Instruction of Students with Autism and Developmental Disabilities. (3-0) 3 Credit Hours.**

Prerequisites: SPE 3603, SPE 3633, SPE 3683, SPE 3693, and SPE 4623; Restricted course: advisor code required for registration. Corequisites: SPE 3673, SPE 4653, and SPE 4693. An in-depth introduction to behavioral interventions and teaching practices for teaching academic and nonacademic skills based on the results of behavioral assessments. The content includes a focus on the use of Tier 2 and Tier 3 interventions for students with autism and other developmental disorders and intellectual disability. Objectives in this course include mastery of the use of evidence-based practice in applied behavior analysis to help students or clients meet their goals across all domains of functioning (e.g., academic, social, leisure, self-care). Course topics include how to use teaching technology such as discrete trial training, incidental teaching, chaining, contingency contracts, group-contingencies, token economies, precision teaching, and augmentative alternative communication systems. This course must be completed with a grade of "B" or better for it to serve as a prerequisite for CI 4716 Clinical Teaching: All Level EC-12. Generally offered: Fall. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**SPE 4681. Ethics in Applied Behavior Analysis Research and Practice. (1-0) 1 Credit Hour.**

Prerequisites: SPE 3303 and SPE 3633; concurrent enrollment or prior completion of SPE 4683, and either SPE 3673 or SPE 4673; prior completion of SPE 4683 is recommended because the current course will provide coverage of content from SPE 4683. 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. May be repeated once for credit. Course Fees: LRH1 \$20.54; STSH \$10.27; DL01 \$25.

**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; Restricted course: advisor code required for registration. Corequisites: SPE 3623, SPE 3653, and SPE 4643. 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. Generally offered: Spring. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**SPE 4693. Assistive Technology. (3-0) 3 Credit Hours.**

Prerequisites: SPE 3603, SPE 3633, SPE 3683, SPE 3693, and SPE 4623; Restricted course: advisor code required for registration. Corequisites: SPE 3673, SPE 4653, and SPE 4673. 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 \$20.54; STSH \$30.81; DL01 \$75.



**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 \$30.81.

## **Sport, Event, and Tourism Management (SET)**

### **Sport, Event, and Tourism Management (SET) Courses**

**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. Differential Tuition: \$126.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126.

**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.") Differential Tuition: \$126.

**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. Differential Tuition: \$126.

**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.) Generally offered: Fall, Spring. Differential Tuition: \$126.

**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. Differential Tuition: \$42.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

**SET 4921. Independent Study in Sport, Event and Tourism Management. (0-0) 1 Credit Hour.**

Prerequisites: Student must have a 3.0 Carlos Alvarez College of Business grade point average and permission in writing from the Tourism instructor, the Department Chair, and the Dean of the Carlos Alvarez College of Business (see the Carlos Alvarez 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. Differential Tuition: \$42.

**SET 4923. Independent Study in Sport, Event and Tourism Management. (0-0) 3 Credit Hours.**

Prerequisites: Student must have a 3.0 Carlos Alvarez College of Business grade point average and permission in writing from the Tourism instructor, the Department Chair, and the Dean of the Carlos Alvarez College of Business (see the Carlos Alvarez 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. Differential Tuition: \$126.



**SET 4941. Internship in Sport, Event and Tourism Management. (0-0) 1 Credit Hour.**

Prerequisites: MGT 3003 and MKT 3013 with a grade of "C-" or better, and approval in writing from the sponsoring Tourism instructor, the Department Chair, and the Dean of the Carlos Alvarez 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. Differential Tuition: \$42.

**SET 4943. Internship in Sport, Event and Tourism Management. (0-0) 3 Credit Hours.**

Prerequisites: MGT 3003 and MKT 3013 with a grade of "C-" or better, and approval in writing from the sponsoring Tourism instructor, the Department Chair, and the Dean of the Carlos Alvarez 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 approval of both. Internship 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. Differential Tuition: \$126.

## 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 \$15.41; DL01 \$75; LRB1 \$15.41; 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 \$15.41; LRB1 \$15.41; DL01 \$75.

**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 \$15.41; LRB1 \$15.41; DL01 \$75.

**STA 3003. Applied Statistics. (3-0) 3 Credit Hours.**

Prerequisite: Completion of MAT 1093 (or equivalent). Corequisite: Either MAT 1133 or MAT 1214 (or equivalents). 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, and 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. Differential Tuition: \$126. Course fee: DL01 \$75.

**STA 3013. Multivariate Analysis for the Life and Social Sciences. (3-0) 3 Credit Hours.**

Prerequisite: MAT 2233, STA 3003, STA 3513 (or equivalents). 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. Differential Tuition: \$126.

**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.) Differential Tuition: \$126.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126.

**STA 3513. Probability and Statistics. (3-0) 3 Credit Hours.**

Prerequisites: STA 3003, MAT 1224 or STA 3023, and completion of or concurrent enrollment in MAT 2214. Axiomatic probability, random variables, discrete and continuous distributions, bivariate and multivariate distributions and their applications, mixture distributions, moments and generating functions, and bivariate transformations. Generally offered: Fall, Spring, Summer. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

**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. Differential Tuition: \$126. Course fee: DL01 \$75.

**STA 4643. Introduction to Stochastic Processes. (3-0) 3 Credit Hours.**

Prerequisite: MAT 2233 and STA 3513 (or equivalents). 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. Differential Tuition: \$126.

**STA 4713. Applied Regression Analysis. (3-0) 3 Credit Hours.**

Prerequisite: MAT 2233 and STA 3523 (or equivalents). 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. Differential Tuition: \$126.

**STA 4723. Introduction to the Design of Experiments. (3-0) 3 Credit Hours.**

Prerequisite: MAT 2233 and STA 3523 (or equivalents). 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. Differential Tuition: \$126. Course fee: DL01 \$75.

**STA 4753. Time-Series Analysis. (3-0) 3 Credit Hours.**

Prerequisite: MAT 2233 and STA 3523 (or equivalents). 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. Differential Tuition: \$126.

**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.) Differential Tuition: \$126.

**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. Differential Tuition: \$126.

**STA 4911. Independent Study. (0-0) 1 Credit Hour.**

Prerequisites: A 3.0 Carlos Alvarez 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. Differential Tuition: \$42.

**STA 4913. Independent Study. (0-0) 3 Credit Hours.**

Prerequisites: A 3.0 Carlos Alvarez 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. Differential Tuition: \$126.

**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 Carlos Alvarez 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. Differential Tuition: \$126.

**STA 4953. Special Studies in Statistics. (3-0) 3 Credit Hours.**

Prerequisites: Consent from 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. Differential Tuition: \$126.

**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. Differential Tuition: \$42.

**STA 4963. Actuarial Science Examination Preparation. (3-0) 3 Credit Hours.**

Prerequisite: STA 3513. An organized course offering specialized study for Actuarial Science Examination. Topics covered include General Probability, Random Variables and Probability Distributions, Multivariate Distributions, and Stochastic Processes. Generally offered: Fall, Spring. Differential Tuition: \$126. Course fee: DL01 \$75.

**STA 4993. Honors Thesis. (0-0) 3 Credit Hours.**

Prerequisites: STA 3523 and consent from 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. Differential Tuition: \$126.

## 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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

**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. Course Fees: LRLF \$10.27; STLF \$18.48.

## Translation and Interpreting Studies (TIS)

### Translation and Interpreting Studies (TIS) Courses

**TIS 3003. Introduction to Translation and Interpreting. (3-0) 3 Credit Hours.**

Prerequisite: SPN 2023 or the equivalent. Principles of translation or interpreting between Spanish and English, 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 topics vary. (Formerly FL 3003. Credit cannot be earned for both FL 3003 and TIS 3003.) Course Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**TIS 3013. Translation and Interpreting for the Language Specialist. (3-0) 3 Credit Hours.**

Prerequisite: At least one course at the 3000 level in Spanish. This course will explore the language-related and cultural issues involved in translation and interpretation between Spanish and English and will include practice from selected areas, such as business, health care, law, technology, or the arts. May be repeated for credit when topics vary. (Formerly FL 3013. Credit cannot be earned for both FL 3013 and TIS 3013.) Course Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**TIS 3023. Interpreting in Legal Settings. (3-0) 3 Credit Hours.**

Prerequisite: SPN 2023 or SPN 3003, the equivalent, or consent of instructor. Designed to prepare students to interpret in legal settings between Spanish and English by exploring interpreter training in the US, ethics in court interpreting, professional certification, language access legislation and civil rights, terminology building, current research trends in legal interpreting, and by developing interpreting skills and strategies. Course Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**TIS 3033. Interpreting in Medical Settings. (3-0) 3 Credit Hours.**

Prerequisite: SPN 2023 or SPN 3003, the equivalent, or consent of instructor. This course aims to prepare students to interpret in medical settings between Spanish and English by providing a panoramic overview of biomedical culture in the US, body systems and anatomy, medical terminology, and by developing interpreting skills and strategies. Course Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

**TIS 3043. Advanced Practice in Healthcare Interpreting. (3-0) 3 Credit Hours.**

Prerequisite: TIS 3033 Interpreting in Medical Settings or consent of instructor; SPN 3053 strongly recommended. Advanced practice in interpreting in healthcare settings between Spanish and English. Students will strengthen their skills in the three modes of interpreting (simultaneous, consecutive, and sight translation) while receiving detailed, ongoing individual feedback. Course Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48; DL01 \$75.

**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 Spanish/English 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 Fees: LRLF \$10.27; MM01 \$7; STLF \$18.48.

## 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. Generally offered: Fall, Spring. Course fee: DL01 \$25.

**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. Course fee: DL01 \$50.

**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). Differential Tuition: \$150. Course fee: DL01 \$75.

**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. (Same as BIO 3043. Credit cannot be earned for more both BIO 3043 and UTE 3043). Differential Tuition: \$150.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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. Differential Tuition: \$150. Course fee: DL01 \$75.

**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, and LTED 3773 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 CI 4646. Credit cannot be earned for both UTE 4646 and CI 4646). Differential Tuition: \$300.



# University College Studies (UCS)

## University College Studies (UCS) Courses

### UCS 2000. Undergraduate Research and Scholarly Activity. (0-0) 0 Credit Hours.

This course is designed to support students participating in research and scholarly activity at the undergraduate level. The course will provide students the opportunity to engage further into the research process by learning and applying research methods, analytical analysis, problem solving and critical thinking skills.

### UCS 2003. Undergraduate Research and Scholarly Activity. (0-0) 3 Credit Hours.

This course is designed to support students participating in research and scholarly activity at the undergraduate level. The course will provide students the opportunity to engage further into the research process by learning and applying research methods, analytical analysis, problem solving and critical thinking skills.

### 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. Course Fee: DL01 \$25.

### UCS 2013. Career Engaged Learning. (3-0) 3 Credit Hours.

This course provides understanding of how students can prepare for future careers now, connecting the classroom to the career. Topics explored will relate to the self and an understanding of how we communicate who we are to the world (including employers). This includes an understanding of how to network productively and create a professional story about one's talents, skills, and competitiveness. This course will aid in success, self-efficacy, and agency to move students ahead in their career trajectory. This course will expose students to theory, research, entrepreneurship, and innovation. Students are not required to have a declared major or chosen career path to take this course.

### 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.

### UCS 4000. Law School Experience I. (0-0) 0 Credit Hours.

The course is designed to introduce students to law school and the legal profession and strengthen their desire to pursue a law degree. Students will have the opportunity to: 1) take mock law school lectures to learn what is expected from them in law school, 2) learn about law school application and admissions, 3) understand the real cost of a law degree, 4) have an idea of different legal fields and career choices, and 5) network with law professionals as knowledgeable resources for students' academic and professional legal career.

### UCS 4013. UTSA Advanced Engagement. (3-0) 3 Credit Hours.

UTSA Advanced Engagement provides students with experiential and meaningful community-based learning opportunities in a real-world context to enrich the learning experience, develop skills of civic engagement/social responsibility and work alongside community partners/leaders to address social challenges. Students will learn theories and best practices from community-based initiatives across academic disciplines. Student will be required to work with a community partner to design, apply, reflect, evaluate and present the service-learning project. Capstone projects will be presented at either the Civic Engagement Summit, UTSA Undergraduate Research Showcase or other approved event.

### UCS 4100. Law School Experience II. (0-0) 0 Credit Hours.

This course is designed to introduce students to the elements of analytical reasoning and critical thinking, including the clear and precise use of language, deduction, induction, conditional reasoning, analogy, and logic, and to apply to principles of reasoning and logic in preparations for the Law School Admission Test (LSAT). Prerequisites are the completion of the two SLSPA 3-credit courses during Phase I, and concurrent enrollment in the two SLSPA 3-credit courses during Phase II.

### UCS 4913. Independent Study in Prelaw. (0-0) 3 Credit Hours.

Course designed for students to hone the skills needed for law school in case they decide to pursue a legal education. Students must do independent reading, research, discussion, and or writing on a prelaw topic under the direction of a faculty member of University College.

### UCS 4933. Internship in Prelaw Studies. (0-0) 3 Credit Hours.

Course designed to serve as a pre-professional experience for students who may want to attend law school. The internship will provide students a learning experience at a law firm, in a legal department of a corporation, government agency, or non-profit organization. The internship course will be under the direction of a faculty member of University College.



# 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, AIS 1213, AIS 1223, AIS 1233, AIS 1243, AIS 1253, AIS 1263, or AIS 1273.

## 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. Course Fees: SAP1 \$25; STSA \$15. Differential Tuition: \$165.

#### 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. Differential Tuition: \$165.

#### 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. Course Fees: SAP1 \$25; STSA \$15. Differential Tuition: \$165.

#### 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. Differential Tuition: \$165. Course fee: DL01 \$75.

#### 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. Differential Tuition: \$165.

#### URP 4913. Independent Study. (0-0) 3 Credit Hours.

Prerequisite: Permission in writing (form available) from the instructor, the student's advisor, the School Director, 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. Differential Tuition: \$165.

#### 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: DL01 \$75; SAP1 \$25; STSA \$15. Differential Tuition: \$165.

## 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 \$30; STSF \$6.

#### WRC 1013. Freshman Composition I. (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: DL01 \$75; LRC1 \$12; LRF1 \$30; STSF \$6.

**WRC 1023. Freshman Composition II. (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 and critical thinking. The course provides intensive writing practice in developing argumentative claims, addressing logical fallacies, and understanding bias and assumptions to help students write clear and effective arguments. Students will further develop the ability to communicate with professional and academic audiences through written, oral, and visual methods by means of individual and team projects. Freshman Composition II continues to develop quantitative literacy skills and to promote ethical decision-making through responsible methods of data analysis and research. The course develops students' critical thinking skills through the analysis and evaluation of primary and secondary sources in order to create source-based arguments. The course also encourages students to think critically through self-reflection. Students may enroll in a discipline-specific section of the course, such as business, communication (documentaries or internet arguments), environmental issues, quantitative literacy, science/pseudoscience, or social sciences. This course, or an equivalent, is required to fulfill the Core Curriculum requirement in Communication. Offered: Fall, Spring, Summer. Course Fees: DL01 \$75; LRC1 \$12; LRF1 \$30; STSF \$6.

**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 \$30; STSF \$6; WRC1 \$5; DL01 \$75.

**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. Credit cannot be earned for both WRC 3123 and WRC 4123.)

## Women's, Gender and Sexuality Studies (WGSS)

**Women's, Gender and Sexuality Studies (WGSS) Courses****WGSS 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 intersectional approaches. Women and gender are studied as socially constructed categories created systemically through institutions. 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. Through an emphasis on Women of Color feminisms, 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 and WS 2013. Credit can only be earned for one course: WS 2013, WGS 2013, or WGSS 2013.) Generally offered: Fall, Spring, Summer. Course Fees: LRC1 \$12; LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**WGSS 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, non-binary, queer, and other gendered and sexual 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 identities and genders through intersections of race, class, gender, and other categories. May not be repeated for credit. May be applied toward the Core Curriculum requirement in Language, Philosophy and Culture. (Formerly WS 2023. Credit cannot be earned for both WGSS 2023 and WS 2023.) Course Fees: LRC1 \$12; LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**WGSS 3613. Feminist Research Methodologies. (3-0) 3 Credit Hours.**

Rigorous examination of theories, application, ethical, and epistemological concerns of feminist research. What does it mean to conduct feminist research? Investigating feminist and gendered perspectives using interdisciplinary, decolonial, and innovative methods, the course will engage issues of researcher subjectivity and reflexivity, representation, intersectionality, and community-embedded research. Students will have the opportunity to gain experience conducting feminist research. May be replaced by a REGSS methods course, such as REGSS Methods AAS 3113 or MAS 4083. (Formerly WS 3613. Credit cannot be earned for both WGSS 3613 and WS 3613.) Generally offered: Spring. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**WGSS 3953. Special Topics. (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, WS 3953, and WS 4853. Same as SOC 3263. Credit can only be earned for one of the following: SOC 3263, WGS 4853, WS 3953, WS 4853, or WGSS 3953) Generally offered: Spring. Course Fees: DL01 \$75; LRH1 \$20.54; STSH \$30.81.

**WGSS 4033. Women of Color Feminisms. (3-0) 3 Credit Hours.**

This course centers feminist epistemological contributions of Women of Color. As a result of their positionalities, Women of Color have developed their own organizations, printing presses, research approaches, and critical theories, and have contributed to social change. This course examines critical theories that make up Black, Chicana/x and Latina/x, Indigenous, and Asian/Asian American feminisms. Women of Color feminisms have advanced change through their scholarship, activism, community organizing, participation in mutual aid, cultural production, and critique of and resistance to coloniality in all of its forms. This course uses an intersectional approach to examining the contributions of Women of Color feminisms across disciplines to include, but not limited to, education, public health, popular culture, community organizing, policy, and cultural production. Same as AAS 4033 and MAS 4033, credit cannot be earned for both AAS 4033, WGSS 4033, and MAS 4033. Course fees: LRH1 \$20.54; STSH \$30.81.

**WGSS 4043. Chicana/x Feminisms. (3-0) 3 Credit Hours.**

This course centers the development of Chicana/x Feminisms before, during, and after the Chicana/o/x Civil Rights Movement. Developed by Chicana/x mothers, activists, youth, community workers, academics, and artists. Chicana/x Feminisms reflects the embodied knowledges and resulting theories of Chicanas/x who live at the intersections of race, class, gender, and sexuality that provide them with the unique insight and strategies to advocate for social transformation within their communities and beyond. The course begins with an examination of the foundational scholars within Chicana/x Feminist Thought, surveys the various contributions Chicana/x feminisms has made to education, research, labor, cultural production, spirituality, and other areas, and extends to the present to explore the shifts and advancements within Chicana/x Feminist Thought since the Movement. Same as MAS 4043, credit cannot be earned for both MAS 4043 and WGSS 4043. Course fees: LRH1 \$20.54; STSH \$30.81.

**WGSS 4623. Feminist Theories. (3-0) 3 Credit Hours.**

This course will introduce interdisciplinary feminist theories. Students will examine theoretical constructions of women, gender, and sexuality drawing primarily on Women of Color feminisms and queer theories. Students will examine how theories help explain our lives, experiences, and material conditions to create collective movements for social change. Topics may include the ways in which women, genders, and sexualities get constructed socially with special consideration of race, ethnicity, class, sexuality, and other categories. 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 and WS 4623. Credit can only be earned for one course: WS 4623, WGS 4623, or WGSS 4623.) Course Fees: DL01 \$75; LRH1 \$20.54; STSH \$30.81.

**WGSS 4863. Transnational Feminisms. (3-0) 3 Credit Hours.**

Theoretical and historical analysis of how gender ideologies and processes of globalization are affecting the conditions of women's lives and politics in complex and contradictory ways. Topics may include feminist exploration of colonialism, capitalism, resistance, agency, and social movements. (Formerly WS 4863. Credit cannot be earned for both WGSS 4863 and WS 4863.) Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STSH \$30.81; DL01 \$75.

**WGSS 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 and WS 4913. Credit can only be earned for one course: WGSS 4913, WS 4913, or WGS 4913.) Course Fees: LRH1 \$20.54; STSH \$30.81.

**WGSS 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 and WS 4933. Credit cannot be earned for both WGSS 4933, WGS 4933, or WS 4933.) Generally offered: Fall, Spring. Course Fees: LRH1 \$20.54; STSH \$30.81.

**WGSS 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, Gender, and Sexuality Studies. Students are encouraged to consult their Major Advisor about courses in African American Studies (AAS), Mexican American Studies (MAS), and Race, Ethnicity, Gender, and Sexuality Studies (REGS) related to WGSS. May be repeated for credit when topics vary. (Formerly WS 3713 and WS 4953. Credit cannot be earned for both WS 3713, WS 4953, or WGSS 4953.) Generally offered: Fall, Spring. Course Fees: DL01 \$75; LRH1 \$20.54; STSH \$30.81.

