



# University of Houston-Downtown

## 2005-2006

### Undergraduate and Graduate Catalog

The provisions of this Catalog are not an irrevocable contract between the student and the University of Houston–Downtown. The University of Houston–Downtown reserves the right to change any provision or requirement of this Catalog at any time, including but not limited to degree requirements, course offerings, fees and listings in the calendar as necessitated by university or legislative action.

All universities establish academic requirements for granting degrees. Advisors, program coordinators and other university officials are available to assist students in planning how to satisfy these requirements, but students themselves are responsible for fulfilling them.

Students should also be aware of the university's guidelines for conduct and disciplinary procedures. Information on students' rights and responsibilities including specific rules on academic honesty and prohibited conduct is available in the *Student Handbook*.

In accordance with the amendments to the Higher Education Act of 1965, known as the Student Right-to-Know and Campus Security Act, information regarding graduation rates may be found in the Office of Admissions and Records (Room 350-South, 713-221-8522), and information on crime statistics may be found in the University Police Office (Suite 118-North, 713-221-8065).

The university seeks to provide equal educational opportunity without regard to race, color, religion, national origin, gender, age, disability or veteran status in compliance with Title IX regulations and all other federal and state regulations.

The information contained in this Catalog is correct at the time of publication and is subject to change without notice.

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## A Message from the President



Welcome to UH-Downtown. You are joining us at an exciting time. With record enrollments and new programs and facilities, this is truly a time of new opportunities and challenges for UHD.

I am now in my fourteenth year as president and the longer I have been here, the more convinced I become of the importance of the university's mission and its importance to our community. We are an institution that truly can and does make a difference in the lives of our students.

UHD is different in many ways from more traditional universities, but these differences constitute our special strengths. For 30 years, UHD has been changing lives by offering the high quality programs and support services that prepare students to succeed in our fast-paced, multicultural society.

UH-Downtown's primary focus is the success of our students. The entire university community at UH-Downtown is dedicated to helping you achieve your goals. That means personal attention from professors, small classes, and a support system equaled by few other universities in the nation. You need to remember, though, that to benefit from these rich resources, you must take advantage of them. Success in college will require your active engagement.

In addition to a dedicated faculty who are committed to helping you achieve your academic goals, you will have access to the latest technology, with computer labs available at the times you need them. Our student e-services allows you to conduct almost all of your university business online on a 24-hour, 365-day basis.

We take special pride in our centers of excellence, like the Learners Community and the Scholars Academy, an academically competitive program in the College of Sciences and Technology that promotes scholarship and student success for undergraduate students majoring in the areas of science, technology, engineering, and mathematics.

UHD has long been recognized for the rich diversity of its student body. Our students come from all ethnic and economic backgrounds. Some attend on a part-time basis and some full-time, some in the day and some in the evenings and on weekends. Whatever your background or enrollment status, I want you to know that you are a valued part of the UHD family and are helping to make UHD the special place that it is.

To better serve those of you who attended a community college or another university before coming here, we established a Transfer Center this past year that will help you move quickly into one of our degree programs. We also continue to expand the number of courses offered online, as well as at various sites in the Houston metropolitan area for those who find it difficult to come to the downtown campus.

Whatever your needs or circumstances, we want to help. Our goal is your success, for when you succeed, we know we have done our job.

Best wishes for an outstanding academic year.

A handwritten signature in black ink, appearing to read "Max Castillo". The signature is fluid and cursive, with a large initial "M" and "C".

Max Castillo, EdD  
President

## Academic Calendar 2005-2006

The following dates were correct at the time of publication, but some are subject to change.  
Check [www.uhd.edu/AcademicCalendars](http://www.uhd.edu/AcademicCalendars) for current dates.

### Fall 2005

August 22.....	Classes begin
September 5.....	Labor Day Holiday
November 23-26.....	Thanksgiving Holidays
December 3.....	Last day of class
December 7-15.....	Final Exams
December 18.....	Commencement

### Spring 2006

January 17.....	Classes begin
March 13-18.....	Spring Break
April 14 (Good Friday).....	All classes meet. Some UHD offices may close at noon.
May 1.....	Last day of class
May 4-12.....	Final Exams
May 14.....	Commencement

### Summer 2006, Session I

May 30.....	Classes begin
June 28.....	Last day of class
June 29.....	Final Exams

### Summer 2006, Nine-Week Session

May 30.....	Classes begin
July 4.....	Independence Day Holiday
July 18.....	Last day of class
July 19-20.....	Final Exams