**WGSS 4973. Seminar in Women's Studies. (3-0) 3 Credit Hours.**

Prerequisite: 12 upper-division semester credit hours in Women's, Gender, and Sexuality Studies (WGSS). 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, Gender, and Sexuality Studies. For additional seminar options, students are encouraged to consult their Major Advisor about courses in African American Studies (AAS), Mexican American Studies (MAS), and Race, Ethnicity, Gender, and Sexuality Studies (REGS) related to WGSS. May be repeated once for credit when topics vary. (Formerly WS 4973. Credit cannot be earned for both WS 4973 and WGSS 4973.) Generally offered: Fall. Course Fees: DL01 \$75; LRH1 \$20.54; STSH \$30.81.

**WGSS 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. (Formerly WS 4993. Credit cannot be earned for both WS 4993 and WGSS 4993.) Course Fee: LRH1 \$20.54; STSH \$30.81.

# APPENDIX A. 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
ARCH 1301	ARC 2413
ARCH 1302	ARC 2423
ARCH 1303	ARC 1213
ARCH 1304	ARC 1223
ARCH 1307	ARC 1313
ARCH 1311	ARC 1113
ARCH 2603	ARC 2156
ARCH 2604	ARC 2166
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 1106	BIO 1201
BIOL 1107	BIO 1221
BIOL 1111	ES 1111
BIOL 1113	ES 1121
BIOL 1306	BIO 1203
BIOL 1307	BIO 1223
BIOL 1308	BIO 1233
BIOL 1309	BIO 1243
BIOL 1311	ES 1113
BIOL 1313	ES 1123
BIOL 1322	BIO 2043
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
BUSI 2305	MS 1023
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 1714
CRIJ 1301	CRJ 1113
CRIJ 1306	CRJ 2813
CRIJ 1307	CRJ 2153
CRIJ 1310	CRJ 2623
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

Appendix A. Texas Common Course Numbering System

ENGL 2311	ENG 2413	ITAL 2312	ITL 2023
ENGL 2321	ENG 2243	JAPN 1411	JPN 1014
ENGL 2326	ENG 2253	JAPN 1412	JPN 1024
ENGL 2332 - UTSA Acceptable Substitute	CSH 1103	JAPN 2311	JPN 2013
ENGL 2333 - UTSA Acceptable Substitute	CSH 1113	JAPN 2312	JPN 2023
ENGL 2341	ENG 2013	KINE 1301	KIN 2303
ENGR 1201	EE 1322	KINE 1338	KIN 2123
ENGR 1304	ME 1403	KORE 1411	KOR 1014
ENGR 2301	EGR 2103	KORE 1412	KOR 1024
ENGR 2302	EGR 2513	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
GEO 1103	GEO 1111	MATH 1442	ES 1314
GEO 1104	GEO 1131	MATH 2305	CS 2233
GEO 1105	ES 1211	MATH 2312	MAT 1093
GEO 1301	GEO 1013	MATH 2313	MAT 1193
GEO 1302	GEO 1033	MATH 2318	MAT 2233
GEO 1303	GEO 1103	MATH 2413	MAT 1214
GEO 1304	GEO 1123	MATH 2414	EGR 1324
GEO 1305	ES 1213	MATH 2414	MAT 1224
GERM 1411	GER 1014	MATH 2415	MAT 2214
GERM 1412	GER 1024	MUSI 1116	MUS 1102
GERM 2311	GER 2013	MUSI 1117	MUS 1122
GERM 2312	GER 2023	MUSI 1181	MUS 1521
GOVT 2304	POL 2533	MUSI 1182	MUS 1621
GOVT 2305	POL 1013	MUSI 1183	MUS 1531
GOVT 2306	POL 1133	MUSI 1303	MUS 2623
GOVT 2306	POL 1213	MUSI 1306	MUS 2683
HIST 1301	HIS 1043	MUSI 1310	MUS 2633
HIST 1302	HIS 1053	MUSI 1310	MUS 2663
HIST 2301	HIS 2053	MUSI 1310	MUS 2673
HIST 2321	HIS 2123	MUSI 1311	MUS 1112
HIST 2322	HIS 2133	MUSI 1312	MUS 1132
HUMA 1301	HUM 2023	MUSI 2116	MUS 2102
HUMA 1302	HUM 2033	MUSI 2117	MUS 2112
HUMA 1305	MAS 2013	MUSI 2181	MUS 2421
HUMA 1311	BBL 2023	MUSI 2182	MUS 2521
HUMA 1311	MAS 2023	MUSI 2311	MUS 2152
HUMA 1315	HUM 2053	MUSI 2312	MUS 2162
HUMA 2323	CSH 1213	PHED 1304	HTH 2513
ITAL 1411	ITL 1014	PHED 1346	BIO 1033
ITAL 1412	ITL 1024	PHIL 1301	PHI 2013
ITAL 2311	ITL 2013	PHIL 1304	HUM 2093



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 2319	PSY 2533
PSYC 2320	PSY 2513
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
SPCH 1311	COM 1043
SPCH 1315	COM 2113
SPCH 1321	COM 1053
SPCH 1321	COM 1063

# APPENDIX B. 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. 582), College Level Examination Program (CLEP) (p. 583), Competency Based Exams (CBE) (p. 584), Dantes (DSST) (p. 585), International Baccalaureate Diploma (IBD) (p. 585), and International Baccalaureate Certificate (IBC) (p. 586).. 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, 2022. 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 (<https://testing.utsa.edu/>). 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)<sup>®</sup>

Subject	Test Used	Minimum Score Required for UTSA Credit	UTSA Credit Awarded <sup>1</sup>
AP Capstone	AP Seminar and AP Research (see footnote)	3	AIS 1203 <sup>2</sup>
	AP Seminar and AP Research (see footnote)	3	WRC 1013 <sup>3</sup>
Art	Art History	3	AHC elective, 3 hours (lower division)
	2D Art & Design	3	ART 1003
	3D Art & Design	3	ART 1013
	Drawing	3	ART 1213
Biology	Biology	3 or 4	BIO 1233, BIO 1243
	Biology	5	BIO 1203, BIO 1201 (lab), BIO 1223, BIO 1221 (lab)
Chemistry	Chemistry	3	CHE 1004, CHE 1073
	Chemistry	4	CHE 1103, CHE 1121 (lab)
	Chemistry	5	CHE 1113, CHE 1131 (lab)
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)
German	German Language and Culture	2	GER 1014, GER 1024
		3	GER 1014, GER 1024, GER 2013, GER 2023
		4	GER 1014, GER 1024, GER 2013, GER 2023, GER 3023
		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: Modern	3	HIS 2123 or HIS 2133 <sup>4</sup>
Information Systems	Computer Science A	3	IS 2063
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 <sup>5</sup>
	Calculus BC	3	MAT 1214 or MAT 1193 <sup>5</sup>
	Calculus BC	4 or 5	MAT 1214, MAT 1224
	Calculus BC: AB Subscore	3	MAT 1214 or MAT 1193 <sup>5</sup>
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
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

<sup>1</sup> All credit shown in this table as elective credit is lower division unless otherwise indicated.

<sup>2</sup> Student 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).

<sup>3</sup> 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.

<sup>4</sup> Credit will be awarded for either HIS 2123 or HIS 2133, but not for both.

<sup>5</sup> Credit will be awarded for either MAT 1193 or MAT 1214, but not for both.

### College Level Examination Program (CLEP®)

Subject	Test Used	Minimum Score Required for UTSA Credit	UTSA Credit Awarded <sup>1</sup>
Biology	Biology	50	BIO 1233, BIO 1243
	Natural Sciences	50	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	50	CHE 1103, CHE 1121 (lab), CHE 1113, CHE 1131 (lab)
Economics	Principles of Macroeconomics	50	ECO 2013
	Principles of Microeconomics	50	ECO 2023
English	College Composition Modular with Essay	50 <sup>2</sup>	WRC 1013, WRC 1023
	American Literature	50	ENG 2253
	English Literature	50	ENG 2243
	Analyzing and Interpreting Literature	50	ENG 2013
	with Essay	50 <sup>3</sup>	ENG 2213
French	French Language	50	FRN 1014
		53	FRN 1014, FRN 1024
		56	FRN 1014, FRN 1024, FRN 2013
		62	FRN 1014, FRN 1024, FRN 2013, FRN 2023
German	German Language	50	GER 1014
		53	GER 1014, GER 1024

		56	GER 1014, GER 1024, GER 2013
		63	GER 1014, GER 1024, GER 2013, GER 2023
Health	Human Growth and Development	50	HTH 3543
History	History of the United States I	50	HIS 1043
	History of the United States II	50	HIS 1053
	Western Civilization I: Ancient Near East to 1648	50	HIS 2563 <sup>4</sup>
	Western Civilization II: 1648 to the Present	50	HIS 2563 <sup>4</sup>
Humanities	Humanities	50	HUM 2023
Information Systems	Information Systems	50	IS 3003
Mathematics	College Mathematics	50	MAT elective, 3 hours (lower division)
	College Algebra	50	MAT 1073
	Precalculus	50	MAT 1093
	Calculus	50	MAT 1214
Political Science	American Government	50	POL 1013
Psychology	Introductory Psychology	50	PSY 1013
Sociology	Introductory Sociology	50	SOC 1013
Spanish	Spanish Language	50	SPN 1014
		53	SPN 1014, SPN 1024
		58	SPN 1014, SPN 1024, SPN 2013
		66	SPN 1014, SPN 1024, SPN 2013, SPN 2023
	Spanish with Writing	50	SPN 1014, SPN 1024
		65	SPN 1014, SPN 1024, SPN 2013, SPN 2023

<sup>1</sup> All credit shown in this table as elective credit is lower division unless otherwise indicated.

<sup>2</sup> With "pass" on essay scored by Writing Program faculty.

<sup>3</sup> With "pass" on essay scored by English Department faculty.

<sup>4</sup> Credit will be awarded for Western Civilization I or Western Civilization II, but not for both.

## 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 <sup>1</sup>
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 <sup>2</sup>	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
		Microsoft Office Excel Certification	IS 1413
Mathematics	College Algebra with Applications	70%	MAT 1023
	College Algebra for Scientists & Engineers	70%	MAT 1073
Political Science	Texas Politics & Society <sup>4</sup>	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

<sup>1</sup> All credit shown in this table as elective credit is lower division unless otherwise indicated.

<sup>2</sup> 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 for further details at 210-458-5363.

- 3 Proof of Certiport Certificate required. Microsoft versions 2016 or 2019 are eligible.
- 4 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.

Information Systems & Cyber Security	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

<sup>1</sup> All credit shown in this table as elective credit is lower division unless otherwise indicated.

### Dantes Subject Standardized Test (DSST)

Subject	Test Used	Minimum Score Required for UTSA Credit	UTSA Credit Awarded <sup>1</sup>
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
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	Introduction to Geography	400	GES 2623
Geological Sciences	Introduction to Geology	400	GEO 1103
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

### 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. Credit may also be granted for successful completion of courses given the required minimum scores below. 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 <https://testing.utsa.edu/>.

Examination	UTSA Course	Minimum Score Required
<b>College of Business</b>		
Business/Management HL	ACC 2003	4
	MGT 3013	4
	MKT 3013	4
Economics HL	ECO 2013, ECO 2023	4
<b>College of Liberal &amp; Fine Arts</b>		
Social & Cultural Anthropology HL	ANT 2053	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 <sup>1</sup>	4
English A Literature SL/HL	ENG 2013	4
English A Language & Literature SL/HL	ENG 2013	4
	FRN 1014, FRN 1024, FRN 2013	2
French Language B HL	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



Appendix B. National Standardized Tests: Minimum Scores Required for Credit at UTSA

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 <sup>2</sup>	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
<b>College of Science</b>		
Biology SL/HL	BIO 1233, BIO 1243	4
	BIO 1203, BIO 1201 (lab), BIO 1223, BIO 1221 (lab)	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 1714	5

Environmental Systems and Societies SL	ES 2013, ES 2023, ES 2021, ES 2031	4
Mathematics HL	MAT 1093, MAT 1214 <sup>3</sup>	4
Mathematics SL	MAT 1093	4
Mathematics: Analysis & Approaches HL	MAT 1093, MAT 1214 <sup>3</sup>	4
Mathematics: Analysis & Approaches SL	MAT 1093	4
Mathematics: Applications & Interpretation HL	MAT 1073, MAT 1093	4
Mathematics: Applications & Interpretation SL	MAT 1073, MAT 1093	4
Physics HL	PHY 1603, PHY 1623	4

- <sup>1</sup> Credit will be awarded for either GRK 1114 or LAT 1114, but not for both.
- <sup>2</sup> Credit will be awarded for either GLA 2603 or POL 2603, but not for both.
- <sup>3</sup> It is recommended for students who have met the score requirements for IB Mathematics HL or Analysis & Approaches 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 (<https://testing.utsa.edu/>).

Examination	UTSA Course	Minimum Score Required
<b>College of Business</b>		
Business/Management HL	MKT 3013	4
	MGT 3013	4
Economics HL	ECO 2013, ECO 2023	4
Information Technology in a Global Society HL	IS 3003	4
<b>College of Liberal &amp; Fine Arts</b>		
Social and Cultural Anthropology HL	ANT 2053	6
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
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	6
History HL	HIS 2133	6
Global Politics HL	GLA 1013 or POL 2603 <sup>1</sup>	4
Italian Language B HL	ITL 1014, ITL 1024	2
	ITL 1014, ITL 1024, ITL 2013	3
	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
	JPN 1014, JPN 1024, JPN 2013, JPN 2023 & 9 hours upper division	6
Music HL	MUS 2243	4
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

	RUS 1014, RUS 1024, RUS 2013, RUS 2023 & 9 hours upper division	6
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
	SPN 1014, SPN 1024, SPN 2013, SPN 2023 & 6 hours upper division	5
	SPN 1014, SPN 1024, SPN 2013, SPN 2023 & 9 hours upper division	6
Theatre HL	THR 1013	4
<b>College of Sciences</b>		
Biology HL	BIO 1233, BIO 1243	4
	BIO 1203, BIO 1201 (lab), BIO 1223, BIO 1221 (lab)	6
Chemistry HL	CHE 1103, CHE 1113	5
Computer Science HL	CS 1083, CS 1714	5
Mathematics HL	MAT 1093, MAT 1214 <sup>2</sup>	4
Mathematics: Analysis & Approaches HL	MAT 1093, MAT 1214 <sup>2</sup>	4
Mathematics: Applications & Interpretation HL	MAT 1073, MAT 1093	4
Physics HL	PHY 1603, PHY 1623	4

<sup>1</sup> Credit will be awarded for either GLA 1013 or POL 2603, but not for both.

<sup>2</sup> It is recommended for students who have met the score requirements for IB Mathematics HL or Analysis & Approaches HL, and are eligible for course credit to contact the Math Department prior to registering for MAT 1224 Calculus II.

# APPENDIX C. FACULTY

## Carlos Alvarez College of Business

Name	Title	Education
Cardy, Robert L.	Professor Emeritus	B.S., M.A., Central Michigan University; Ph.D., Virginia Polytechnic Institute and State University
Grant, Kevin P.	Associate Professor Emeritus	B.S., U.S. Air Force Academy; M.S., Air Force Institute of Technology; Ph.D., Texas A&M University
Ko, Daijin	Professor Emeritus	B.S., M.S., Yonsei University; M.S., Ph.D., University of Washington
Lalatendu, Misra	Professor Emeritus	B.Eng., India Railways Institute of Mechanical and Electrical Engineering; M.B.A., Ph.D., University of Texas at Austin
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
Sandoval, Rodolpho	Associate Professor Emeritus	B.B.A., Texas A&I University; J.D., Texas Southern School of Law; M.A., Notre Dame University; LL.M., Harvard Law School
Tullous, Raydel	Associate Professor Emeritus	B.B.A., M.S., Texas Christian University; Ph.D., Santa Clara University
Walz, Diane B.	Professor Emerita	B.A., St. Louis University; M.B.A., Washington University; Ph.D., The University of Texas at Austin
Warren, John	Associate Professor Emeritus	B.A., Knox College; M.B.A., Governors State University; Ph.D., University of Illinois at Chicago
<b>Accounting</b>		
Asthana, Sharad C.	Professor	B.S., M.S., Lucknow University; Ph.D., The University of Texas at Austin
Boone, Jeff	Professor	B.B.A., M.S., Texas A&M University; Ph.D., University of North Texas
Conrad, Stacy	Assistant Professor of Practice	B.B.A., M.S., Texas A&M University
Fonte, Giuseppe	Assistant Professor of Practice	B.S., Fordham University; B.A., University of Arizona; C.P.A., New York State

Howard, Brandon	Assistant Professor of Practice	M.A., The University of Texas at San Antonio
Lee, Patrick	Assistant Professor of Practice	B.S., University of La Verne; M.S., Oklahoma State University; M.S.ACC., University of Connecticut
Linthicum, Cheryl L.	Professor	B.S., Colorado State University; M.B.A., Pittsburgh State University; Ph.D., Oklahoma State University
Liu, Hu (Harrison)	Associate Professor	Ph.D., Texas A&M University; Ph.D., University of Houston
Lopez, Dennis	Associate Professor	B.B.A., University of Puerto Rico; M.B.A., The George Washington University; Ph.D., University of Arkansas
Mao, Juan	Associate Professor	B.S., M.S., Wuhan University; Ph.D., University of Kansas
Nwaeze, Emeka T.	Professor	B.S., M.P.A., Southern University; Ph.D., University of Connecticut
Pendarvis, Deborah M.	Assistant Professor of Practice	M.A., University of West Florida; Ph.D., University of Florida
Pitman, Marshall K.	Professor	B.S., M.B.A., Eastern Illinois University; Ph.D., University of Mississippi; C.M.A., C.P.A.
Raman, K.K.	Professor	BA., University of Calcutta; M.B.A., India Institute of Management, Calcutta; Ph.D., Indiana University
Sanchez, Daniela	Assistant Professor	B.B.A., M.B.A., St. Mary's University; Ph.D., Texas Tech University
Sanchez, J. Manuel	Professor	B.B.A., M.B.A., St. Mary's University; Ph.D., The University of Texas at San Antonio
Sanders, Elaine	Associate Professor	B.B.A., Eastern New Mexico University; M.Acc., Ph.D., The University of Oklahoma
Smith, Pamela C.	Professor	B.S., University of Virginia; M.S., Ph.D., Virginia Polytechnic Institute and State University
Vaello, Linda R.	Assistant Professor of Practice	B.B.A., M.B.A., The University of Texas at San Antonio
Ye, Zhongxia (Shelly)	Associate Professor	B.S., M.Acc., Southwestern University of Finance and Economics; Ph.D., Temple University
Yin, Jennifer	Professor	B.S., M.S. Tax., University of New Orleans; Ph.D., University of Houston
<b>Economics</b>		
Alva, Samson J.	Associate Professor	B.A. Mercer University; M.A., Ph.D., Boston College
Arriaga, Ashley	Lecturer I	B.A., University of Texas at San Antonio, M.A., Johns Hopkins University
Arslan, Hayri Alper	Assistant Professor	B.A., Boğaziçi University; M.A., Sabancı University; Ph.D., Vanderbilt University

Beheshti, David	Assistant Professor	B.A., Brigham Young University; M.S., Ph.D., The University of Texas at Austin.	Bhanot, Karan	Professor	B.S.E.E., Punjab Engineering College, India; M.B.A., Indian Institute of Management; Ph.D., University of Iowa
Beladi, Hamid	Professor	B.A., Rasht College of Business, Iran; M.S., Ph.D., Utah State University	Burns, Natasha	Professor	M.B.A., Michigan State University; B.S., Ph.D., The Ohio State University
De la Viña, Lynda	Professor	B.A., The University of Texas-Pan American; M.A., Ph.D., Rice University	Ciochetti, Brian (Tony)	Professor	B.S., University of Oregon; M.S., Ph.D., University of Wisconsin-Madison
Doss, Leslie	Associate Professor of Practice	B.A., University of Texas at Arlington, M.A., University of Texas at San Antonio	Fallah, Mohammadali	Lecturer	M.S., Illinois Institute of Technology
Firoozi, Fathali	Professor	M.B.A., Oklahoma City University; M.A., The University of Texas at Austin; M.S., Ph.D., The University of Oklahoma	Garcia, John	Lecturer	M.B.A., University of Virginia
Flores, Shakira T.	Assistant Professor of Practice	B.A., M.A., The University of Texas at San Antonio	Kadapakkam, Palani-Rajan	Professor	B.S., Loyola College, India; Postgraduate Diploma in Management, Indian Institute of Management; Ph.D., University of Michigan
Ghossoub, Edgar A.	Associate Professor	B.B.A., Notre Dame University, Lebanon; M.S., University of North Carolina, Charlotte; M.S., Ph.D., University of Kentucky	Kalcheva, Ivalina	Associate Professor	B.A., University of Economics, Varna Bulgaria; M.B.A., Saginaw Valley State University; Ph.D., University of Utah
Gustafson, Carl	Lecturer I	B.A., University of Texas at Austin; M.A., Ph.D., Stanford University	LoRusso, Maria	Associate Professor of Practice	B.A., St. Bonaventure University; M.B.A., St. Mary's University; J.D., St. Mary's University
Hollas, Daniel R.	Professor	B.B.A., University of Houston; M.A., Ph.D., University of Illinois at Urbana-Champaign	McIntosh, Willard	Adjunct Professor	B.S., Eastern Kentucky University; M.B.A., Eastern Kentucky University; Ph.D., University of North Texas
Lien, Donald	Professor	B.S., National Tsing Hua University; M.S., National Chiao Tung University; M.S., Ph.D., California Institute of Technology	Naquin, Michael	Lecturer	B.S., M.B.A., Louisiana State University
Moreno-Medina, Jonathan	Assistant Professor	B.A., Universidad Nacional De Colombia; M.S., Universite Catholique de Louvain (Belgium); Ph.D., Duke University	Noll, Michael	Lecturer	B.B.A., University of Texas at San Antonio; M.B.A., University of Texas at San Antonio
Partapurwala, Mohammed	Lecturer I	B.A., State University of New York College at Geneseo; M.A., State University of New York at Buffalo	Ronald, Cooley	Lecturer	M.B.A., University of Incarnate Word
Roof, Gregory	Lecturer I	B.A., University of Texas at Austin; M.A., Ph.D., University of Texas at Dallas	Sikes, Candy	Senior Lecturer	B.S., Nicholls State University; Ph.D., University of Alabama
<b>Finance</b>			Sweet, Ronald B.	Associate Professor of Practice	B.Mus., B.B.A., The University of Texas at Austin; M.B.A., The University of Texas at San Antonio
Adhikari, Binay	Assistant Professor	B.S., Tribhuvan University; M.B.A., Kathmandu University; M.S. Auburn University; Ph.D., University of Alabama	Teske III, Raymond H. C.	Associate Professor of Practice	B.A., Baylor University; M.B.A., The University of Texas at San Antonio; J.D., South Texas College of Law
Agrawal, Vipin K.	Professor of Practice	B.E., University of Delhi; M.S., Texas A&M; Ph.D., The University of Texas at Austin	Thomson, Thomas A.	Professor	B.S.F., University of British Columbia; M.S., Virginia Polytechnic Institute and State University; Ph.D., University of California, Berkeley; Ph.D., University of Michigan
Ali, Syed	Lecturer	M.S., University of Texas at San Antonio	Timothy, Bryant	Lecturer	M.B.A., University of Texas at San Antonio
Bayar, Onur	Professor	B.S., Bogazici University; M.S., University of Pittsburgh; M.S., Carnegie Mellon University; Ph.D., Boston College	Toohy, John	Associate Professor of Practice	B.A., Williams College
			Wald, John K.	Professor	B.A., Yale University; Ph.D., University of California, Berkeley
			Wang, Zijun	Professor	B.A., M.A., Ren Min University of China; Ph.D., Texas A&M University
			Wehrmeyer, Robert	Lecturer	B.S., University of Charleston; J.D., St. Mary's University

Wolfe, Brian	Assistant Professor	B.S.C.E., University of Cincinnati; M.B.A., Xavier University; Ph.D., Indiana University
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**Information Systems and Cyber Security**

Anderson, Benjamin R.	Associate Professor of Practice	B.S., Iowa State University; M.S., Iowa State University
Bachura, Eric	Assistant Professor	B.S., University of Phoenix, Business; M.B.A., Sam Houston State University; Ph.D., The University of Texas at San Antonio
Beebe, Nicole	Professor	B.S., Michigan Technological University; M.S., Georgia State University; Ph.D., The University of Texas at San Antonio
Bou-Harb, Elias	Associate Professor	B.S., Notre Dame University; M.S., Ph.D., Concordia University; Postdoctoral, Carnegie Mellon University,
Burres, Ian	Associate Professor of Practice	B.A., Florida Atlantic University; M.S., University of Illinois Springfield
Castaneda, Robert	Associate Professor in Practice	B.S., M.S., Ph.D., The University of Texas at San Antonio
Choo, Kim-Kwang Raymond	Professor	B.A., M.S., University of South Australia; Graduate Diploma in Business Administration, University of Queensland; Ph.D., Queensland University of Technology
Davis, Terri	Senior Lecturer	B.S., Texas A&M University-Corpus Christi; M.S., The University of Texas at San Antonio
Dietrich, Glenn B.	Professor	B.S., University of Missouri; M.B.A., The University of Texas at San Antonio; Ph.D., The University of Texas at Austin
Guo, Yuanxiong (Richard)	Associate Professor	B.E., Huazhong University of Science and Technology; M.S., The University of Florida; Ph.D., The University of Florida
Kaufman, Robert	Lecturer III	B.S., Clemson University; M.S., University of West Florida; Post-Grad, University of Colorado
Liu, Zhechao (Charles)	Professor	B.A., Xiamen University, China; M.A., Tulane University; Ph.D., University of Pittsburgh
Menard, Philip	Assistant Professor	B.S., Nicholls State University; Ph.D., Mississippi State University
Mitra, Rita	Associate Professor in Practice	B.M., Texas Tech University; M.M., Julliard School of Music; D.M.A., Manhattan School of Music; M.S., New York University
Najafirad, Peyman (Paul Rad)	Associate Professor	B.S., Sharif University; M.S., Ph.D., The University of Texas at San Antonio
Pugh, William	Assistant Professor in Practice	B.A., Louisiana Tech University; M.S., Texas A&M Central Texas;

		D.B.A., University of the Incarnate Word
Rao, Hejamadi R.	Professor	B.Tech., India Institute of Technology Kanpur; M.B.A., University of Delhi; Ph.D., Purdue University
Rios, Anthony M.	Assistant Professor	B.S., Georgetown College; Ph.D., University of Kentucky
Sands, Yvette Newton	Assistant Professor in Practice	B.B.A., University of Georgia; M.S.B.E., University of North Carolina; Ed.D., University of South Carolina
Shepherd, Linda H.	Associate Professor in Practice	B.S., Northern Arizona University; M.C.S.M., Creighton University
Spivey, Woodie A.	Associate Professor	B.A.E., Georgia Institute of Technology; M.M.S., Texas Christian University; Ph.D., University of Houston
Teneyuca, David	Assistant Professor in Practice	B.B.A., M.B.A., Our Lady of the Lake University; M.S., St. Mary's University; Ph.D., Our Lady of the Lake University; Ph.D., Colorado Technical University
Valecha, Rohit	Associate Professor	B.S., M.S., Ph.D., University of Buffalo, SUNY
Villarreal, Marco	Assistant Professor in Practice	M.S., Texas A&M International; Ph.D., The University of Texas Rio Grande Valley
Williams, Karen L.	Professor in Practice	B.A., University of Colorado; B.S., M.B.A., University of West Florida; Ph.D., The Florida State University
Zanella, Gainluca	Assistant Professor of Practice	B.S., M.S., University of Parma; M.S., The University of Texas at San Antonio; Ph.D., The University of Texas at San Antonio
Zhang, Xiaolu	Associate Professor in Practice	B.E., Northeast Normal University, China; Ph.D., Jilin University, China
Zhu, Hongyi	Assistant Professor	B.B.M., Tsinghua University; Ph.D., The University of Arizona

**Management**

Albarian, Caren	Lecturer	M.S., Villanova University
Caldwell Marquez, Andrea	Assistant Professor	B.S., Pennsylvania State University; M.B.A., University of Notre Dame; Ph.D., The University of Texas at Austin
Chang, Pepe	Associate Professor	B.S., Ph.D., University of Utah
Clark, Jonathan	Associate Professor	B.A., Boston College; M.S., Ph.D., Harvard University
Cordero, Arkangel	Assistant Professor	B.A., Ave Maria University; M.B.A., Bentley University; M.S., Ph.D., Cornell University
Gunter, Matari	Lecturer	Ph.D., Our Lady of the Lake University
Heller, Victor L.	Associate Professor	B.A., M.P.A., Ph.D., Arizona State University



Huang, Albert	Assistant Professor of Practice	M.S., National Intelligence University; M.B.A., Ph.D., Our Lady of the Lake University
Keeton, Kathryn	Professor in Practice	B.S., The University of Texas at Austin; M.A., Ph.D., University of Houston
Khanna, Poonam	Associate Professor	B.Com., University of Delhi, India; M.B.A., Institute of Management Technology, India; Ph.D., The University of Texas at Austin
Krasikova, Dina	Associate Professor	Diploma, Voronezh State University; M.S., Ph.D., Purdue University
Laun, Aimee	Lecturer I	M.A., University of the Incarnate Word
Le, Huy	Professor	B.S., Vietnam National University; Ph.D., University of Iowa
Lewis, Alexander C.	Assistant Professor	B.A., Trinity University; M.A., Ph.D., The University of Texas at San Antonio
Marlow, Shannon	Assistant Professor	B.S., M.S., University of Central Florida; Ph.D., Rice University
McDonald, Michael L.	Professor	B.A., Emory University; Ph.D., The University of Texas at Austin
Miller, Stewart R.	Professor	B.A., M.B.A., Northwestern University; Ph.D., Indiana University, Bloomington
Montoya, Lisa	Associate Professor in Practice	B.A., University of Denver; M.P.A., Arizona State University; Ph.D., Washington University in St. Louis
Phillips, Mark	Associate Professor of Practice	B.S., Miami University; M.A., Webster University; Ph.D., The Union Institute
Ramos, Richard	Lecturer	M.B.A., Webster University
Rudy, Bruce C.	Associate Professor	M.S., University of Michigan; B.B.A., M.S., Ph.D., The University of Texas at Austin
Stanfill, Bruce	Assistant Professor of Practice	M.S., Florida Institute of Technology; M.B.A., New York Institute of Technology; Ph.D., Our Lady of the Lake University
Staples, Heather	Assistant Professor of Practice	Ph.D., University of the Incarnate Word
Villano, Kenneth	Lecturer	B.A., University of Notre Dame; M.B.A., University of Detroit
Walsh, Peter	Lecturer	M.B.A., Auburn University
Xu, Kai	Associate Professor	Bachelor's, Master's, Ph.D., Xi'an Jiaotong University; Ph.D., Texas A&M University
Xu, Xiaohong	Assistant Professor	B.S., South China Normal University; M.S., Peking University, China; Ph.D., Texas A&M University
Zarate, Catalina	Assistant Professor of Practice	M.B.A., Ph.D., Our Lady of the Lake University
Zhao, Peng	Assistant Professor	B.S., Zhejiang University, China; M.S. Peking University, China; Ph.D., Indiana University

### Management Science and Statistics

Anderson, Michael T.	Assistant Professor of Practice	B.S., University of California, Riverside; M.S.C.E., Stanford University; M.S., The University of Texas at San Antonio
Dell, Jacob J.	Senior Lecturer	B.A., B.B.A, Texas Lutheran University; M.B.A., University of Notre Dame
DeOliveira, Victor	Professor	B.S., M.S., Universidad Simon Bolivar; Ph.D., University of Maryland
Han, Donghoon	Associate Professor	B.Sc., M.Sc., Ph.D., McMaster University
Karimi, Amir	Assistant Professor	B.S., Shiraz University; M.S., University of Tehran; Ph.D., University of Minnesota
Keating, Jerome P.	Professor	B.S., M.A., Ph.D., The University of Texas at Arlington
Koyuncu, Isil	Assistant Professor	B.S., Bilkent University; M.S., Koc University; Ph.D., The University of Alabama
Leung, Mark T.	Professor	B.A., M.B.A., University of California; M.B.A., Ph.D., Indiana University
Massaro, Kimberly	Senior Lecturer	B.A., University of Missouri at Columbia; M.S., The University of Texas at San Antonio
Park, Yeonjoo	Assistant Professor	B.S., Ewha Womens University-Seoul; M.S., Seoul National University; Ph.D., University of Illinois at Urbana-Champaign
Roy, Anuradha	Professor	B.S., Calcutta University; M.Stat., Indian Statistical Institute, Calcutta; Ph.D., Oakland University
Roy, Arkajyoti	Assistant Professor	B.S., Ph.D., Purdue University
Sass, Daniel A.	Associate Professor	B.S., Ph.D., University of Wisconsin-Milwaukee
Sonmez, Mahmut	Professor in Practice	B.B.A., Dokuz Eylul University, Turkey; M.S., University of Birmingham, U.K.; Ph.D., Manchester School of Management, U.K.
Sun, Minghe	Professor	B.S., Northeast University of Technology; M.B.A., Chinese University of Hong Kong; Ph.D., The University of Georgia
Tripathi, Ram C.	Professor	B.A., M.A., Banaras Hindu University, India; M.S., Ph.D., University of Wisconsin-Madison
Wang, Min	Associate Professor	B.A., Concordia University; M.S., Ph.D., Clemson University
Wu, Wenbo	Associate Professor	B.S., The University of Texas at Austin; M.S., University of Central Florida; Ph.D., University of Georgia
Xu, Kefeng	Professor	B.E., Shanghai Jiao-Tong University; M.S.B.A., University of British Columbia; Ph.D., University of Maryland

Ye, Keying	Professor	B.S., Fudan University, Shanghai; M.S., Institute of Applied Mathematics, Academica Sinica, Beijing; Ph.D., Purdue University
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**Marketing**

Blank, David	Lecturer	B.B.A., M.A.A., University of Incarnate Word
Boaglio Grateaux, Wendy	Associate Professor of Practice	B.A., Metropolitan State University; M.B.A., University of Texas at San Antonio
Bojanic, David C.	Professor	B.S., Pennsylvania State University; M.B.A., James Madison University; D.B.A., University of Kentucky
Cannon, Thomas F.	Professor in Practice	B.S., M.A., Western Michigan University; J.D., South Texas College of Law
Chandrasekaran, Deepa	Assistant Professor	B.A., M.A., University of Madras, India; M.B.A., Indian Institute of Management; Ph.D., University of Southern California
Davied, Daniel J.	Associate Professor in Practice	BSET, Pittsburgh State University; M.B.A., Ph.D., St. Louis University
Gretz, Richard	Associate Professor	B.A., Westfield State College; M.A., Ph.D., Claremont Graduate University
Jensen, Ricard	Assistant Professor of Practice	B.A., Brigham Young University; M.Ed., Ph.D., Texas A&M University
Jung, Jihye	Assistant Professor	B.A., Yonsei University, South Korea; M.B.A., KDI School of Public Policy and Management, South Korea; Ph.D., Rice University
Khan, Imran	Senior Lecturer	B.S., M.B.A., University of South Alabama; D.B.A., Kennesaw State University
Kilger, Max F.	Associate Professor in Practice	B.S., Oregon State University; M.A., Ph.D., Stanford University
Malshe, Ashwin	Associate Professor	B.E., M.M.S., Mumbai University; Ph.D., Binghamton University, State University of New York
Utecht, Richard L.	Associate Professor	B.B.A., M.B.A., Texas A&I University; Ph.D., University of North Texas
Wang, Dian	Assistant Professor	B.B.A., Texas Tech University; M.B.A., The University of Texas at Arlington; Ph.D., Texas A&M University
Zhang, Yinlong (Allen)	Professor	Bachelor of History, Renmin University of China; M.Phil., Hong Kong University of Science and Technology; Ph.D., University of Pittsburgh

**College for Health, Community and Policy**

Name	Title	Education
Baird, Raymond R.	Professor Emeritus	A.B., Eastern New Mexico University; M.A., Ph.D., University of Washington
Cheatwood, A. Derral	Professor Emeritus	B.A., Oklahoma State University; M.A., Ph.D., Ohio State University
Colfer, George R.	Professor Emeritus	B.S., Lock Haven State College; M.S., Ithaca College; Ph.D., Texas A&M University
Dykes, James R.	Associate Professor Emeritus	B.A., Ph.D., The University of Texas at Austin
Gilbert, Michael J.	Associate Professor Emeritus	B.A., M.A., University of New Hampshire; Ph.D., Arizona State University
Halley, Jeffrey A.	Professor Emeritus	B.A., Hobart and William Smith Colleges; M.A., New School for Social Research; Ph.D., City University of New York
Lewis, Richard	Professor Emeritus	B.S., Texas Tech University; M.S., Ph.D., Texas A&M University
Marquez, Raquel	Professor Emerita	B.S., Southwest Texas State University; M.A., Ph.D., University of Texas
Romo, Harriett D.	Professor Emerita	B.A., The University of Texas at Austin; M.A., University of California, Los Angeles; M.A., Ph.D., University of California, San Diego
<b>Criminology and Criminal Justice</b>		
Augustyn, Megan	Associate Professor	B.A., University of Notre Dame; M.A., Ph.D., University of Maryland
Boccio, Cashen I. M.	Assistant Professor	B.A., B.S., University of Washington; M.S., California State University, Fresno; Ph.D., Florida State University
Booker, Christopher	Lecturer	B.S., M.S., Florida State University
Cardwell, Stephanie	Assistant Professor	B.S., M.S., University of Alabama at Birmingham; Ph.D., The University of Texas at Dallas
Davis, Michael	Assistant Professor of Practice	B.A., University of Texas at San Antonio; M.S., Texas State University
Enriquez, Roger	Associate Professor	B.B.A., The University of Texas at San Antonio; J.D., University of Iowa College of Law
Fahmy, Chantal D.	Assistant Professor	B.A., University of California, Irvine; M.S., California State University, Long Beach; Ph.D., Arizona State University
Hartley, Richard D.	Professor	B.S., M.S., Minot State University; Ph.D., University of Nebraska at Omaha
Lynch, Kellie R.	Associate Professor	B.A., Memorial University; M.S., Ph.D., University of Kentucky

Meade, Henry	Assistant Professor of Practice	B.A., St. Mary's University; M.P.A., The University of Texas at San Antonio	Cordova, Alberto	Associate Professor	B.S., M.S., Ph.D., Texas A&M University
Meyers, Travis	Assistant Professor	B.S., University of Wisconsin-La Crosse; M.S., Arizona State University; Ph.D., Arizona State University	Delgado, Daniele	Lecturer	B.S., The University of Texas at San Antonio; M.E., Texas A&M University- San Antonio
Moon, Byongook	Professor	B.A., Daegu University; M.S., Ph.D., Michigan State University	Dorgo, Sandor	Professor and Department Chair	B.S., Semmelweis University; M.Ed., Hungarian University of Physical Education; Ph.D., University of Georgia
Smith, Michael R.	Professor	B.S., Virginia Commonwealth University; J.D., University of South Carolina School of Law; Ph.D., Arizona State University	Floyd, Ciara	Lecturer	B.S., Samford University; M.S., The University of North Carolina at Greensboro
Tillyer, Marie Skubak	Professor	B.A., University of Dayton; M.A., Ph.D., University of Cincinnati	Francis, Jimi	Assistant Professor	B.S., M.S., The University of Nevada at Reno; Ph.D., The University of California at Davis
Tillyer, Robert	Professor	B.A., M.A., Simon Fraser University; Ph.D., University of Cincinnati	Guan, Jianmin	Associate Professor	B.S., Huizhou Normal College; M.S., Shanghai Institute of Physical Education; M.S., Wayne State University; Ph.D., Texas A&M University
Tregle, Brandon	Assistant Professor	B.A., American Military University; J.D., Louisiana State University; Ph.D., University of Nebraska at Omaha	Hull, Neil	Specialist	B.S., The University of Texas at San Antonio
<b>Demography</b>			Land, William	Assistant Professor	B.S., University of Tennessee at Chattanooga; M.S., Ph.D., Florida State University
Huang, Ying	Assistant Professor	LL.B., Southwest University of Political Science and Law; M.PP., University of Missouri; Ph.D., University of Albany	Oyama, Sakiko	Associate Professor	B.S., Oregon State University; M.S., University of Pittsburg; Ph.D., University of North Carolina
Joyner, Kara	Professor	M.A., Ph.D., The University of Chicago	Park, Se-Woong	Assistant Professor	B.S., Korea Advanced Institute of Science and Technology; M.S., Seoul National University; Ph.D., Northeastern University
Potter, Lloyd B.	Professor	B.S., Texas A&M University; M.S., University of Houston; M.P.H., Emory University; Ph.D., The University of Texas at Austin	Reno, Kelley	Full-time Lecturer	B.A., Texas Lutheran University; M.S., The University of Texas - Pan American
Saenz, Rogelio	Professor	B.S.W., Pan American University; M.S., Ph.D., Iowa State University	Umeda, Masataka	Assistant Professor	B.S., M.S.H., University of Tsukuba; Ph.D., University of Wisconsin-Madison
Singelmann, Joachim	Professor Emeritus	Universität Hamburg; M.A., Ph.D., The University of Texas at Austin	Yao, Wan Xiang	Professor	B.S., M.S., Beijing Institute of Physical Education; Ph.D., Auburn University
Sparks, Corey	Associate Professor	B.A., M.A., University of Tennessee; Ph.D., Pennsylvania State University	Zhang, John Quiang	Professor	B.S., Shandong Teacher's University; M.S., Springfield College; Ph.D., University of Missouri-Columbia
Sparks, P. Johnelle	Professor	B.A., M.A., University of Arkansas; M.A., University of Sydney; Ph.D., Pennsylvania State University	Zhang, Tianou	Assistant Professor	B.S., Sun Yat-Sen University of Medical Sciences, China; M.S., Peking University, China; Ph.D., University of Minnesota-Twin Cities
Zenteno, Rene	Professor	B.A., Instituto Tecnológico y de Estudios Superiores; M.A., El Colegio de Mexico; Ph.D., The University of Texas at Austin	<b>Nutrition and Dietetics</b>		
<b>Kinesiology</b>			Keck, Traci	Lecturer	B.S., M.S., Texas Tech University
Armstrong, Rusty	Lecturer	B.S., The University of North Carolina; M.S., Texas State University	Leal Vasquez, Liset	Director/Assistant Professor in Practice	B.S., The University of Texas-Pan American; M.A., The University of Texas at San Antonio; Ph.D., Texas Women's University
Cabra, Nydia L.	Full-time Lecturer	B.S., University of Texas at El Paso; M.Ed., Southwest Texas State University; DAT, A.T. Still University	Sharma, Vidya	Senior Lecturer	BHMS, University of Mumbai; M.A., Wayne State University
Cheever, Kelly	Assistant Professor	B.S., Southern Utah University; M.S., Brigham Young University; Ph.D., Temple University			
Chung, Eunhee	Assistant Professor	B.E., Kon-Kuk University; B.S.Ed., The University of Georgia; M.S., Ph.D., The University of Wisconsin			