### Summer 2006, Session II

July 5.....	Classes begin
August 3.....	Last day of class
August 7.....	Final Exams

# UH-Downtown: Houston's Downtown University

## Mission Statement

The University of Houston-Downtown is a public, urban university committed to providing quality academic programs that serve the needs of the multicultural population of Houston and surrounding communities. It offers both undergraduate and a limited number of graduate academic degree programs that enable students to acquire the knowledge and skills needed to succeed in their chosen fields. Through instructional excellence, creative and scholarly activities, and community involvement, the university contributes to the business, scientific, economic, technological, social and cultural development of the area.

As an urban university, UH-Downtown has a special responsibility to provide educational access to those who have not had access in the past. Through flexible scheduling of courses, the innovative use of technology and distance learning opportunities, and a policy of open admissions at the undergraduate level, the university provides educational opportunities for many who might not otherwise be able to pursue a college degree. To facilitate the academic success of both its traditional and nontraditional students, the university offers a wide range of support services and employs a faculty and staff who are dedicated to helping students meet the rigorous standards and requirements for its programs.

In its public service and outreach activities, the university offers numerous pre-collegiate programs as well as continuing education programs that maintain and upgrade specialized skills of professionals employed in the Houston area. Through selected programs, research initiatives, and collaborative efforts, the university also seeks to broaden its domestic and international academic programs and relations.

## UH-Downtown: Houston's Downtown University

Located in the heart of Houston, UH-Downtown is a public university where the emphasis is on excellence in teaching and preparing students for success in their professional careers and further graduate studies.

With dedicated faculty, small classes, and innovative course options, UHD offers excellent educational opportunities through its colleges of Business, Humanities and Social Sciences, Public Service, Sciences and Technology, and University College.

UHD offers four bachelor's degrees (Bachelor of Arts, Bachelor of Science, Bachelor of Business Administration, and Bachelor of Engineering Technology) with majors in 37 areas, and three master's degrees (Master of Arts in Teaching, Master of Science, and Master of Security Management) with majors in seven areas.

UHD is nationally recognized for its outstanding academic opportunities, including its accredited programs and productive community partnerships. As a result of these partnerships, the number of scholarships generated through donations from corporations, foundations, and individuals grows every year.

Flexible schedules and class options, including online, live interactive television, and videotape, make degrees available to students throughout the metro area. UHD participates in partnerships with the

UH System at Sugar Land, the UH System at Cinco Ranch, and the University Center in The Woodlands to enable students to complete bachelor's and master's degrees close to home or work. UHD's Weekend College and evening classes also help put a degree within reach for students with full-time jobs.

The nature of the UHD student population prepares individuals to thrive in the multicultural workplace of the 21st century. UHD students are diverse in every sense of the word: in ethnicity, age, financial background, and life situation. *U.S. News & World Report* has consistently named UHD one of the nation's most ethnically diverse institutions of higher learning.

UHD's campus comprises the Academic Building; the Commerce Street Building; the Jesse H. Jones Student Life Building; the historic One Main Building; and the restored Willow Street Pump Station.

## UHD's History and Future on the Bayou

UHD is creating an exciting future based on a fascinating past. The university's history began in 1974, when the assets of the private South Texas Junior College were transferred to the University of Houston. By 1979, the Texas Legislature approved the new institution as a separate entity within the University of Houston System. In 1983, the name was changed to the University of Houston-Downtown.

Today, UH-Downtown is the second largest institution in the University of Houston System, which includes a total of four distinct universities: the University of Houston, UH-Clear Lake, UH-Downtown and UH-Victoria. All four institutions are governed by the UH System Board of Regents. The chief administrative officer at each university is its president.

The history of the university's campus goes back even farther. The campus's One Main Building was constructed in 1929 on the banks of the White Oak and Buffalo Bayous. Then known as the Merchants and Manufacturers Building, the building served the city for decades as a center for commerce and manufacturing. It is listed on the National Register of Historic Places.

UHD's facilities have been changing since the university's inception. In the late 1990s, UHD added the Academic Building, with more than 40 classrooms and lecture halls; the Technology Teaching and Learning Center; the Wilhelmina Cullen Robertson Auditorium; a food court; and the Jesse H. Jones Student Life Center, devoted to student health, recreation and fitness.