Appendix C. Faculty

Ullevig, Sarah	Associate Professor	B.S., Texas State University; Ph.D., The University of Texas Health Science Center at San Antonio
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Whitlock, Lance	Senior Lecturer	B.S., M.S., University of Arizona
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**Psychology**

Achorn, Eileen J.	Senior Lecturer	B.A., Ph.D., The University of Texas at Austin
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Baumann, Michael R.	Professor	B.A., Northwestern University; M.A., Ph.D., University of Illinois
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Bray, James H.	Professor	B.S., M.A., Ph.D, University of Houston
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Coyle, Thomas R.	Professor	B.A., M.A., Florida Atlantic University; Ph.D., University of Florida
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Eisenberg, Ann R.	Professor	B.A., M.A., Johns Hopkins University; Ph.D., University of California, Berkeley
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Fernandez, Ephrem	Professor	B.A., University of Western Australia; M.A., Miami University; Ph.D., The Ohio State University
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Fuhrman, Robert W.	Professor	B.A., St. Louis University; M.A., Ph.D., University of Illinois
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Garza, Raymond T.	Professor	B.A., M.A., Texas A&I University; Ph.D., Purdue University
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Golob, Edward J.	Professor	Ph.D., Dartmouth College
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Hale, Willie J.	Assistant Professor	B.A., Creighton University; M.S., Ph.D, The University of Texas at San Antonio
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Lopez, Stella D.	Associate Professor	B.A., Southern Methodist University; Ph.D., The University of Texas at Arlington
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Mangold, Deborah	Associate Professor	B.S., Johns Hopkins University; M.A., Loyola College in Maryland; Ph.D., Howard University
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McNaughton-Cassill, Mary E.	Professor	B.A., M.A., University of California, Santa Barbara; Ph.D., University of California, San Diego/San Diego State University
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Morissette, Sandra Baker	Professor	B.A., University of Vermont; M.A., Ph.D., Boston University
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Osman, Augustine	Professor	B.A., M.A., Ph.D., Western Virginia University
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Pillow, David R.	Professor	B.A., The University of Texas at Arlington; M.A., Ph.D., Arizona State University
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Romanowich, Paul	Assistant Professor	B.A., B.S., University of Florida; M.A., Ph.D., University of California, San Diego
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Ryan, Michael P.	Associate Professor	B.A., Pomona College; Ph.D., Stanford University
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Swan, Alicia A.	Assistant Professor	B.A., Purdue University; M.A., Ph.D., Southern Illinois University, Carbondale
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Weston, Rebecca	Associate Professor	B.A., The University of Texas at Austin; M.A., Ph.D., University of North Texas
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Zawacki, Tina	Associate Professor	B.S., Grand Valley State University; Ph.D., Wayne State University
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**Public Administration**

Alexander, Jennifer	Associate Professor	B.S., Georgetown University; M.S., Ph.D., Virginia Polytechnic Institute and State University
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Amatangelo, Gina	Associate Professor of Practice	B.A., Pennsylvania State University; M.P.A., The University of Texas at Austin, LBJ School of Public Affairs
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Demir, Tansu	Associate Professor	B.S., M.A., Hacettepe University; Ph.D., Florida Atlantic University
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Elias, Veronica	Assistant Professor	B.A., The National University of the South, Bahia Blanca, Argentina; M.A., Ph.D., The University of Akron
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Fernandez, Kandyce M.	Assistant Professor	B.A., University of Miami; M.A., Texas A&M University; Ph.D., Arizona State University
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Jaramillo, Patricia	Professor of Instruction	B.A., Southwestern University; M.P.Aff., The University of Texas at Austin; Ph.D., University of Colorado at Boulder
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Ponomariov, Branco L.	Associate Professor	B.A., Sofia University; M.A., Central European University; Ph.D., Georgia Institute of Technology
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Reddick, Christopher G.	Professor	B.A., M.A., M.B.A., University of Guelph; Ph.D., University of Sheffield
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Romero, Francine Sanders	Professor	B.A., California State University; M.A., Ph.D., University of California, Riverside
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Sanders, Heywood T.	Professor	A.B., Johns Hopkins University; Ph.D., Harvard University
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**Public Health**

Armendariz, Marina	Postdoctoral Fellow	B.A., California State University; M.S., Ph.D., Pennsylvania State University
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Baniya, Ganesh	Assistant Professor of Instruction	B.S., Truman State University; M.P.H., Lenoir-Rhyne University; Ph.D., University of North Texas
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BeLue, Rhonda	Professor	B.S., University of New Mexico; M.S., Ph.D., Cornell University
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Doyle, Melissa	Lecturer	B.S., University of Arkansas at Little Rock; M.S., University of Texas at San Antonio
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He, Meizi	Professor	B.S., M.S., Sun Yat-sen University of Medical Sciences, China; Ph.D., University of Hong Kong
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Howard, Jeffrey	Associate Professor	B.A., M.A., The University of Texas at Arlington; Ph.D., The University of Texas at San Antonio
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Lee, Jusung	Assistant Professor	B.S., Inje University; M.P.H., Yonsei University; M.H.A., University of North Texas; Ph.D., Texas A&M University
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Oswalt, Sara B.	Professor	B.S., The Pennsylvania State University; M.P.H., Indiana University; Ph.D., The University of Georgia
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Sileo, Katelyn	Assistant Professor	B.S., M.P.H., University of Connecticut, Ph.D., San Diego State University and University of California San Diego
Sosa, Erica	Professor	B.A., St. Mary's University; M.S., The University of Texas at San Antonio; Ph.D., Texas A&M University
Vazquez-Otero, Coralia	Assistant Professor	B.S., J.D., University of Puerto Rico; M.P.H., Ph.D., University of South Florida
Wallace, Erica	Senior Lecturer	B.S., M.P.H., Georgia Southern University
Wyatt, Tammy	Associate Professor	B.S., Sam Houston State University; M.Ed., Southwest Texas State University; Ph.D., The University of Texas at Austin
Yin, Zenong	Professor	B.S., Beijing Institute of Physical Education; M.A., Ph.D., University of Southern California

**Sociology**

Bartkowski, John P.	Professor	B.S., St. Mary's University; M.A., Ph.D., The University of Texas at Austin
Campbell, Favor	Senior Lecturer	B.A., M.S., University of Texas at San Antonio
Casso, Tamara	Lecturer	B.A., Texas A&M International University, M.S., University of Texas San Antonio
Denton, Melinda L.	Professor	B.A., Seattle Pacific University; M.A., Ph.D., University of North Carolina at Chapel Hill
Earnest, Terri	Associate Professor of Instruction	B.B.A., M.S., Ph.D., Mississippi State University
Ellison, Christopher G.	Professor	A.B., Ph.D., Duke University
Ford-Robertson, Joanne M.	Assistant Professor of Practice	B.S., M.S., The University of Texas at San Antonio
Garcia-Alexander, Ginny	Associate Professor	B.S., M.S., Ph.D., Texas A&M University
Hill, Terrence	Professor	B.A., Texas State University; M.A., Bowling Green State University; Ph.D., The University of Texas at Austin
Joyner, Kara	Professor	B.A., Beloit College; M.A., Ph.D., The University of Chicago
Miller, Donna	Senior Lecturer	B.S., M.S., University of Texas San Antonio
Miller, Michael V.	Associate Professor	B.S., M.S., Ph.D., Texas A&M University
Ruiz, Andrea L.	Assistant Professor	B.A., M.S., The University of Texas at San Antonio; Ph.D., The Pennsylvania State University
Swisher, Raymond	Professor	B.A., M.C.R.P., Ohio State University; M.A., Ph.D., University of North Carolina at Chapel Hill

Xu, Xiaohu	Professor	B.A., Sichuan University, PRC; M.A., Michigan State University, Ph.D., University of Michigan
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**College of Education and Human Development**

Name	Title	Education
Barnett, Bruce G.	Professor Emeritus	B.A., Arizona State University; M.A., Pepperdine University; Ph.D., University of California, Santa Barbara
Briscoe, Felecia	Associate Professor Emerita	B.S., M.A., University of Nevada, Las Vegas; Ed.D., University of Cincinnati
Clark, Ellen R.	Professor Emerita	B.A., Trinity University; M.A., The University of Texas at San Antonio; Ph.D., The University of Texas at Austin
Cook, Gillian E.	Professor Emerita	B.A., Sir George Williams University; Ed.M., Ed.D., Harvard University
Desjean-Perrotta, Blanche A.	Professor Emerita	B.A., Anna Maria College; M.Ed., Rhode Island College; M.Ed., University of Southern Alabama; Ed.D., University of Arizona
Dizinno, Gerry	Associate Professor Emeritus	B.S., State University College at New Paltz; M.S., Ph.D., Florida State University
Henkin, Roxanne	Professor Emerita	B.S., M.S., Ed.D., Northern Illinois University
Kessler, Carolyn L.	Professor Emerita	B.A., St. Mary-of-the-Woods College; M.S., Ph.D., Georgetown University
Martin, Nancy K.	Professor Emerita	B.A., M.Ed., Sam Houston State University; Ed.D., Texas Tech University
McGee, Patricia	Associate Professor Emerita	B.A., M.A., The University of Texas at San Antonio; Ph.D., The University of Texas at Austin
Milk, Robert D.	Professor Emeritus	B.A., M.A., Ph.D., Stanford University
Moseley, Christine A.	Professor Emerita	B.S., Texas Tech University; M.A., Angelo State University; Ph.D., Oklahoma State University
Méndez-Negrete, Josie	Professor Emerita	B.A.S.W., M.S.W., San Jose State University; M.A., Ph.D., University of California, Santa Cruz
Nora, Amaury	Professor Emeritus	B.A., The University of Texas at Austin; M.S., Texas A&M University-Kingsville; Ed.D., University of Houston
Oliva, Maricela	Associate Professor Emerita	B.A., Yale University; M.A., The University of Houston; Ph.D., The University of Texas at Austin
Orange, Carolyn M.	Professor Emerita	B.A., Harris Teachers College; M.A., Ph.D., Washington University
Padilla, Raymond V.	Professor Emeritus	B.A., University of Michigan; M.A., Ph.D., University of California, Berkeley



Appendix C. Faculty

Pate, P. Elizabeth	Professor Emerita	B.S., M.Ed., Angelo State University; Ph.D., Texas A&M University	Mejia, Joel Alejandro (Alex)	Associate Professor	B.S., The University of Texas at El Paso; M.S., University of Utah; Ph.D., Utah State University
Pérez, Bertha	Professor Emerita	B.S., M.Ed., Our Lady of the Lake University; Ed.D., University of Massachusetts Amherst	Smith, Howard L.	Professor	B.A., Temple University; Ph.D., The University of Arizona
Rendón, Laura	Professor Emerita	B.A., University of Houston; M.A., Texas A&M University-Kingsville; Ph.D., University of Michigan	Solís, Jorge L.	Associate Professor	A.B., Stanford University; Ph.D., University of California, Berkeley
Schutz, Paul A.	Professor Emeritus	B.A., B.S., Winona State University; M.Ed., University of Wisconsin-La Crosse; Ph.D., The University of Texas at Austin	Sánchez, Patricia	Professor	B.A., Rice University; M.A., The University of Texas at Austin; Ph.D., University of California, Berkeley
Smith, Page A.	Professor Emeritus	B.S., Wright State University; M.S., University of Dayton; M.A., Ph.D., The Ohio State University	Tian, Zhongfeng	Assistant Professor	B.A., Beijing Normal University-Hong Kong Baptist University United International College; Ed.M., Boston University; Ph.D., Boston College
Tafolla, Carmen	Professor Emerita	B.A., Texas Lutheran College; M.A., Austin College; Ph.D., The University of Texas at Austin	Treviño García, Claudia	Associate Professor of Instruction	B.A., M.A., Ph.D., The University of Texas at San Antonio
Wagener, James W.	Professor Emeritus	B.A., Southern Methodist University; M.A., Ph.D., The University of Texas at Austin	Trujillo, Armando L.	Associate Professor	B.S., M.Ed., The University of Texas at El Paso; M.A., University of Northern Colorado; Ph.D., The University of Texas at Austin
Winter, Suzanne	Associate Professor Emerita	M.S., Texas A&M University-Corpus Christi; Ph.D., The University of Texas at Austin	Yazan, Bedrettin	Associate Professor	B.A., M.A., Middle East Technical University, Ankara; Ph.D., University of Maryland
Wortham, Sue C.	Professor Emerita	B.S., University of Houston; M.A., Southwest Texas State University; Ph.D., The University of Texas at Austin	<b>Counseling</b>		
<b>Bicultural-Bilingual Studies</b>			Duffey, Thelma	Professor	B.A., M.Ed., Trinity University; M.A., Ph.D., St. Mary's University
Christiansen, Martha Sidury	Associate Professor	B.A., Universidad Veracruzana-Xalapa, Mexico; M.A., Indiana University-Purdue University Fort Wayne; Ph.D., The Ohio State University	Harrichand, John	Assistant Professor	M.A., Providence Theological Seminary; Ph.D., Liberty University
Ek, Lucila D.	Professor	B.A., Stanford University; Ph.D., University of California, Los Angeles	Herlihy, Barbara	Professor of Practice	A.B., M.Ed., Miami University; Ph.D., Northwestern University
Flores, Belinda B.	Professor	B.A., M.A., The University of Texas at San Antonio; Ph.D., The University of Texas at Austin	Interiano-Shiverdecker, Claudia	Assistant Professor	B.A., Ave Maria University, San Marcos, Nicaragua; M.S., Universidad Tecnológica, San Pedro Sula, Honduras; M.S., University of Wisconsin-Stout; Ph.D., University of North Carolina at Charlotte
Henderson, Kathryn	Associate Professor	B.A., Washington University in St. Louis; M.A., Framingham State College Campus Guadalajara; Ph.D., The University of Texas at Austin	Jones, Brenda L.	Clinical Assistant Professor	B.S., Alcorn State University; M.A., Ph.D., The University of Texas at San Antonio
Huang, Becky	Associate Professor	B.A., National Kaohsiung Normal University-Taiwan; M.Ed., Harvard University; M.A., Ph.D., University of California, Los Angeles	Juhnke, Gerald A.	Professor	B.A., Michigan State University; M.A., Central Michigan University; Ed.D., Western Michigan University, Kalamazoo
Kisselev, Olesya	Assistant Professor	B.A., M.A., Buryat State University, Russia; M.A., Portland State University; Ph.D., The Pennsylvania State University	Lloyd-Hazlett, Jessica	Associate Professor	B.A., University of Virginia; M.Ed., Ph.D., College of William and Mary
Langman, Juliet	Professor	B.S., Georgetown University; M.A., Ph.D., Stanford University	Prasath, Priscilla	Assistant Professor	M.S., Bharathiar University; Ph.D., Ohio State University
Lara, Gilberto	Assistant Professor	B.A., M.Ed., Boise State University; Ph.D., The University of Texas at Austin	Robertson, Derek	Associate Professor	B.S., M.Ed., Texas Tech University; Ph.D., College of William and Mary
Lindahl, Kristen M.	Associate Professor	B.A., M.A., Ph.D., University of Utah	Romero, Devon	Assistant Professor	M.A., Ph.D., University of Alabama
			Somody, Catherine F.	Clinical Associate Professor	B.S., Texas State University; M.Ed., Trinity University; Ph.D., The University of Texas at San Antonio

Trepal, Heather C.	Professor	B.A., The Ohio State University; M.Ed., Cleveland State University; Ph.D., Kent State University
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#### Educational Leadership and Policy Studies

Bahena, Sofia	Assistant Professor	B.A., Trinity University; Ed.M., Ed.D., Harvard University
Brewer, Curtis A.	Associate Professor	B.A., M.Ed., University of North Texas; Ph.D., The University of Texas at Austin
DeLeon, Abraham	Professor	B.S., New Mexico State University; M.A., Ph.D., University of Connecticut
Garcia-Louis, Claudia	Associate Professor	B.A., B.S., Oregon State University; M.A., Seattle University; Ph.D., The University of Texas at Austin
Garza, Jr., Encarnación	Professor	B.A., M.Ed., The University of Texas-Pan American; Ph.D., The University of Texas at Austin
Giles, Mark	Professor	B.A., University of Cincinnati; M.S., Miami University-Ohio; Ph.D., Indiana University
Gorordo, Guadalupe	Assistant Professor in Practice	B.A., St. Edward's University; M.Ed., Texas A&M International; Ph.D., Texas A&M University, College Station
Lac, Van	Associate Professor	B.A., University of California, Berkeley; M.A., Stanford University; Ph.D., University of Wisconsin-Madison
Merchant, Betty M.	Professor	B.S., M.S., State University of New York College at Plattsburgh; M.S., Ph.D., Stanford University
Morales, Socorro	Assistant Professor	B.A., University of California, Los Angeles; M.A., University of Illinois, Urbana-Champaign; Ph.D., University of Utah
Niño, Juan M.	Associate Professor	B.S., M.Ed., The University of Texas at Brownsville; Ph.D., Texas State University
Okilwa, Nathern	Assistant Professor	B.A., M.A., University of Wyoming; Ph.D., The University of Texas at Austin
Rodriguez-Andrade, Viviana	Assistant Professor	B.A., M.A., Universidad de Los Andes, Bogota, Colombia; Ph.D., Columbia University
Rodríguez, Mariela A.	Professor	B.A., M.Ed., Our Lady of the Lake University; M.Ed., The University of Texas at Brownsville; Ph.D., New Mexico State University
Sansone, Vanessa	Assistant Professor	B.A., St. Mary's University; M.Ed., Ed.D., The University of Texas at San Antonio
Thompson, David P.	Professor	B.S., M.S., Ph.D., Texas A&M University
Torres, Mario	Professor	B.A., M.A., The University of Texas at San Antonio; Ph.D., Pennsylvania State University

Villarreal, Michael	Assistant Professor in Practice	B.S., Texas A&M University, College Station; M.P.P., Harvard University; Ph.D., The University of Texas at Austin
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#### Educational Psychology

Castro-Villarreal, Felicia	Associate Professor	B.A., The University of Texas at San Antonio; M.S., St. Mary's University; Ph.D., Oklahoma State University
Davis, John L.	Associate Professor	B.A., The University of Texas at Austin; M.A., Texas State University; Ph.D., Texas A&M University
Guerra, Norma S.	Professor	B.A., Trinity University; M.A., The University of Texas at San Antonio; Ph.D., Texas A&M University
Karcher, Michael J.	Professor	B.A., Austin College; Ed.M., Ed.D., Harvard University; Ph.D., The University of Texas at Austin
Kirkpatrick, Marie	Assistant Professor	B.A., The University of Texas at San Antonio; M.A., Texas State University; Ph.D., Baylor University
MacNaul, Hannah	Assistant Professor	B.A., Texas State University; M.A., The University of Texas at San Antonio; Ph.D., University of South Florida
Neely, Leslie	Associate Professor	B.S., The University of Texas at Austin; M.Ed., Ph.D., Texas A&M University
Nichols, Sharon L.	Professor	B.A., Bucknell University; M.A., Ph.D., The University of Arizona
Sullivan, Jeremy R.	Professor	B.S., Sam Houston State University; Ph.D., Texas A&M University
Thacker, Ian	Assistant Professor	B.A., University of Colorado, Boulder; M.A., University of California, Berkeley; M.S., Ph.D., University of Southern California
Villarreal, Victor	Associate Professor	B.A., University of Notre Dame; Ph.D., Texas A&M University

#### Interdisciplinary Learning and Teaching

Alanís-York, Iliana	Professor	B.A., The University of Texas at Austin; M.Ed., The University of Texas-Pan American; Ph.D., The University of Texas at Austin
Arreguín, María	Professor	B.A., Universidad Autónoma de Nuevo Leon; M.Ed., The University of Texas-Pan American; Ed.D., Texas A&M University-Kingsville
Bonner, Emily P.	Professor	B.A., M.A.T., Trinity University; Ph.D., University of Florida
Boon, Richard T.	Professor	B.S., M.S., Purdue University; Ph.D., George Mason University
Carmona-Dominguez, Guadalupe D.	Professor	B.Sc., Instituto Tecnológico Autónomo de México (ITAM); M.Sc., Centro de Investigaciones y de Estudios Avanzados del Instituto Politécnico Nacional (Cinvestav-IPN); Ph.D., Purdue University