In 2004, the university further expanded to accommodate a student enrollment that tops 11,000. This expansion has taken the form of the new Commerce Street Building, which houses classrooms, academic labs, computer labs, meeting space, and faculty offices.

In addition, the One Main building has undergone renovations and improvements to create a more attractive and hospitable environment. UHD students benefit from new decks on the north and south side of the building, renovated common areas on the third floor, and a new light rail station at the Main Street entrance. The third floor of the One Main Building offers a "one-stop" student service center, demonstrating UHD's commitment to more efficiently and effectively serve students. Students can get information about UHD, register for classes, seek

financial aid and scholarships, meet with advisors, and pay fees in one area.

UHD's website offers further convenience to students. Besides applying and registering for classes online, students can handle some of the "business" of going to college. With UHD's e-Services, students can update personalized information, pay for classes, check payment status, look at their class schedules and grades, and check admission and enrollment status.

While UHD values its history, Houston's Downtown University continues to move forward with commitment and education.

## **Campus Safety and Security**

Information on campus safety and security, including five-year crime statistics, is provided on the UH-Downtown Police Department website at [www.uhd.edu/campus/pd/](http://www.uhd.edu/campus/pd/). Also available are safety and crime prevention information, campus policies on alcohol, firearms and sexual assault, crime alerts and more.

## **Accreditation**

The University of Houston-Downtown is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia, 30033-4097; telephone: 404-679-4501; Internet: [www.sacscoc.org/](http://www.sacscoc.org/)) to award bachelor's and master's degrees.

The College of Business's Bachelor of Business Administration degree programs are accredited by the Association to Advance Collegiate Schools of Business (600 Emerson Road, Suite 300, St. Louis, Missouri, 63141-6762; telephone: 314-872-8481; Internet: [www.aacsb.edu/](http://www.aacsb.edu/)). Accreditation documentation is available in the College of Business, Room 1009-North.

The Engineering Technology Department's Bachelor of Science in Engineering Technology degree programs in Control and Instrumentation Electronics Design, Process and Piping Design, and Structural Analysis and Design, are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc. (111 Market Place, Suite 1050, Baltimore, MD 21202-4012; telephone 410-347-7700; Internet: [www.abet.org/](http://www.abet.org/)).

## Admission

Applications may be submitted online at [www.uhd.edu/admissions](http://www.uhd.edu/admissions) or through [www.applytexas.org](http://www.applytexas.org). Application deadlines and enrollment procedures are printed in the *Registration and Information Bulletin*.

### New and Transfer Student Admission

#### General Information

• **Application.** All new students must file an application for admission with the Office of Admissions and pay the nonrefundable \$25 application fee according to the dates listed below:

**Fall** (regular undergraduate) by July 1

**Spring** (regular undergraduate) by Dec 1

• **Residency Status Documents.** International students and US citizens born outside the United States must provide original, valid immigration documents such as I-551, I-688, I-94, passport or US citizenship certificate.

• **College Transcripts.** Students with prior college experience must submit official transcripts from all previously attended colleges regardless of whether college credit was earned. A transcript is considered official when it bears the institution's seal, is signed by the issuing authority, and is sent directly by the issuing institution or delivered in an envelope sealed by the issuing institution.

• **Texas Success Initiative.** The State of Texas requires that all students take, or prove exemption from, an assessment test prior to enrolling in college-level courses in a public institution. Several testing options are available: THEA (formerly TASP), ASSET, COMPASS, or ACCUPLACER. Students who have already taken one of these tests, or who are exempt from testing, must submit official documentation of the scores to the Office of Admissions. See page 5 for more information about TSI.

• **Fresh Start.** If you are a Texas resident applying for transfer admission or readmission to UHD as an undergraduate, you may choose to apply for admission without UHD considering course credit and grades from college work that you completed 10 or more years ago. Students admitted under the Academic Fresh Start option receive no credit for coursework taken ten or more years prior to enrollment, even if a degree was earned. A student may apply for Academic Fresh Start only at the time of initial application at the Office of Admissions.

• **Orientation.** New freshmen will be given information about orientation upon acceptance to the university. It is recommended that students attend orientation.

#### Freshman Admission

To qualify for freshman admission, an applicant must be a graduate of an accredited high school or hold a GED high school equivalency and must have earned fewer than 15 college-level semester credit hours. Graduates of Texas public high schools must also have passed the state-mandated high school exit examination(s). Freshman applicants must file an application for admission, pay the non-refundable

application fee, and must have official copies of their high school, GED, and college transcripts mailed directly from the issuing institution to the University of Houston-Downtown by the application deadline.