Appendix C. Faculty

Clark, Langston	Associate Professor	B.S., North Carolina Agricultural and Technical State University; M.A., The Ohio State University; Ph.D., The University of Texas at Austin	Popielarz, Kaitlin E.	Assistant Professor	B.A., M.A., Michigan State University; Ph.D., Wayne State University
DeJulio, Samuel	Assistant Professor	B.S., Emporia State University; M.Ed., Texas State University; Ph.D., The University of Texas at Austin	Ramirez, Rica	Assistant Professor	B.S., Texas State University; M.Ed., The University of Texas-Pan American; Ph.D., University of South Florida
Emenaha, Uchenna	Assistant Professor	B.S., Houston Baptist University; M.Ed., Texas Southern University; Ph.D. (ABD), University of Houston	Ryan, Ann Marie	Professor	B.A., Loyola University Chicago; M.A., Seattle University; Ph.D., University of Illinois at Chicago
Ewoldt, Kathy B.	Assistant Professor	B.S., Park University; M.Ed., Ph.D., University of Nevada Las Vegas	Sanders, Rachel Kaminski	Assistant Professor	B.A., Florida State University; M.A.T., Clemson University; Ph.D., The University of Georgia
Farias-Sokoloski, Tiffany	Associate Professor of Instruction	B.A., M.A., Ph.D., The University of Texas at San Antonio	Sohn, Lucinda N.	Assistant Professor of Instruction	B.S., Texas A&I University; M.S., Ph.D., Texas A&M University-Corpus Christi
Fies, Carmen H.	Associate Professor	B.S., M.S., The University of Texas at San Antonio; Ph.D., The University of Texas at Austin	Sutterby, John A.	Associate Professor	B.S., M.A., Ph.D., The University of Texas at Austin
Haddad, Zaid M.	Associate Professor of Instruction	B.A., M.Ed., Ph.D., University of Nevada, Las Vegas	Swoyer, Jennifer G.	Associate Professor of Instruction	B.A., Loyola College in Baltimore; M.A., Immaculata College; Ph.D., The University of Texas at San Antonio
Harmon, Janis	Professor	B.A., M.Ed., University of Southwest Louisiana; Ph.D., The Ohio State University	Vielma, Karina Ivette	Joint Assistant Professor	B.S., Massachusetts Institute of Technology; M.Ed., Harvard University; Ed.D., The University of Texas at San Antonio
Horowitz, Rosalind	Professor	B.S., M.A., Ph.D., University of Minnesota	Yuen, Timothy T.	Joint Professor	B.S., University of California, Irvine; M.S., University of Southern California; Ph.D., The University of Texas at Austin
Kalinec-Craig, Crystal A.	Associate Professor	B.S., University of Houston; M.S., Texas A&M University; Ph.D., University of Arizona	<b>Race, Ethnicity, Gender, and Sexuality Studies</b>		
Leija, María G.	Assistant Professor	B.A., M.Ed., Boise State University; Ph.D., The University of Texas at Austin	Alemán, Sonya M.	Associate Professor	B.A., St. Mary's University; M.A., The University of Texas at Austin; Ph.D., University of Utah
Li, Yi-Fan	Assistant Professor	B.S., National Changhua University of Education; M.A., National Taiwan Normal University; Ph.D., Texas A&M University	Cervantes, Marco	Associate Professor	B.A., University of Houston-Downtown; MA., Ph.D., The University of Texas at San Antonio
Lima, Cynthia E.	Assistant Professor	B.A., Universidad Nacional Autónoma de México; M.A., Ph.D., The University of Texas at Austin	Cruz, Rachel	Assistant Professor	B.A., The University of Notre Dame; M.A., D.M.A., The University of Texas at Austin
Marone, Vittorio	Associate Professor	B.A., M.A., Ph.D., Ca' Foscari University of Venice; Ph.D., University of Padua and University of Tennessee	Elenes, C. Alejandra	Professor	B.A., Universidad de Monterrey; M.A., Ph.D., University of Wisconsin-Madison
Martinez, Miriam G.	Professor	B.A., University of Alabama; M.A., Ph.D., The University of Texas at Austin	Harris, Jasmine	Associate Professor	B.A., Vassar College; M.S., Syracuse University; Ph.D., University of Minnesota
Muñoz, Marissa	Assistant Professor	B.S., M.S., Texas A&M University; Ph.D., University of British Columbia	Mendoza, Sylvia	Assistant Professor	B.J., The University of Texas at Austin; M.A., The University of Texas at San Antonio; Ph.D., University of Utah
Ndimande, Bekisizwe S.	Professor	B.Ed., University of Durban-Westville, South Africa; M.Ed., University of Massachusetts Amherst; Ph.D., University of Wisconsin-Madison	Perry, Marc	Associate Professor	B.A., Vassar College; M.A., Ph.D., The University of Texas at Austin
Ortiz, Araceli Martinez	Joint Professor	B.S., M.A., The University of Michigan; M.S., Kettering University; Ph.D., Tufts University	Saldaña, Lilliana P.	Associate Professor	B.A., Boston University; M.A., The University of Texas at San Antonio; Ph.D., University of Wisconsin-Madison

## College of Liberal and Fine Arts

Name	Title	Education
Allan, Diana	Professor Emerita	B.M., B.M.E., Pittsburgh State University; M.A., Stephen F. Austin State University; D.M.A., The University of Texas at Austin
Allen, Mark E.	Professor Emeritus	B.A., St. Norbert College; M.A., Arizona State University; Ph.D., University of Illinois
Almaráz, Jr., Félix D.	Professor Emeritus	B.A., M.A., St. Mary's University; Ph.D., University of New Mexico
Balentine, James S.	Professor Emeritus	B.A., M.M., University of South Carolina; D.M.A., The University of Texas at Austin
Binks, Ronald C.	Professor Emeritus	B.F.A., Rhode Island School of Design; M.F.A., Yale University
Boyd, Steven R.	Professor Emeritus	B.A., Claremont McKenna College; M.A., Ph.D., University of Wisconsin-Madison
Broderick, James A.	Professor Emeritus	B.A., St. Ambrose College; M.A., University of Iowa
Cantú, Norma E.	Professor Emerita	B.S., M.S., Texas A&I University; Ph.D., University of Nebraska
Craven, Alan E.	Professor Emeritus	B.A., M.A., Ph.D., University of Kansas
Daniels, Bruce C.	Professor Emeritus	A.B., Syracuse University; M.A., Ph.D., University of Connecticut
Daydi-Tolson, Santiago	Professor Emeritus	Licenciado en Filosofía y Educación, Universidad Católica de Valparaíso, Chile; Ph.D., University of Kansas
Dowdy, Eugene	Professor Emeritus	B.M., The University of Texas at Austin; M.M., The University of Texas at San Antonio; D.M.A., University of Iowa
Dunne, Matthew	Professor Emeritus	B.M., State University College of New York; M.M., Florida State University; D.M.A., The University of Texas at Austin
Durand, Francisco	Professor Emeritus	B.A., M.A., Pontificia Universidad Católica de Peru; Ph.D., University at California, Berkeley
Ehardt, Carolyn L.	Professor Emerita	B.S., Virginia Commonwealth University; M.A., Ph.D., The University of Texas at Austin
Field, Charles T.	Professor Emeritus	B.A., Stanford University; M.F.A., University of Washington
Garcia, MaryEllen	Associate Professor Emerita	B.A., Occidental College; M.A., Indiana University; Ph.D., Georgetown University
Gelo, Daniel J.	Professor Emeritus	B.A., M.A., M.Phil., Ph.D., Rutgers University
Gibbs, Beverly J.	Professor Emerita	B.A., M.A., University of Michigan; Ph.D., University of Wisconsin-Madison
Henderson, Dwight F.	Professor Emeritus	B.A., M.A., Ph.D., The University of Texas at Austin
Johnson, David R.	Professor Emeritus	B.A., University of Illinois; M.A., Ph.D., University of Chicago
Linard, Rita	Associate Professor Emerita	B.A., M.M., University of Northern Illinois; D.M.A., The University of Texas at Austin
Little, Ken D.	Professor Emeritus	B.F.A., Texas Tech University; M.F.A., The University of Utah
Lundy, Eileen	Associate Professor Emerita	B.A., College of St. Teresa; M.A., Ph.D., The University of Texas at Austin
Lyons, Bonnie K.	Professor Emerita	B.A., M.A., Ph.D., Tulane University
Mabry, Gary L.	Professor Emeritus	B.M.Ed., Abilene Christian University; M.M., Hardin Simmons University; D.M.A., University of Colorado
Marcos Marín, Francisco	Professor Emeritus	B.A., Universidad de Granada; M.A., Universidad Complutense de Madrid; Ph.D., Universidad Complutense de Madrid
Morris, Jr., John M.	Professor Emeritus (posthumous)	B.A., M.A., M.S., Ph.D., The University of Texas at Austin
Nummikoski, R. Marita	Professor Emerita	B.A., M.A., Helsinki University; Ph.D., The University of Texas at Austin
Poetschke, Linda A.	Professor Emerita	B.M., University of North Texas; M.M., The University of Texas at Austin
Reynolds, John F.	Professor Emeritus	B.A., M.A., Michigan State University; Ph.D., Rutgers University
Rush, Kent T.	Professor Emeritus	B.F.A., California College of Arts and Crafts; M.A., The University of New Mexico; M.F.A., The University of Texas at Austin
Rustowicz, Robert	Associate Professor Emeritus	B.M.E., Central Michigan University; M.M., D.M.A., University Cincinnati
Schneider, James	Associate Professor Emeritus	B.A., St. Lawrence University, M.A., Ph.D., University of Wisconsin-Madison
Sebald, David	Professor Emeritus	B.M., M.M., Ph.D., Michigan State University
Silantien, John J.	Professor Emeritus	B.M.E., Hartt College of Music; M.M., Catholic University of America; D.M.A., University of Illinois
Sobré, Judith B.	Professor Emerita	B.A., New York University; M.A., Ph.D., Harvard University
Urdaneta, Maria-Luisa	Professor Emerita	B.A., M.A., The University of Texas at Austin; Ph.D., Southern Methodist University
Wickham, Christopher	Professor Emeritus	B.A., M.Phil., University of Reading, England; Ph.D., University of Wisconsin-Madison
Woodson, Linda T.	Professor Emerita	B.S., Ph.D., Texas Christian University

### Anthropology

Appendix C. Faculty

Bartlett, Thad Q.	Professor	B.A., Grinnell College; M.A., Ph.D., Washington University	Giberga, Ovidio C.	Associate Professor	B.S., Florida State University; M.F.A., University of Florida
Bria, Rebecca Elizabeth	Assistant Professor	B.A., Northern Illinois University; M.A., Northern Illinois University; Ph.D., Vanderbilt	Graybill, Garry	Assistant Professor	B.F.A., The University of North Texas; M.F.A., The University of Texas at Austin
Brown, M. Kathryn	Professor	B.A., Southwest Texas State University; M.A., The University of Texas at San Antonio; M.A., Ph.D., Southern Methodist University	Johnson, Julie	Associate Professor	B.A., Northern Illinois University; M.A., University of Iowa; Ph.D., University of Chicago
Campos, Fernando A.	Assistant Professor	B.S., California Institute of Technology; M.A., Ph.D., University of Calgary	Lawrence, Jane	Senior Lecturer	B.F.A., M.F.A., The University of Texas at San Antonio
Cepek, Michael	Professor	B.A., University of Illinois at Urbana-Champaign; M.A., Ph.D., University of Chicago	Masten, Kristy	Senior Lecturer	B.A., Arizona State University; M.A., Ph.D., The University of Texas at San Antonio
Flaherty, Devin	Assistant Professor	B.A., University of California, San Diego; M.A., Ph.D., University of California, Los Angeles	McCoin, Mark H.	Associate Professor	B.S., University of Colorado at Denver; M.F.A., University of Colorado at Boulder
Fleuriet, K. Jill	Professor	B.A., Harvard University; M.A., San Diego State University; M.A., Ph.D., Stanford University	Monseau, Michele A.	Lecturer II	B.F.A., Youngstown State University; M.F.A., The University of Texas at San Antonio
Gallagher, Patrick M.	Assistant Professor	B.A., Columbia University; M.A., Ph.D., Stanford University	Mora, Juan	Senior Lecturer	B.A., B.F.A., M.F.A., The University of Texas at San Antonio
Halvaksz II, Jamon A.	Associate Professor	B.A., University of Kentucky; M.A., Ph.D., University of Minnesota	Renteria, Andrei A.	Senior Lecturer	B.F.A., Sul Ross State University; M.F.A., The University of Texas at San Antonio
Hamilton, Marcus J.	Associate Professor	B.S., University College London, England; M.S., Ph.D., University of New Mexico	Rowe, Elizabeth	Associate Professor	B.F.A., University of Northern Iowa; M.F.A., Syracuse University
Hard, Robert J.	Professor	B.A., University of Arizona; M.A., Ph.D., University of New Mexico	Saenz, Humberto	Assistant Professor	B.A., The University of Waco; M.A., M.F.A., The University of Dallas
Kosiba, Steve	Associate Professor	B.A., University of South Florida; M.A., Ph.D., University of Chicago	Sherer, Scott	Professor	B.A., Yale University; M.A., University of Kentucky, Lexington; Ph.D., University of Minnesota, Minneapolis
Levi, Laura J.	Associate Professor	B.A., Bryn Mawr College; Ph.D., University of Arizona	Wiersema, Juliet B.	Associate Professor	B.A., University of the Pacific; M.A., Institute of Fine Arts, New York University; Ph.D., University of Maryland
Moon, Deborah E.	Professor of Instruction	B.A., M.A., The University of Texas at San Antonio	Willome, Jason P.	Senior Lecturer	B.F.A., The University of Texas at Austin; M.F.A., University of Colorado at Boulder
Pozzi, Luca	Associate Professor	B.S., M.S., University of Torino, Italy; Ph.D., New York University	<b>Communication</b>		
Wikberg, Eva C.	Assistant Professor	M.S., Umeå University, Sweden; Ph.D., University of Calgary	Acosta, Jessica	Lecturer	B.A., University of Texas at San Antonio; M.A., University of Texas at San Antonio
Yaeger, Jason	Professor	B.A., University of Michigan; Ph.D., University of Pennsylvania	Becker, Jennifer	Associate Professor	B.A., Winona State University; M.A., Ball State University; Ph.D., University of Oklahoma
<b>Art and Art History</b>			Cavitt, Sierra	Lecturer	B.A., Belhaven University; M.A., University of Texas at San Antonio
Armendariz, Richard	Professor	B.F.A., The University of Texas at San Antonio; M.F.A., University of Colorado at Boulder	Daas, Karen	Associate Professor	B.A., Gustavus Adolphus College; M.A., Minnesota State University; Ph.D., University of Nebraska, Lincoln
Blizard, Christie L.	Associate Professor	B.F.A. Indiana University; M.F.A., Georgia State University	Dalglish, James	Lecturer	B.A., The University of Texas at Austin; M.A., University of the Incarnate Word
Bodden, Laura B.	Lecturer II	M.F.A., Maine College of Art	Denney, Ashley	Assistant Professor of Practice	B.A., M.A., Kansas State University
de Dios Mora, Juan	Senior Lecturer	B.F.A., B.A., M.F.A., The University of Texas at San Antonio			
Eckmann, Teresa	Associate Professor	B.A., University of Massachusetts; Ph.D., University of New Mexico			
Elliott, Gregory M.	Professor	B.F.A., M.A., Stephen F. Austin State University; M.F.A., Southern Methodist University			



DeTurk, Sara	Professor	B.A., University of Virginia; M.Ed., University of Massachusetts Amherst; Ph.D., Arizona State University	Oliver, Laura	Lecturer III	B.A., Texas A&M University; M.A., University of North Texas
Dixson, Mary	Professor of Instruction	B.A., Augustana College; M.A., Texas A&M University, College Station; Ph.D., The University of Texas at Austin	Passalacqua, Stacey	Assistant Professor	B.A., University of California, Santa Barbara; M.A., Purdue University; Ph.D., University of Arizona
Eise, Jessica	Assistant Professor	B.A., Saint Louis University; M.A., New York University; Ph.D., Purdue University	Ring, LesLeigh	Assistant Professor of Practice	B.A., Tarleton State University; M.A., Texas State University
Hajek, Christopher	Professor	B.A., Loyola University; M.A., University of Hawaii; Ph.D., University of California, Santa Barbara	Rios, A. Mario	Senior Lecturer	B.A., The University of Texas at San Antonio; M.A., Texas State University-San Marcos
Harris, Kenneth	Lecturer III	B.A., Western Kentucky University; M.Div., Mid-America Baptist Theological Seminary; Ph.D., Indiana University	Sobre, Miriam	Associate Professor of Instruction	B.A., The University of Puget Sound; M.A., The University of Texas at Austin; Ph.D., Arizona State University
Johnson, Christian	Lecturer	BA., M.A., The University of Texas at San Antonio	Tokunaga, Robert	Associate Professor	B.A. and M.A., University of Hawai'i at Mānoa; Ph.D., University of Arizona
Kang, Seok	Professor	B.A., Sungkyunkwan University, Seoul, Korea; M.A., Sogang University, Seoul, Korea; M.A., Illinois State University; Ph.D., University of Georgia	West, Richard	Senior Lecturer	B.A., Morris Harvey College; M.A., Sangamon State University
Kanso El-Ghori, Ali	Professor	B.A., Lebanese University; M.S., Ph.D., Ohio University	Wright, Charles	Associate Professor of Practice	B.S., M.A., West Texas State University
Khan, Shamshad	Associate Professor	B.A., Aligarh University, Aligarh, India; M.A., M.Phil., Jawaharlal Nehru University, New Delhi, India; Ph.D., Simon Fraser University	Zhang, Juyan	Professor	B.L., Renmin University of China; M.L., Beijing University; Ph.D., University of Missouri-Columbia
Kline, Kimberly	Professor	B.A., Kennesaw State University; M.O.C., Georgia State University; Ph.D., University of Georgia	<b>English</b>		
LeBlanc III, H. Paul	Professor	B.A., St. Mary's University; M.A., Louisiana State University; Ph.D., Southern Illinois University	Adamina, Maia	Assistant Professor of Practice	M.A., University of Texas at San Antonio
Levitt, Steven R.	Professor	B.A., Montana State University; M.A., West Virginia University; Ph.D., The Ohio State University	Barker, Wendy B.	Professor	B.A., M.A., Arizona State University; Ph.D., University of California, Davis
Lewis, Laurie	Professor	B.A., University of Washington; M.A., University of Illinois; Ph.D., University of California at Santa Barbara	Bayer, Mark A.	Associate Professor	B.A. (Hons), Queen's University; M.A., McGill University; Ph.D., The Ohio State University
Madden, Marina "Red"	Assistant Professor of Instruction	B.F.A., Texas State University; M.F.A., Savannah College of Art and Design	Drinka, Bridget A.	Professor	B.A., University of Illinois at Urbana-Champaign; M.S., Georgetown University; Ph.D., The University of Texas at Austin
Mahood, Charles (Chad)	Associate Professor	B.A., M.A., The Pennsylvania State University; Ph.D., University of California, Santa Barbara	Fonzo, Kimberly	Assistant Professor	B.A., Hanover College; M.A., Ph.D., University of Illinois at Urbana-Champaign
McDonald, Jamie	Associate Professor	B.S., M.S., Universite de Montreal; Ph.D., University of Colorado, Boulder	Garza, Kimberly	Assistant Professor	B.A., M.A., The University of Texas at Austin; Ph.D., University of North Texas
McPherson, Ryan	Associate Professor of Practice	B.A., M.A., Texas State University-San Marcos	Hum, Sue	Professor	B.A., Park College; Ph.D., Texas Christian University
			Kellman, Steven G.	Professor	B.A., State University of New York at Binghamton; M.A., Ph.D., University of California, Berkeley
			Moody, Joycelyn K.	Professor	B.A., Spring Hill College; M.A., University of Wisconsin-Madison; Ph.D., University of Kansas
			Nerio, Magdalena (Maggie)	Senior Lecturer	B.A., Brown University; Ph.D., University of Notre Dame
			Portillo, Annette	Associate Professor	B.A., University of California, San Diego; M.A., Ph.D., Cornell University

Appendix C. Faculty

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Saldívar-Hull, Sonia	Professor	B.A., University of Houston; M.A., Ph.D., The University of Texas at Austin	Hardgrove, Anne	Associate Professor	B.A., Carleton College; Ph.D., University of Michigan
Schoellman, Stephanie	Senior Lecturer	B.A., M.A., Ph.D., The University of Texas at San Antonio	Hicks, Lesli	Assistant Professor in Practice	B.A., James Madison University; M.A., Virginia Tech; Ph.D., Florida State
Sinanan, Kerry	Assistant Professor	B.A. (Hons), Ph.D., Trinity College, Dublin	Kelly, Patrick J.	Associate Professor	B.A., The University of Texas at Austin; Ph.D., New York University
Vance, David Ray	Associate Professor	B.A., The University of Texas at Austin; M.A., University of Illinois at Chicago; Ph.D., University of Houston	Komisaruk, Catherine	Associate Professor	M.A., Ph.D., University of California, Los Angeles
Walker, Kenneth	Associate Professor	B.A., University of California, Davis; M.A., University of Nevada, Reno; Ph.D., University of Arizona	Konove, Andrew	Associate Professor	B.A., Haverford College; M.A., M.Phil., Ph.D., Yale University
<b>History</b>			Michel, Gregg	Associate Professor	B.A., University of Chicago; M.A., Ph.D., University of Virginia
Atabey, Ali	Assistant Professor	B.A., Middle East Technical University; M.A., Sabanci University; Ph.D, University of Arizona	Minten, Rhonda	Assistant Professor in Practice	B.A., M.A., The University of Texas at San Antonio
Baumgardner, Neel	Senior Lecturer	B.A., University of Texas at Austin; M.B.A., Southern Methodist University; Ph.D, The University of Texas at Austin	Ng, Wing Chung	Professor	B.A., M.Phil., University of Hong Kong; Ph.D., University of British Columbia
Carr-Shanahan, John	Lecturer I	B.A., M.A., The University of Texas at San Antonio	Nolan-Ferrell, Catherine	Associate Professor	B.A., Cornell University; M.A., Tulane University; Ph.D., The University of Texas at Austin
Clinton, Catherine	Denman Endowed Professor	A.B., Harvard University; M.A., University of Sussex; Ph.D., Princeton University	Peterson, Jodi	Assistant Professor of Instruction	B.A., Utah State University; M.A., The University of Texas at San Antonio; M.A., University of the Incarnate Word
Crosson, Andria	Assistant Professor in Practice	B.A., M.A., The University of Texas at San Antonio	Reynolds, Jack	Professor Emeritus	B.A., M.A., Michigan State University, Ph.D., Rutgers University
Davies, Brian L.	Professor	B.A., M.A., Ph.D., University of Chicago	Turney, Elaine P.	Associate Professor in Practice	B.A., Baylor University; M.A., The University of Texas at San Antonio; Ph.D., Texas Christian University
Dilley, Jennifer	Associate Professor of Instruction	B.A., Texas A&M University-Corpus Christi; M.A., The University of Texas at San Antonio	Valerio-Jiménez, Omar S.	Professor	S.B., Massachusetts Institute of Technology; M.A., Ph.D., University of California, Los Angeles
Ermus Gibson, Cindy	Assistant Professor	B.A., Florida International University; M.A., Ph.D., Florida State University	<b>Modern Languages and Literatures</b>		
Felipe-Gonzalez, Jorge	Assistant Professor	B.A., University of Havana; Ph.D., Michigan State University	Cano, Lilian	Lecturer III	B.A., M.A., The University of Texas at San Antonio
Gardner, Kirsten	Associate Professor	B.A., Georgetown University; M.A., Ph.D., University of Cincinnati	Chapman, Andrew	Director	B.A., University of Rochester; M.A., Ph.D., University of Pittsburgh
Gibson, Abraham	Assistant Professor	B.A., James Madison University; M.A., Virginia Tech; Ph.D., Florida State	Chappell, Whitney L.	Associate Professor	B.A., University of Illinois; M.A., Northern Illinois University; Ph.D., The Ohio State University
González, Gabriela	Associate Professor	B.S., The University of Texas at Austin; M.A., The University of Texas at San Antonio; M.A., Ph.D., Stanford University	Contreras Rios, Isaura	Assistant Professor	B.A., Universidad de Guanajuato; M.A., Universidad Nacional Autónoma de México; Ph.D., University of California Los Angeles
González III, Jerry Barton	Associate Professor	B.A., California State University, Fullerton; M.A., Ph.D., University of Southern California	De Paula, Matias	Lecturer	B.A., Instituto Privado Carlos Linneo; M.A., West Virginia University
Gray, LaGuana Katchet	Associate Professor	B.A., University of Houston; M.A., Louisiana Tech University; Ph.D., University of Houston	Donohue-Bergeler, Devon	Senior Lecturer	B.A., Boston University; M.A., Technische Universität Dresden; Ph.D., The University of Texas at Austin
			Fukuda, Makiko	Senior Lecturer	B.A., Hokusei Gakuen University; M.A., Ph.D., Purdue University

Gember, Corey	Lecturer	M.A., McDaniel College	Ward, Liang	Assistant Professor	B.A., National Kaohsiung Normal University; M.A., Arkansas Tech University; Ed.D., Texas A&M University- Kingsville
Gong, Deukhee	Associate Professor	B.S., M.S., Ewha Woman's University; M.A., Kyung Hee University; M.A., The University of Texas at San Antonio; Ph.D., University of Georgia	Yu, Mimi	Lecturer III	B.A., Fu-Jen University, Taiwan; M.A., University of Wisconsin
Granados, Oholibama	Lecturer	M.A., Texas A&M International University	Zaldivar, Molly	Senior Lecturer	B.A., Middlebury College; M.A., Boston College; M.A., Ph.D., The University of Texas at Austin
Hall, Isabelle	Senior Lecturer	B.A., M.A., Brigham Young University	<b>Music</b>		
Hernandez, Nelson	Lecturer	M.A., The University of Texas at San Antonio	Acevedo, Michael	Lecturer	B.M., Texas A&M University Kingsville; M.M., The University of Texas at Austin
Himmelblau, Jack	Professor	A.B., M.A., University of Chicago; Ph.D., University of Michigan	Baker, Sherri	Assistant Professor of Practice	B.M., M.M., Southern Illinois University Edwardsville
Juarez, Ana	Lecturer	M.A., The University of Texas at San Antonio	Beavers, Jennifer	Associate Professor	B.M., Georgia State University; M.M., Ph.D., The University of Texas at Austin
Kim, Hyewon	Senior Lecturer	B.S., Sung Shin Women's University; M.S., Kyung Hee University	Bergmann, Andrew	Associate Professor of Instruction	B.A., Brown University; Muziek 2e Fase, Conservatorium van Amsterdam; Ph.D., University of Minnesota Twin Cities
Maltseva, Anastasia	Lecturer	B.A., Barnaul State Pedagogical University; M.A., Altai State University	Breithaupt, Peter	Lecturer	B.M., M.A., Western Michigan University; M.M., University of Illinois at Urbana-Champaign
Membrez, Nancy J.	Associate Professor	B.A., College of Wooster; M.A., University of Minnesota; Ph.D., University of California, Santa Barbara	Brill, Mark	Associate Professor	B.A., Oberlin College; M.A., Tulane University; J.D., Loyola University; Ph.D., University of California, Davis
Oleszkiewicz, Malgorzata	Professor	B.A., M.A., Queens College; Ph.D., New York University	Bustos, Isaac	Associate Professor of Instruction	B.M., University of New Hampshire; M.M., D.M.A., The University of Texas at Austin
Olvera, Elizabeth	Senior Lecturer	M.A., The University of Texas at San Antonio	Caploe, Joseph	Lecturer	B.A., California State University; M.F.A., California Institute of the Arts
Ozaki, Naoko	Assistant Professor of Practice	B.A., University of Arizona; M.S., Indiana University; Ph.D., Indiana University	Castle, Jeffrey	Assistant Professor of Practice	B.M., University of Massachusetts Amherst; M.M., William Marsh Rice University
Piedad, Flores	Senior Lecturer	M.A., University of Texas at San Antonio	Cherry, Nicole	Assistant Professor	B.M., University of Maryland; M.M., The Juilliard School; D.M.A., Texas Tech University
Requena, Pablo	Assistant Professor	B.A., Universidad Nacional de Córdoba; M.A., Pennsylvania State University; Ph.D., Pennsylvania State University	Councilor, Nicholas	Assistant Professor of Practice	B.M., Eastern Michigan University; M.M., D.M.A., The University of Texas at Austin
Richardson, Nathan	Professor	B.A., M.A., Brigham Young University; Ph.D., University of Kansas	Cowden, Tracy	Professor	B.M., Western Michigan University; M.M., D.M.A., Eastman School of Music
Rocha, Adam	Assistant Professor of Practice	B.S., University of Texas at Austin	Davis, Stacey	Professor	B.M., Arizona State University; M.M., Ph.D., Northwestern University
Rushforth, Michael D.	Senior Lecturer	B.A., M.A., Brigham Young University; M.S., Ph.D., University of Southern California	Dawkins, Allyson	Associate Professor of Practice	B.F.A., State University of New York at Purchase; M.M., University of Rochester Eastman School of Music
Thorsen, Elise	Lecturer	B.A., College of William and Mary; M.A., University of Pittsburg; Ph.D., University of Pittsburg	Dill, Susan	Associate Professor	B.M., South Illinois University; M.M., Ph.D., University of North Texas
Turner, Gilberta	Lecturer	B.A., M.A., The University of Texas at San Antonio	El-Farrah, Rami	Associate Professor of Instruction	B.M., California State University, Fullerton; M.M., D.M.A., The University of Texas at Austin
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Appendix C. Faculty

Ellis, Ron	Associate Professor	B.A., University of Central Florida; M.M., University of South Florida	Pellegrino, Kristen	Professor	B.M., Eastman School of Music; M.M., Ph.D., University of Michigan
Espinoza, Gerardo	Lecturer	B.M., Texas A&M Kingsville; M.M., Texas State University	Peters, Troy	Assistant Professor of Practice	B.M., Curtis Institute of Music; M.A., University of Pennsylvania
Howell, Jourdan Laine	Associate Professor of Practice	B.M., M.M., The University of Texas at San Antonio; D.M.A., University of North Carolina Greensboro	Pietri, Michelle	Lecturer	B.A., University of New Orleans; M.F.A., Tulane University
Hurd, Ivan	Assistant Professor	A.A., North Iowa Community College; B.M., University of Iowa; M.M., Eastern Michigan University; D.M.A., University of Oklahoma	Poffenbarger, Gary	Assistant Professor of Practice	B.M., Arkansas State University; M.M., Boston University
Jarrell-Johnson, Crystal	Associate Professor of Practice	B.M., Abilene Christian University; M.M., Indiana University	Redzic, Zlatan	Lecturer	B.M., Indiana University
Johnston, Sean	Senior Lecturer	B.A., University of Missouri-Columbia; M.M., Florida State University; Ph.D., The University of Texas at Austin	Rubins, Peter	Associate Professor of Practice	B.F.A., Carnegie Mellon University; M.M., The University of Texas at Austin
Keeling, Kasandra	Professor	B.M., M.M., University of Houston; D.M.A., University of Colorado at Boulder	Rubins, Sherry	Professor of Practice	B.A., Western Illinois University; M.M., The University of Texas at San Antonio
Kelly, Laura L.	Professor of Instruction	B.M., University of Nebraska at Lincoln; M.M., DePaul University; Ph.D., The University of Texas at Austin	Rulewicz, Megan	Associate Professor of Instruction	B.A., Brigham Young University; M.F.A., The University of Utah
Lloyd, S. Andrew	Assistant Professor	B.M., Brigham Young University; M.M., University of Kansas; D.M.A., University of North Texas	Schneeman, Eric	Lecturer	B.A., University of California Santa Cruz; M.M., The University of Texas at Austin; Ph.D., University of Southern California
McCrary, William	Associate Professor	B.M., University of Montana, Missoula; M.M., San Francisco State University; D.A., University of Northern Colorado	Sherrill, William	Lecturer	B.M., The University of Texas at San Antonio; M.M., Ph.D., The University of Texas at Austin
Miles, Randi	Lecturer	B.S., Texas State University; M.F.A., Arizona State University	Stephen, J. Drew	Associate Professor	B.M., University of Western Ontario; Diploma, Aufbaustudium Staatliche Hochschule für Musik, Freiburg; M.A., M.M., Ph.D., University of Toronto
Millican, Si	Professor	B.M., M.M.E., University of North Texas; Ph.D., University of Oklahoma	Syler, James	Lecturer	B.M., Northern Illinois University; M.M., University of Miami
Muhn, Yoo Jin	Assistant Professor	B.A., SookMyung Women's University; M.M., College-Conservatory of Music of University of Cincinnati; M.M., Westminster Choir College of Rider University; D.M.A., University of Southern California	Villanueva, Christopher	Lecturer	B.A., M.M., University of North Texas
Murphy, James Ryan	Lecturer	B.M., The Cleveland Institute of Music; M.M., The Juilliard School	Webber, Erin	Senior Lecturer	B.M., Western Kentucky University; M.M., Arizona State University
Nix, John	Professor	B.M., University of Georgia; M.Mus.Ed., Florida State University; M.M., University of Colorado at Boulder; Certificate of Vocology, University of Iowa	West, Chad	Associate Professor of Instruction	B.M., Arizona State University; M.M., University of Georgia; Ph.D., University of Michigan
Olson, Susan	Associate Professor	B.M., Capital University Conservatory of Music; M.M., D.M.A., The Ohio State University	Westney, Stephanie	Senior Lecturer	B.M., Vanderbilt University; M.M., Yale University; D.M.A., The University of Texas at Austin
Parker, Steven	Associate Professor of Instruction	B.M., Oberlin College; M.M., Rice University; D.M.A., The University of Texas at Austin	Wickman, Ethan	Professor	B.M., Brigham Young University; M.M., Boston University; D.M.A., University of Cincinnati, College-Conservatory of Music
			Woolf, Rachel	Assistant Professor of Instruction	B.M., University of Michigan Ann Arbor; M.M., Bowling Green State University; D.M.A., University of North Texas
			Yan, Dorothy	Lecturer	B.M., M.M., The University of Texas at San Antonio
			Yee, Thomas	Assistant Professor of Instruction	B.A., Pepperdine University; M.M., The University of Texas at Austin

Zapata, Oswaldo	Assistant Professor	B.M., Universidad Nacional de Colombia; M.M., University of South Carolina; D.M.A., Arizona State University
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Zarco, John	Associate Professor	B.M., M.M., California State University at Sacramento; D.M.A., University of Minnesota
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### Philosophy and Classics

Almeida, Michael J.	Professor	B.A., Bridgewater State University; Ph.D., The Ohio State University
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Ardoin, Paul	Associate Professor	Ph.D., University of Antwerp; Ph.D., Florida State University
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Bannister, Leo	Lecturer	B.S., University of the Incarnate Word; M.A., Texas State University
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Chen, Xunwu	Professor	B.A., Zhongshan (Sun Yatsen) University; M.A., International Academy of Philosophy; Ph.D., Fordham University
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DeBerg, Oak	Associate Professor of Instruction	B.A., The University of Texas at San Antonio; M.A., University of California, Berkeley; Ph.D., Texas A&M University
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Graber, Abraham	Associate Professor	B.A., Carleton College; M.A., Ph.D., University of Iowa
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Kelly, Sean	Professor	B.A., State University of New York at Geneseo; M.A., Ph.D., Binghamton University (SUNY)
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Nowlin, Jessica	Assistant Professor	B.A., The University of Texas at Austin; Ph.D., Brown University
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Okpala, Jude	Professor of Instruction	B.A., Bigard Memorial Seminary – Affiliate of Urban University; M.A., Ph.D., Howard University
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Rosenberg, Susan	Senior Lecturer	B.A., University of North Carolina at Chapel Hill; M.A., The University of Texas at Austin
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Tekin, Serife	Associate Professor	B.Sc., Middle East Technical University, Turkey; M.A., University of Saskatchewan, Canada; Ph.D., York University, Canada
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Thurow, Joshua	Associate Professor	B.S., M.A., Ph.D., University of Wisconsin-Madison
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Welchman, Alistair	Professor	B.A., Oxford University; M.Sc., University of Sussex; M.A., Ph.D., University of Warwick
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### Political Science and Geography

Alemán, Andrea	Professor of Practice	B.A., University of Texas at Austin; M.A., University of Texas at San Antonio
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Amberg, Stephen	Associate Professor	B.A., Tufts University; Ph.D., Massachusetts Institute of Technology
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Ang, Milena	Assistant Professor	B.A., CIDE, Mexico City; Ph.D., University of Chicago
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Bagheri, Nazgol	Associate Professor	B.A., B.S., M.A., National University of Iran; Ph.D., University of Missouri-Kansas City
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Bellows, Thomas J.	Professor	B.A., Augustana College; M.A., University of Florida; M.A., Ph.D., Yale University
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Brogdon, Matthew S.	Associate Professor	B.A., M.A., University of West Florida; Ph.D., Baylor University
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Calder, James D.	Professor	B.A., University of Maryland; M.S., California State University; Ph.D., Claremont Graduate School
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Debbage, Neil A.	Assistant Professor	B.A., M.S., Ph.D., University of Georgia
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DeOliver, Miguel D.	Associate Professor	B.A., University of Illinois; M.S., Ph.D., Pennsylvania State University
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El-Kikhia, Mansour O.	Professor	B.A., American University of Beirut; M.A., Ph.D., University of California, Santa Barbara
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Esparza, Henry	Professor of Practice	B.A., M.A., University of Texas at San Antonio
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Gervais, Bryan T.	Associate Professor	B.A., University of Massachusetts; M.A., Ph.D., University of Maryland
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Hofferberth, Matthias	Associate Professor	B.A., Westfälische Wilhelms-Universität, Münster; M.A., Goethe-University, Frankfurt and University of Wales, Swansea; Ph.D., Goethe-University, Frankfurt
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Jones, Richard C.	Professor	B.S., Austin Peay State University; M.A., Indiana University; Ph.D., The Ohio State University
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Lambert, Dean	Associate Professor of Instruction	B.A., West Texas State University; M.A., Ph.D., The University of Texas at Austin
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Laracey, Melvin C.	Professor	B.A., University of Notre Dame; J.D., University of Michigan Law School; M.P.A., Harvard University; Ph.D., University of Michigan
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Mathie, Mary	Professor of Instruction	B.A., Thomas Aquinas College; M.A., Ph.D., Baylor University
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Mathur, Ritu	Associate Professor	B.A., University of Kolkata; M.A., M.Phil., Jawaharlal Nehru University; Ph.D., York University
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Navarro, Sharon A.	Professor	B.A., M.A., The University of Texas at El Paso; M.A., Ph.D., University of Wisconsin-Madison
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Nieto-Matiz, Camilo	Assistant Professor	B.A., Pontificia Universidad Javeriana, Colombia; M.A., Universität Erfurt, Germany; Ph.D., Notre Dame
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Oliva, Javier	Professor of Instruction	B.A., University of Notre Dame; M.S., St. Mary's University Graduate School; J.D., St. Mary's University School of Law
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Rhadbane, Jamal	Associate Professor of Instruction	B.A., M.A., University of Texas at San Antonio; J.D., University of Texas at Austin
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Salas, Mario	Assistant Professor of Practice	B.A., Our Lady of the Lake University; M.A., University of Texas at San Antonio
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Stefanova, Boyka	Professor	Dipl. Economist, Karl Marx Higher Economic Institute, Sofia Bulgaria; Doctorate, University of National and World Economy, Bulgaria; M.A., Ph.D., University of Delaware
Taylor, Jon R.	Professor	B.A., M.A., Ph.D., University of Oklahoma
Vaughan, James	Professor of Instruction	B.A., Stanford University; Master of Applied Geography, Ph.D., Texas State University
Wilson, Walter C.	Associate Professor	B.A., Augustana College; Ph.D., The University of Oklahoma

## College of Sciences

Name	Title	Education
Berriozábal, Manuel	Professor Emeritus	B.S., Rockhurst College; M.S., University of Notre Dame; Ph.D., University of California, Los Angeles
Birnbaum, Stuart J.	Associate Professor Emeritus	B.S., State University of New York at Stony Brook; Ph.D., Cambridge University
Chou, Youn-Min	Professor Emeritus	B.S., National Taiwan University; M.S., The University of Texas at El Paso; Ph.D., Southern Methodist University
Chronopoulos, Anthony	Professor Emeritus	B.S., University of Athens; M.S., University of Minnesota; Ph.D., University of Illinois at Urbana-Champaign
Dutton, Alan R.	Associate Professor Emeritus	B.A., University of Rochester; Ph.D., The University of Texas at Austin
Hammond, Jr., Weldon W.	Associate Professor Emeritus	B.A., M.A., Ph.D., The University of Texas at Austin
Jarrett, Harry W.	Professor Emeritus	B.S., University of South Carolina at Columbia; Ph.D., The University of North Carolina at Chapel Hill
Martinez, Andrew O.	Professor Emeritus	B.S., Santa Fe College; Ph.D., University of Arizona
Robbins, Kay A.	Professor Emerita	S.B., Ph.D., Massachusetts Institute of Technology
Robbins, Steve	Professor Emeritus	S.B., S.M., Ph.D., Massachusetts Institute of Technology
Smith, Robert K.	Professor Emeritus	B.S., Washington State University; M.S., Ph.D., University of Iowa
Swanson, Eric R.	Professor Emeritus	B.S., Western Michigan University; M.A., Ph.D., The University of Texas at Austin
Teale, Judy	Professor Emerita	B.S., Pennsylvania State University; Ph.D., University of Virginia
Travis, Betty S. P.	Professor Emerita	B.A., M.S., St. Mary's University; Ph.D., The University of Texas at Austin
Van Auken, Oscar	Professor Emeritus	B.S., High Point College; M.S., Ph.D., University of Utah

Walmsley, Judith A.	Professor Emerita	B.A., Florida State University; Ph.D., University of North Carolina at Chapel Hill
Wene, Gregory P.	Professor Emeritus	B.A., M.A., The University of Texas at Austin; Ph.D., University of Iowa
Williams, Lawrence R.	Professor Emeritus	B.S., Texas Southern University; M.A., Ph.D., University of Michigan
Zhang, Weining	Associate Professor Emeritus	B. Engr., University of Electronic Science and Technology of China, Chengdu, P.R. China; M.S., Ph.D., University of Illinois at Chicago

### Chemistry

Aguilar, Hector	Professor of Instruction	B.S., The University of Texas-Pan American; Ph.D., The University of Texas at San Antonio
Arman, Hadi D.	Assistant Professor of Practice	B.S., Middle Tennessee State University; Ph.D., Clemson University
Bach, Stephan B. H.	Professor	B.S., B.A., University of Cincinnati; Ph.D., University of Florida
Chen, Banglin	Professor	B.S., M.S., Zhejiang University; Ph.D., National University of Singapore
Davidson, Mark A.	Assistant Professor of Practice	B.S., M.S., The University of Texas at San Antonio
Dougherty, Victoria	Assistant Professor of Practice	B.S., M.S., The University of Texas at San Antonio
Doyle, Michael P.	Professor	B.S., College of St. Thomas; Ph.D., Iowa State University
Elguézabal, Gerardo	Senior Lecturer	B.S., Universidad Autónoma de Coahuila, México; M.S., Monterrey Institute of Technology and Higher Education; Ph.D., Baylor University
Ermler, Walter C.	Professor	B.S., Northern Illinois University; M.S., Ph.D., The Ohio State University
Frantz, Doug	Professor	B.S., Stephen F. Austin State University; Ph.D., Texas A&M University
Frederick, John H.	Professor	A.B., Princeton University; A.M., Ph.D., Harvard University
Gorski, Waldemar	Professor	M.S., Ph.D., University of Warsaw, Poland
Han, Hyunsoo	Associate Professor	B.S., Kyung-Pook National University; M.S., Seoul National University; Ph.D., Princeton University
Hsieh, Jenny	Professor	B.S., University of California, San Diego; Ph.D., John Hopkins University
Lamb, Audrey	Professor	B.S., Furman University; Ph.D., Vanderbilt University School of Medicine

Larionov, Oleg	Professor	M.S., Higher Chemical College of the Russian Academy of Sciences; Ph.D., Göttingen University, Germany	Boppa, Rajendra V.	Professor	B.Tech., University of Mysore; M.Tech., Indian University of Technology; Ph.D., University of Southern California
Liu, Aimin	Professor	B.S., University of Science and Technology of China; Ph.D., Chinese Academy of Sciences; Ph.D., Stockholm University	Desai, Kevin	Assistant Professor	Ph.D., University of Texas at Dallas
Matta, Akanksha	Senior Lecturer	B.S., M.Tech, Ph.D., University of Delhi, India; M.S., Japan Advanced Institute of Science and Technology, Japan	Dutta, Anandi	Assistant Professor of Instruction	Ph.D., University of Louisiana at Lafayette
McHardy, Stanton F.	Associate Professor	B.S., Texas Lutheran University; Ph.D., The University of Utah	Fernandez, Amanda	Assistant Professor	B.S., Siena College; M.S., Ph.D., University at Albany
Musie, Ghezai	Associate Professor	B.S., Asmara University, Asmara, Eritrea; M.S., Sam Houston State University; Ph.D., Texas A&M University	Gibson, Matthew	Associate Professor	B.S., Northwestern College; M.S., Ph.D., University of Iowa
Oerther, Sarah	Senior Lecturer	B.S., M.S., The University of Texas at San Antonio	Gomez Morales, Mauricio	Assistant Professor in Instruction	B.S., Rafael Landivar University; M.S., Central American Technological University; M.S., Kyung Hee University; Ph.D., University of Paris Est; Ph.D., Purdue University
Perry, George	Professor	A.A., Allan Hancock College; B.A., University of California, Santa Barbara; Ph.D., University of California, San Diego	Harrison, Keith	Lecturer I	Ph.D., The University of Texas at San Antonio
Sadeghi, Raymond R.	Associate Professor of Instruction	B.S., The University of Texas at Austin; M.S., Ph.D., University of Colorado at Boulder	Heaps, John	Assistant Professor of Instruction	B.A., San Antonio Community College; B.S., Ph.D., The University of Texas at San Antonio
Schanze, Kirk	Professor	B.S., Florida State University; Ph.D., University of North Carolina at Chapel Hill	Hossein, Mitra Bokaei	Assistant Professor	Ph.D., The University of Texas at San Antonio
Thomas, Susan T.	Associate Professor of Instruction	B.S., Texas A&M University; Ph.D., Texas Tech University	Jadliwala, Murtuza	Associate Professor	B.E., Mumbai University, M.S., Ph.D., State University of New York at Buffalo
Tonzetich, Zachary J.	Associate Professor	B.S., University of Rochester; Ph.D., Massachusetts Institute of Technology	Jha, Sumit	Professor	B.Tech., Indian Institute of Technology; Ph.D., Carnegie Mellon University
Xu, Fang	Assistant Professor	B.S., Nanjing University; Ph.D., SUNY Stony Brook University and Brookhaven National Laboratory	Korkmaz, Turgay	Professor	B.S., Hacettepe University, Ankara, Turkey; M.S., Bilkent University, Ankara, Turkey; M.S., Syracuse University; Ph.D., University of Arizona
Yoshimoto, Francis	Assistant Professor	B.S., B.A., University of California, Berkeley; Ph.D., The University of Texas Southwestern Medical Center	Kudithipudi, Dhireesha	Professor	Ph.D., The University of Texas at San Antonio
Zapata, Adrian L.	Senior Lecturer	B.S., The University of the Incarnate Word; Ph.D., Baylor University	Lama, Palden	Associate Professor	B.Tech., Indian Institute of Technology, Roorkee; Ph.D., Colorado University at Colorado Springs
Zhao, John Cong-Gui	Professor	B.S., Tongji University, China; M.S., Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences; Ph.D., Institute of Organic Chemistry, University of Würzburg, Germany	Long, Byron	Assistant Professor of Instruction	Ph.D., Indiana University
<b>Computer Science</b>			Lu, Qi	Assistant Professor of Instruction	Ph.D., University of New Mexico
Anderson, Benjamin R.	Associate Professor of Practice	B.S., Iowa State University; M.S., Iowa State University	Murphy, Richard	Lecturer II	M.S., The University of Texas at San Antonio
Arafat, Imtiaz Muhammad	Assistant Professor of Instruction	B.S., Ph.D., The University of Texas at San Antonio	Niu, Jianwei	Professor	B.Sc., M.Sc., Jilin University, Changchun, P.R. China; Ph.D., University of Waterloo, Canada
			O'Hara, Steven	Assistant Professor of Instruction	B.S., M.S., Ph.D., The University of Texas at San Antonio

Appendix C. Faculty

Ortiz, John	Assistant Professor of Practice	M.S., Air Force Institute of Technology
Prasad, Sushil	Professor	B.Tech., Indian Institute of Technology; M.S., Washington State University; Ph.D., University of Central Florida, Orlando
Quarles, John	Associate Professor	B.S., The University of Texas at Austin; M.S., Ph.D., University of Florida
Roberson, Dawnlee	Assistant Professor of Practice	Ph.D., The University of Texas at Austin
Ruan, Jianhua	Professor	B.S., University of Science and Technology of China, Hefei, China; M.S., California State University, San Bernardino; Ph.D., Washington University in St. Louis
Rutherford, James	Lecturer	Ph.D., The University of Texas at San Antonio
Rutherford, Linda	Assistant Professor of Practice	M.S., The University of Texas at San Antonio
Sandhu, Ravi	Professor	B.Tech., Indian Institute of Technology, Bombay; M.Tech., Indian Institute of Technology, New Delhi; M.S., Ph.D., Rutgers University
Sherette, Jonathan	Assistant Professor of Instruction	B.S. The University of Texas at Austin; Ph.D., The University of Texas at San Antonio
Silvestro, Sam	Assistant Professor of Instruction	B.S., Ph.D., The University of Texas at San Antonio
Slavin, Rocky	Assistant Professor	B.S., Ph.D., The University of Texas at San Antonio
Valadez, Juan	Assistant Professor of Practice	B.S., M.S., St. Mary's University
Wang, Wei	Assistant Professor	B.Engr., University of Science and Technology of China; M.S., Ph.D., University of Virginia
Wang, Xiaoyin	Associate Professor	B.S., Harbin Institute of Technology, Heilongjiang, China; Ph.D., Peking University, Beijing, China
White, Greg B.	Professor	B.S., Brigham Young University; M.S., Air Force Institute of Technology; Ph.D., Texas A&M University
Xie, Mimi	Assistant Professor	B.S., M.S., Chongqing University, China; Ph.D., University of Pittsburgh
Yuen, Timothy T.	Professor	B.S., University of California, Irvine; M.S., University of Southern California; Ph.D., University of Texas at Austin

Zhu, Dakai	Professor	B.E., Xi'an Jiaotong University, Xi'an Shanxi, P.R. China; M.E., Tsinghua University, Beijing, P.R. China; M.S., Ph.D., University of Pittsburgh
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**Earth and Planetary Sciences**

Cannon, John	Assistant Professor of Instruction	B.S., M.S., University of Texas at El Paso; Ph.D., University of Houston
Cannon, Sandy	Lecturer	B.S., M.S., University of Texas at El Paso
Datta, Saugata	Professor	B.S., M.S., University of Calcutta, India; Ph.D., University of Western Ontario, Canada
Gao, Yongli	Associate Professor	B.S., M.S., Beijing University, P.R. China; M.S., Ph.D., University of Minnesota
Godet, Alexis M.D.	Associate Professor	A.D., University of Perpignan, France; B.S., M.S., University of Montpellier II, France; M.S., University of Lille I, France; Ph.D., University of Neuchâtel, Switzerland
Gray, Walter M.	Distinguished Senior Lecturer	B.S., U.S. Naval Academy; M.E., University of Virginia; M.S., The University of Texas at San Antonio; Ph.D., University of North Carolina
Haschenburger, Judith K.	Professor	B.S., University of Nebraska at Kearney; M.A., Arizona State University; Ph.D., University of British Columbia
Kulkarni, Harshad	Lecturer	B.E., Shivaji University, India; M.S., Colorado State University; Ph.D., Kansas State University
Lambert, Lance L.	Professor	B.S., M.S., Texas A&M University; Ph.D., University of Iowa
Mazari, Newfel	Assistant Professor of Practice	B.S., Université Des Sciences et Technologie, Algeria; D.E.A., Université Paris Diderot-Paris 7, France; M.S., Ph.D., The University of Texas at San Antonio
Mestas-Nuñez, Alberto	Associate Professor of Instruction	B.S., Instituto Tecnológico de Buenos Aires, Argentina; P.D., Oregon State University
Neathery, Jeffrey S.	Lecturer II	B.S., M.S., Texas A&M University
Vote, Janet	Lecturer II	A.S., Palo Alto College; B.S., M.S., The University of Texas at San Antonio
Weissling, Blake P.	Assistant Professor of Practice	B.S., Texas A&M University; Ph.D., The University of Texas at San Antonio
Whittington, Alan	Professor	B.S., University of Cambridge, UK; Ph.D., Open University, UK
Xie, Hongjie	Professor	B.S., East China Institute of Technology; M.S., Beijing Research Institute of Uranium Geology and China University of Geosciences, Beijing; Ph.D., The University of Texas at El Paso

**Integrative Biology**

Akwar, Emmanuel	Assistant Professor of Practice	B.S., M.S., The University of Texas at San Antonio	Hamilton, Chandra	Lecturer	B.S., Stephen F. Austin State University; M.S., The University at Texas at San Antonio
Alaniz, Gabriel	Lecturer	B.S., M.S., The University of Texas at San Antonio	Haro, Luis S.	Professor	B.A., University of California, San Diego; Ph.D., University of California, Santa Cruz
Alvarado-Miller, Ursula	Lecturer	M.S., The University of Texas at San Antonio	Harris, Tanoya	Senior Lecturer	B.S., Michigan State University; Ph.D., The University of Toledo
Apicella, Alfonso	Assistant Professor	B.S., Ph.D., University of Naples, Italy	Hernandez, Hector	Associate Professor of Instruction	B.S., Texas A&M University; M.S., The University of Texas at San Antonio; Ph.D., Walden University
Arulanandam, Bernard P.	Professor	B.S., M.A., Minnesota State University; M.B.A., The University of Texas at San Antonio; Ph.D., Medical College of Ohio	Hopkins, Mariah	Associate Professor of Instruction	B.A., Whitman College, Ph.D., University of California, Berkeley
Avshman, Natalie	Lecturer	B.S., M.S., The University of Texas at San Antonio	Hutchinson, Jeffrey	Associate Professor	B.S., University of Florida, M.S., University of Kentucky, Ph.D., University of Florida
Barea-Rodriguez, Edwin J.	Professor	B.A., Inter-American University of Puerto Rico; M.A., Ph.D., Southern Illinois University, Carbondale	Jackson, Jeffrey	Lecturer	B.S., Texas A&M University, M.S., The University of Texas at San Antonio
Beckham, Jessica	Associate Professor of Instruction	B.S., The University of Texas at Austin; M.S., Ph.D., University of North Texas	Jones, Amy	Assistant Professor of Practice	B.S., M.S., The University of Texas at San Antonio
Brigham, Brian	Assistant Professor of Instruction	Ph.D., City University of New York	Juarez, Monica	Lecturer	B.S., St. Mary's University; M.S., The University of Texas at San Antonio
Bush, Janis K.	Professor	B.S., M.S., The University of Texas at San Antonio; Ph.D., The University of Texas at El Paso	King-Kostelac, Amelia	Assistant Professor of Practice	Ph.D., The University of Texas at San Antonio
Cassill, J. Aaron	Professor	B.A., Harvard University; Ph.D., University of California, San Diego	Laub, Brian	Assistant Professor	B.S., University of Montana; Ph.D., University of Maryland
Dalterio, Susan	Professor of Instruction	B.A., Boston University, M.A., Assumption College; Ph.D., Tufts University, Medford	Lin, Chin-Hsing	Associate Professor	B.S., M.S., The University of Alabama at Birmingham; Ph.D., Fred Hutchinson Cancer Research Center
Degen, Donna	Lecturer	B.S., M.S., The University of Texas at San Antonio	Lundell, Martha J.	Professor	B.A., University of Colorado; Ph.D., University of California, Los Angeles
Eddy, Kevin	Assistant Professor of Instruction	B.S., Purdue University; M.S., Ph.D., The University of Texas at San Antonio	Martinez, Fernando	Associate Professor of Instruction	B.S., San Angelo State University; M.S., Ph.D., The University of Texas at San Antonio
Engelberth, Jurgen	Associate Professor	B.Sc., M.Sc., University of Bonn, Germany; Ph.D., University of Bochum, Germany	Matiella, Terri	Professor of Instruction	B.S., M.S., Ph.D., The University of Texas at San Antonio
Fetch, Dustin	Lecturer	B.S., The University of Texas at San Antonio	Mattis, Kareem	Lecturer	B.S., The City College of New York; M.S., The University of Texas at San Antonio
Forsthuber, Thomas	Professor	M.D., Ph.D., University of Tuebingen	Medrano, Nicolas	Lecturer	M.S., The University of Texas at San Antonio
Gagliardi, Jason	Assistant Professor of Practice	B.S., M.S., The University of Texas at San Antonio	Miller, Ursula	Lecturer I	B.S., M.S., The University of Texas at San Antonio
Garza-Decanini, Jesus	Assistant Professor of Practice	Ph.D., Universidad Autónoma de Nuevo León	Nuckels, Richard	Senior Lecturer	M.S., Texas State University
Gdovin, Stephanie	Lecturer	B.S., M.S., The University of Texas at San Antonio	Ozturk, Ferhat	Assistant Professor of Practice	Ph.D., University of Nevada at Reno
Grunstra, Matthew B.	Associate Professor of Instruction	B.S., Grove City College; M.S., Ph.D., The University of Texas at San Antonio	Phelix, Clyde F.	Professor	B.A., State University of New York; Ph.D., University of Missouri
Guerrero, Jennifer	Senior Lecturer	B.S., M.S., Ph.D., The University of Texas at San Antonio	Rodriguez, Andrew	Lecturer	B.S., M.S., Louisiana State University and A&M College

Appendix C. Faculty

Rogers, James	Assistant Professor of Practice	B.S., M.S., Texas State University	Cao, Weiming	Associate Professor	B.Sc., Nanjing University, China; M.Sc., Ph.D., Shanghai University of Science and Technology, China
Senseman, David M.	Associate Professor	B.S., Kent State University; M.S., Ph.D., Princeton University	Chen, Fengxin	Associate Professor	B.S., Hangzhou University, China; M.S., Yunnan University, China; Ph.D., Brigham Young University
Shumpert, Nicholas	Lecturer	M.S., University of Texas at San Antonio	Dueñez, Eduardo	Associate Professor	B.Sc., University of Guanajuato, Mexico; M.S., Ph.D., Princeton University
Smith, Jennifer	Assistant Professor	B.S., Cardiff University, Wales, U.K.; Ph.D., University of Birmingham, U.K.	Duffer, Christopher	Lecturer	B.S., M.S., The University of Texas at San Antonio
Sponsel, Valerie	Professor	B.Sc., Ph.D., University of Wales, U.K.; D.Sc., University of Bristol, U.K.	Duncan, Karen	Lecturer I	B.S., Montana State University; M.Ed., University of Idaho
Spottswood, Matthew	Senior Lecturer	B.S., University of Houston; M.S., Ph.D., The University of Texas at Dallas	Dyas, Carol	Lecturer	B.S., M.S., The University of Texas at San Antonio; Ph.D., The University of Texas at Austin
Suter, Kelly	Associate Professor	B.A., B.S., M.S., West Virginia University School of Medicine; Ph.D., University of Pittsburgh School of Medicine	Ergür, Alperen	Assistant Professor	B.S., Bilkent University; M.S., Tobb University of Science and Technology; Ph.D., Texas A&M University
Thompson, Robert	Lecturer	B.S., Oklahoma State University; B.S., M.S., The University of Texas at San Antonio; Doctor of Law, University of Southern California	Esparza, Edward	Associate Professor of Practice	B.S., Texas A&M University; M.S., University of New Mexico; M.S., The University of Texas at San Antonio
Troia, Matthew	Assistant Professor	B.S., University of Wisconsin; M.S., University of Texas at Tyler; Ph.D., Kansas State University	Fazly, Mostafa	Assistant Professor	Ph.D., The University of British Columbia
Veach, Allison	Assistant Professor	B.S., M.S., Ball State University; Ph.D., Kansas State University	Fies, David	Senior Lecturer	B.S., University of Maryland; M.S., The University of Texas at San Antonio
Wiejaczka, Adam	Lecturer	B.S., M.S., The University of Texas Rio Grande Valley	Gehertz, Jessica	Assistant Professor	B.A., Concordia College; M.S., Ph.D., Colorado State University
Willmott, Thomas	Lecturer	B.S., M.S., The University of Texas at San Antonio	Gokhman, Dmitry	Associate Professor	B.S., University of Miami; Ph.D., University of California, Berkeley
Young, Gwen	Associate Professor of Instruction	B.S., M.S., Ph.D., The University of Texas at San Antonio	Gui, Changfeng	Professor	B.S., M.S., Peking University, China; Ph.D., University of Minnesota, Twin Cities
Young, Nicholas	Lecturer	B.S., The University of Texas at San Antonio	Gutierrez, Juan	Professor	B.E., Universidad Nacional de Colombia; M.S., Ph.D., Florida State University
<b>Mathematics</b>			Halfin, Igor	Senior Lecturer	M.A., Kiev P.I. Chaikovsky State Conservatory; M.A., University of the Ukraine; M.S., The University of Texas at San Antonio
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Barakat, Davood	Lecturer	M.S., The University of Texas at San Antonio	Jia, Zhiyuan	Assistant Professor of Instruction	B.E., Hehai University, Nanjing, Jiangsu, China; M.S., Kunming University of Science and Technology, Kunming, Yunnan, China; Ph.D., Michigan State University
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Bentley, Sage	Lecturer	B.S., Northwestern College; M.Ed., Southwestern A/G University; Ph.D., Baylor University			
Brucks, Jonathan	Senior Lecturer	A.S., San Antonio College; B.S., M.S., The University of Texas at San Antonio			
Busald, Gerald	Lecturer	B.S., M.A., Texas State University			



Kennedy, Esmarie	Lecturer	B.S., St. Louis University, Philippines; M.S., The University of Texas at San Antonio	Stamov, Gani	Professor of Instruction	M.A., M.A., University of Plovdiv, Bul.; Ph.D., Higher Accreditation Commission, Bulgaria; D.Sc., University of Chemical Technology and Metallurgy, Bulgaria
Lahodny, Glenn	Assistant Professor of Instruction	B.A., M.S., Ph.D., Texas Tech University	Stamova, Ivanka	Associate Professor	M.S., University of Plovdiv, Bulgaria; Ph.D., D.Sc., Higher Accreditation Commission of Bulgaria
Le, Dung	Professor	B.S., University of Saigon, Vietnam; Diploma in Mathematics, International Center for Theoretical Physics, Italy; Ph.D., Arizona State University	Vega, Tina	Assistant Professor of Instruction	B.S., M.S., The University of Texas at San Antonio; Ph.D., University of Texas at Austin
Liang, Su	Associate Professor	Ph.D., University of Connecticut	Walls, Carey	Lecturer	B.S., University of Mary Hardin-Baylor; M.A., University of the Incarnate Word
Luna, Alyssa	Lecturer	B.S., M.S., The University of Texas at San Antonio	Walton, Claire	Assistant Professor	B.S., California Institute of Technology; Ph.D., University of California, Santa Cruz
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Nguyen, Vu	Senior Lecturer	Ph.D., Vietnam National University	Arulanandam, Bernard	Professor	B.S., M.A., Minnesota State University; M.B.A., The University of Texas at San Antonio; Ph.D., Medical College of Ohio
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Olivarez, Ernesto	Lecturer	M.S., The University of Texas at San Antonio	Chambers, James	Professor	B.A., St. Mary's University; M.A., Incarnate Word College; Ph.D., The University of Texas Health Science Center at San Antonio
Pasnicu, Cornel	Professor	B.A., M.S., Ph.D., University of Bucharest, Romania	Eppinger, Mark	Associate Professor	M.S., Tuebingen University; Ph.D., University of Tuebingen
Popa, Mihai	Associate Professor	B.S., M.S., University of Bucharest; Ph.D., University of California, Los Angeles	Forsthuber, Thomas	Professor	M.D., Ph.D., University of Tuebingen
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Qu, Zhuolin	Assistant Professor	B.S., University of Science and Technology of China; M.S., Ph.D., Tulane University	Hanson, Kirsten	Assistant Professor	B.A., M.S., University of Chicago; Ph.D., University of Cambridge
Richardson, Jr., Walter B.	Professor	B.S., Southwest Texas State University; M.S., University of Houston; Ph.D., University of North Texas	Heidner, Hans	Professor	B.S., California Polytechnic State University-San Luis Obispo; M.S., North Carolina State University; Ph.D., University of California, Davis
Roberts, Cynthia	Assistant Professor of Practice	B.S., University of Houston-Victoria; M.S.; The University of Texas at Austin	Hung, Chiung-Yu	Associate Professor	B.S., National Taiwan Normal University; Ph.D., The University of Texas at Austin
Salingaros, Nikos A.	Professor	B.S., University of Miami; M.A., Ph.D., State University of New York at Stony Brook	Klose, Karl	Professor	B.A., University of California, San Diego; Ph.D., University of California, Berkeley
Schurmann, Matthew	Lecturer	B.S., M.S., The University of Texas at San Antonio			
Sharon, Zachery	Senior Lecturer	B.S., M.S., The University of Texas at San Antonio			

Appendix C. Faculty

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Raghavan, Rahul	Associate Professor	B.S., University of Calicut; M.S., Manipal Academy of Higher Education, India; Ph.D., University of Montana
Saville, Stephen	Associate Professor	B.S., Wolverhampton University; Ph.D., Leicester University
Seshu, Janakiram	Professor	B.V.Sc., Madras Veterinary College; Ph.D., Washington State University
Shields-Menard, Sara	Assistant Professor of Instruction	B.S., M.S., Nicholls State University; Ph.D., Mississippi State University
Wang, Yufeng	Professor	B.S., Fudan University, Shanghai, P.R. China; M.S., Ph.D., Iowa State University
Zhang, Guoquan	Professor	M.S., Chinese Academy of Agriculture Sciences, China; D.V.M., Inner Mongolia Agricultural University, China; Ph.D., University of Gifu, Japan

**Neuroscience, Developmental and Regenerative Biology**

Apicella, Alfonso	Associate Professor	B.S., Ph.D., University of Naples, Italy
Burgos-Robles, Anthony	Assistant Professor	B.S., Pontifical Catholic University of Puerto Rico; Ph.D. Ponce School of Medicine, Puerto Rico
Carless, Melanie A.	Associate Professor	B.Sc., BHSc, Ph.D., Griffith University Gold Coast, Australia
Gamblin, Truman	Professor	B.S., Western Kentucky University; Ph.D., Vanderbilt University
Gaufo, Gary	Associate Professor	B.A., M.A., Ph.D., University of California, Berkeley
Hanna, Michael	Assistant Professor of Instruction	B.S., M.S., Ph.D., University of Rochester
Hermann, Brian	Professor	B.S., Villanova University; Ph.D., The University of Kansas Medical Center
Hsieh, Jenny	Professor	B.S., University of California, San Diego; Ph.D., Johns Hopkins University
Jaffe, David B.	Professor	B.A., B.S., The University of Texas at Austin; M.S., Duke University; Ph.D., Baylor College of Medicine
LeBaron, Richard G.	Professor	B.S., Louisiana State University; Ph.D., The University of Alabama
Lee, Hyoung-gon	Associate Professor	B.S., M.S., Hallym University; Ph.D., Case Western University School of Medicine
Macpherson, Lindsey	Assistant Professor	B.S., University of California, San Diego; Ph.D., The Scripps Research Institute, Kellogg School of Science and Technology
McCarrey, John	Professor	B.S., M.S., Ph.D., University of California, Davis
Paladini, Carlos	Professor	B.A., Ph.D., Rutgers University

Perry, George	Professor	A.A., Allan Hancock College, B.A., University of California, Santa Barbara, Ph.D., University of California, San Diego
Ramos, William	Assistant Professor of Instruction	B.S., The University of Texas at Austin; M.S., Ph.D., The University of Texas at San Antonio
Renthal, Robert D.	Professor	B.A., Princeton University; Ph.D., Columbia University
Santamaria, Fidel	Professor	B.S., National Autonomous University of Mexico (UNAM); Ph.D., California Institute of Technology
Savelli, Francesco	Assistant Professor	M.S., Ph.D., Università degli Studi di Roma "La Sapienza", Italy
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Wanat, Matthew	Associate Professor	B.S., University of Wisconsin-Madison; Ph.D., University of California, San Francisco
Wicha, Nicole	Professor	B.A., The University of Texas at San Antonio; M.S., Ph.D., University of California, San Diego
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**Physics and Astronomy**

Al Dayeh, Maher	Adjoint Associate Professor	B.S., Beirut Arab University; M.S., Ph.D., Florida Institute of Technology
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Anantua, Richard J.	Assistant Professor	B.S., Yale University; M.S., Stanford University; Ed.M., Harvard University; Ph.D., Stanford University
Ayón, Arturo A.	Professor	B.S., Universidad de Guadalajara, México; M.S., Ph.D., Cornell University
Becker, Tracy	Adjoint Assistant Professor	B.S., Lehigh University; Ph.D. University of Central Florida
Botez, Cristian E.	Professor	B.S., University of Bucharest; M.S., Ph.D., University of Missouri - Columbia
Brancaleon, Lorenzo	Professor	B.S., Ph.D., University of Parma, Italy
Capps, Jeremy	Lecturer	B.S., Francis Marion University; M.S., Ph.D., Clemson University
Chabanov, Andrey	Professor	M.S., Kharkov State University, Ukraine; D.Sc., Ukrainian Academy of Sciences, Ukraine; Ph.D., City University of New York
Chen, Chonglin	Professor	B.S., Huachiao University, P.R. China; M.S., Chinese Academy of Sciences, P.R. China; M.S., Ph.D., The Pennsylvania State University

Chen, Liao Y.	Professor	B.S., Xinyang Normal College, Henan; M.S., Huazhong University of Science Technology, Wuhan; Ph.D., Academia Sinica, Beijing	Mayer, Kathryn	Associate Professor	B.S., M.S., Ph.D., Rice University
Currie, Thanye	Associate Professor	B.S., Wichita State University; M.S., Ph.D., University of California-Los Angeles	Nash, Kelly	Professor	B.S., Dillard University; M.S., University of Michigan-Ann Arbor; Ph.D., The University of Texas at San Antonio
Desai, Mihir	Adjoint Professor	B.Sc., University of London, U.K.; Ph.D., University of Birmingham, U.K.	Ogasawara, Keiichi	Adjoint Associate Professor	B.S., M.S., Ph.D., The University of Tokyo
Drozhdov, Dina	Associate Professor of Instruction	B.S., The Ohio State University; M.S., Ph.D., Clemson University	Packham, Christopher	Professor	B.S., Ph.D., University of Hertfordshire
Ebert, Robert	Adjoint Assistant Professor	B.S., University of Calgary; M.A.Sc., University of Toronto; Ph.D., The University of Texas at San Antonio	Ponce-Pedraza, Arturo	Professor	M.S., Universidad Autónoma de Puebla; Ph.D., Universidad de Cádiz
Elliot, Heather	Adjoint Professor	B.S., Clemson University; M.S., University of Michigan; Ph.D., University of Alabama in Huntsville	Powell, James	Assistant Professor of Practice	B.A., Eastern Washington University; M.S., Naval Postgraduate School; Ph.D., The University of Texas at San Antonio
Fuselier, Stephen	Adjoint Professor	B.S., University of Southern California; M.S., Ph.D., University of Iowa	Raut, Ujjwal	Adjoint Assistant Professor	B.A., Luther College; Ph.D., University of Virginia
Gladstone, George	Adjoint Professor	B.Sc., The University of British Columbia; M.S., Ph.D., California Institute of Technology	Retherford, Kurt	Adjoint Professor	B.S., University of Wisconsin-Madison; M.S., Ph.D., Johns Hopkins University
Goldstein, Jerry	Adjoint Professor	B.S., Brooklyn College; Ph.D., Dartmouth College	Roming, Pete	Adjoint Professor	B.S., M.S., Ph.D., Brigham Young University
Hamby, Robert D.	Lecturer II	B.S., M.S., Southwest Texas State University	Schlegel, Eric M.	Professor	B.S., B.S., State University of New York at Albany; Ph.D., Indiana University, Bloomington
Hinkel, Natalie	Adjoint Assistant Professor	B.A., Oberlin College; Ph.D., Arizona State University	Silva, David	Professor	B.S., University of Arizona, Ph.D., University of Michigan
Jahn, Jörg-Micha	Adjoint Associate Professor	M.S., Ludwig-Maximilians-Universität München, Germany; Ph.D., Dartmouth College	Sooby, Elizabeth	Assistant Professor	B.S., Millsaps College; M.S., Ph.D., Texas A&M University
Konno, Ichishiro	Associate Professor of Instruction	B.A., Miyagi University of Education, Japan; M.S., Bowling Green State University; Ph.D., Arizona State University	Speck, Angela	Professor	B.S., Queen Mary University of London; Ph.D., University College London
Large, Nicolas	Associate Professor	B.S., M.S., Ph.D., Paul Sabatier University of Toulouse, France; Ph.D., The University of the Basque Country, Spain	Sutherland, Tyler	Assistant Professor	B.S., Auburn University; Ph.D., Purdue University
Livi, Stefano	Adjoint Professor	B.S., Università degli Studi di Firenze; Ph.D., University of Florence; Ph.D., University of Rome	Teolis, Benjamin D.	Adjoint Assistant Professor	Ph.D., University of Virginia
Lopez-Lozano, Xochitl	Associate Professor	B.S., M.S., Ph.D., University of Puebla, Mexico	Veach, Todd	Adjoint Professor	B.A., Boston University; M.S., Arizona State University; Ph.D., Arizona State University
López-Mobilía, Rafael	Professor of Instruction	B.S., Pontificia Universidad Católica del Perú, Lima; M.S., University of Notre Dame; Ph.D., The University of Texas at Austin	Villareal, Damien L.	Senior Lecturer	B.S., The University of Texas at San Antonio; M.S., The University of Texas
Malik, Taha	Lecturer	Ph.D., The University of Texas at San Antonio	Waite, Jack H.	Adjoint Professor	B.S., University of Alabama; M.S., The University of Michigan; Ph.D., The University of Michigan
Marucho, Marcelo	Associate Professor	M.S., University of Buenos Aires; Ph.D., National University of La Plata	Zhou, Xuan	Assistant Professor	B.S., Xi'an Jiaotong University, China; M.S., Ph.D., Université de Technologie de Troyes, France

## Klesse College of Engineering and Integrated Design

Name	Title	Education
Baron, Robert	Professor Emeritus	B.Arch., University of Oregon, M.Arch., University of Washington; M.S.Arch., University of Pennsylvania
Burian, Edward R.	Professor Emeritus	B.Arch., University of Southern California, Los Angeles; M.Arch., Yale University
Howe, Richard S.	Professor Emeritus	B.S., University of Kentucky; S.M., Massachusetts Institute of Technology; M.S., Ph.D., University of Wisconsin-Madison
Singh, Yesh P.	Professor Emeritus	B.E., University of Roorkee; M.S., Youngstown State University; Ph.D., University of Wisconsin-Milwaukee, P.E.
<b>Architecture and Planning</b>		
Alexander, John	Associate Professor	B.Arch., University of Detroit; M.Arch. History, Ph.D., University of Virginia
Araiza, Armando	Assistant Professor	B.Arch., The University of Texas at San Antonio; M.Arch., Pratt Institute
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Blizard, Mark	Associate Professor	B.Arch., M.Arch., Virginia Polytechnic Institute and State University
Blizard, Norma	Lecturer II	B.Arch., Virginia Polytechnic Institute and State University
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Fish, Curtis	Associate Professor of Instruction	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
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Norouzi, Neda	Assistant Professor	M.Arch., M. Urban Regional Planning, University of Colorado; Ph.D., Virginia Polytechnic Institute and State University
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Pemberton-Haugh, Sue Ann	Professor of Practice	B.E.D., M.Arch., Texas A&M University
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Rogers, Candid W.	Associate Professor of Practice	B.A., M.Arch., The University of Texas at Austin
Tangum, Richard R.	Professor	B.Arch., Texas Tech University; M.Arch., Virginia Polytechnic Institute; D.E.D., Texas A&M University
Temple, Stephen A.	Professor	B.Arch., Carnegie Mellon University; M.S.Arch. Studies, The University of Texas at Austin
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<b>Biomedical Engineering and Chemical Engineering</b>		
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Giambini, Hugo	Assistant Professor	B.S., Florida International University; Ph.D., Mayo Clinic
Guda, Teja	Associate Professor	B.Tech., Indian Institute of Technology, Bombay; Ph.D., The University of Texas at San Antonio-The University of Texas Health Science Center at San Antonio
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Ong, Joo L.	Professor	B.S., University of Iowa; M.S., Ph.D., University of Alabama at Birmingham
Ortiz, Araceli Martinez	Professor	B.S., University of Michigan; M.S., Kettering University; M.A., Michigan State; Ph.D., Tufts University
Qutub, Amina	Associate Professor	B.S., Rice University; Ph.D., University of California, Berkeley/San Francisco
Ramirez-Hernandez, Abelardo	Assistant Professor	B.S., Ph.D., Universidad Autónoma del Estado de Morelos
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Romero Uribe, Gabriela	Assistant Professor	B.S., Autonomous University of San Luis Potosi; M.S., Ph.D., University of the Basque Country
Sankarasubramanian, Shrihari	Assistant Professor	B.E., Visvesvaraya Technological University; Ph.D., Illinois Institute of Technology
Skarke, Steve	Professor of Practice	B.S., Texas A&M University; MSIE, The University of Houston
Sun, Gongchen	Assistant Professor	B.S., Peking University; Ph.D. University of Notre Dame

Tang, Liang	Associate Professor	B.S., Jiangsu Polytechnic University, China; Ph.D., University of Louisville
Urena-Benavides, Esteban	Assistant Professor	B.S., University of Costa Rica; Ph.D., Clemson University
Vielma, Karina Ivette	Assistant Professor	B.S., Massachusetts Institute of Technology; M.Ed., Harvard University; Ph.D., The University of Texas at San Antonio
Yaszemski, Michael	Professor	B.S., M.S., Lehigh University; M.D., Georgetown University School of Medicine; Ph.D., Massachusetts Institute of Technology
Ye, Jing Yong	Professor	B.S., Huazhong University of Science and Technology, China; Ph.D., University of Tsukuba, Japan

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Awolusi, Ibukun	Assistant Professor	B.S., M.S., University of Lagos; M.S., Ph.D., The University of Alabama
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Appendix C. Faculty

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Johnson, Drew	Professor	B.S., The University of Texas at Austin; Ph.D., University of Minnesota, P.E.	Ahmed, Sara	Associate Professor	B.S., M.S., Ph.D., Virginia Polytechnic Institute and State University
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Zhang, Jianqiu (Michelle)	Associate Professor	B.S., Zhejiang University, China; M.S., Zhongshan University, China; Ph.D., State University of New York at Stony Brook

### Mechanical Engineering

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Appendix C. Faculty

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Jacobs, Gary	Adjoint Assistant Professor	B.S., The University of Texas at Austin; Ph.D., University of Oklahoma	Dones, Judith	Assistant Professor of Practice	B.A., Spelman College; M.B.A., Clark Atlanta University
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Karimi, Amir	Professor	B.S., Oregon State University; M.S., University of Portland; Ph.D., University of Kentucky	Galliher, Aaron	Assistant Professor of Practice	B.A., Wichita State University; M.A., The University of Texas at San Antonio
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Millwater, Harry R.	Professor	B.S., Rice University; M.S., Ph.D., The University of Texas at Austin	Harasta, Jesse	Associate Professor of Instruction	B.A., State University of New York Geneseo; Ph.D., Syracuse University
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Nedungadi, Ashok	Professor of Instruction	Ph.D., University of Connecticut	Leveridge, Tinney	Professor of Instruction	B.S., Texas State University; M.A., The University of Texas at San Antonio; Ph.D., Texas Woman's University
Pineda, Daniel	Assistant Professor	B.S., The University of Texas at Austin; Ph.D. University of California, Berkeley	Newell, Michael	Associate Professor of Instruction	B.A., The Ohio State University; M.A., University of Chicago; Ph.D., Syracuse University
Restrepo, David	Assistant Professor	B.S., M.S., Universidad EAFIT; Ph.D., Purdue University	O'Brien, Erin	Assistant Professor of Instruction	B.A., University of the Incarnate Word; M.A., The University of Texas at San Antonio
Rincon Troconis, Brendy C.	Assistant Professor	B.S., La Universidad del Zulia, Maracaibo, Venezuela; M.S., Ph.D., The Ohio State University	Ramirez, Candelario	Senior Lecturer	B.A., M.S., Texas A&M International University
Saygin, Can	Professor	B.S., M.S., Ph.D., Middle East Technical University, Ankara, Turkey	Riojas-Fitzpatrick, Lauren	Assistant Professor of Instruction	B.F.A., Texas State University; M.F.A., The University of Texas at San Antonio
Seidi, Morteza	Assistant Professor	B.S., Yazd University, Yazd, Iran; M.S., Iran University of Science and Technology, Tehran, Iran; Ph.D., University of Maine	Rubal, Naomi	Assistant Professor of Practice	B.S., M.S., The University of Texas at San Antonio;
Sooby, Elizabeth S.	Assistant Professor	B.S., Millsaps College; M.S., Ph.D., Texas A&M University	Schroeder, Rebecca	Associate Professor of Instruction	B.S., Texas A&M University; Ph.D., M.D. Anderson Cancer Center UT Health Graduate School of Biomedical Sciences
Wan, Hung-Da	Associate Professor	B.S., M.S., National Taiwan University; Ph.D., Virginia Polytechnic Institute and State University	Vikesland, Alyssa	Associate Professor of Instruction	B.S., Wheaton College; M.S., Ph.D., University of Washington
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Zeng, Xiaowei	Associate Professor	B.E., M.S., Huazhong University of Science and Technology, China; M.S., Ph.D., The George Washington University			

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Name	Title	Education
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### Artificial Intelligence

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**Writing Program**

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Frasier, Christina	Assistant Professor of Practice	B.A., Stephen F. Austin State University; M.A., University of Louisiana at Lafayette
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Glasscock, Robyn	Lecturer	B.A., M.A., The University of Texas at San Antonio
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Johnson, Paul	Lecturer	B.A., California State University, East Bay; M.A., The University of Texas at San Antonio
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Murata-Gomez, Melissa	Lecturer	B.A., M.A., The University of Texas at San Antonio
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Park, J. Hannah	Senior Lecturer	B.A., Keimyng University; M.A., Ph.D., The University of Texas at Austin
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Pena, Debra	Assistant Professor of Instruction	B.A., Concordia University; M.A., Ph.D., The University of Texas at San Antonio
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Ratcliffe, Lindsay	Assistant Professor of Practice	B.A., Grove City College; M.A., The University of Texas at San Antonio; M.S., Antioch University
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Smith, Martha	Assistant Professor of Practice	B.A., The University of Texas at Austin; M.A., College of William and Mary
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West, Phil	Lecturer	B.A., University of Washington; M.F.A., The University of Texas at Austin
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Wilson, Ryan	Lecturer	B.A., M.A., The University of Texas at San Antonio
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Wright, Todd	Assistant Professor of Practice	B.A., Texas Lutheran University; M.A., Kansas State University; M.F.A., New School for Social Research
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