The university strongly recommends that all applicants seeking freshman admission complete a college-preparatory high school curriculum.

#### College-Preparatory High School Curriculum

- English Language Arts and Reading—4 credits
  - English I
  - English II
  - English III
  - English IV
- Mathematics—3 credits
  - Algebra I
  - Algebra II
  - Geometry
- Science—3 credits
  - Integrated Physics and Chemistry
  - Biology, AP Biology, or IB Biology
  - Chemistry, AP Chemistry, or IB Chemistry
  - Physics, Principles of Technology I, AP Physics, or IB Physics
- Social Studies—3½ credits
  - World History Studies
  - World Geography Studies
  - US History Studies Since Reconstruction
  - US Government (½ credit)
- Economics—½ credit
- Physical Education—1½ credits
  - Foundations of Personal Fitness (½ credit)
- Health Education—½ credit
  - Health Science Technology
- Languages other than English—2 or 3 credits (1 credit is equivalent to a 1-year course)
  - Level I
  - Level II
  - Level III
- Fine Arts—1 credit
  - Select from Art I-IV, Dance I-IV, Music I-IV, or Theater I-IV
- Speech—3 credits
  - Select from Communication Applications, Speech Communication, Public Speaking, Debate, or Oral Interpretation.
- Technology Applications—1 credit
- Additional Components—2½ or 3½ credits (One credit is equivalent to a 1-year course)
- Electives—1 credit

A variety of other courses not listed here, including developmental and remedial courses, are not acceptable for the college preparatory program.

## Transfer Student Admission

Transfer applicants must file an application for admission, pay the nonrefundable application fee, and submit to the Office of Admissions official transcripts from all previously attended colleges, regardless of whether credit was earned, by the application deadline. Students applying for admission with less than 15 semester hours of college-level credit should submit an official high school or GED transcript as well as official college or university transcripts. Applicants must provide an official record of their TSI status. See page 5 for more information on TSI requirements.

## Articulation Agreements

UH-Downtown has worked with area community colleges to develop degree articulation agreements. Students planning to transfer to UH-Downtown are encouraged to direct their questions about the transferability of their courses to their community college counselor or to the Office of Admissions, 713-221-8522. Transfer students are also referred to page 94 for information on the Texas Common Course Numbering System. This system ensures that any course designated as a common course by UH-Downtown will be accepted in transfer as equivalent to the UH-Downtown course.

## Return of Former Students

Students who have attended UH-Downtown but who were not enrolled during the preceding long semester must apply for readmission. Students who have attended other colleges or universities since last attending UHD must submit official transcripts to the Office of Admissions. Students may apply for readmission online at [www.uhd.edu](http://www.uhd.edu).

## International Student Admission

Individuals who hold non-immigrant visas are classified as international students. International students seeking admission to the University of Houston-Downtown must apply through the Office of Admissions. Individuals who have applied for immigrant status, but who have not adjusted their status with the Immigration and Naturalization Service, also must follow the procedures below in order to obtain an I-20 immigration form.

• **Application.** A new international student must file an application for admission with the Office of International Admission and pay the nonrefundable application fee according to the dates listed below:

<b>Fall</b>	by May 1	after May 1
	\$60	\$100
<b>Spring</b>	by Oct 15	after Oct 15
	\$60	\$100

• **Transcripts.** Freshman students must provide official transcripts of secondary school scores, including mark sheets and date of graduation, in their original language. A certified English translation of all transcripts must be included if the originals are not in English. Transfer students must provide official transcripts from all colleges or

universities attended. If original transcripts are not in English, a certified translation must accompany the original documents. In addition, all foreign transcripts must be evaluated by an evaluation service recognized by UHD in order to receive transfer credit. Students transferring from another college or university in the United States must submit a transfer form that has been completed and signed by the foreign student advisor at the previously attended institution. This form must be returned to the Office of International Admissions prior to enrollment.

• **Affidavit of Support.** An Affidavit of Support must be submitted showing that a sponsor will be responsible for all educational and living expenses.

• **Bank Letter.** A certified bank letter, indicating that the sponsor is financially capable of meeting the student's education and living expenses, must be submitted. This letter must indicate, either in US dollars or in the local currency, the amount maintained in the account(s). The letter must have been issued within the past six months.

• **Language Proficiency.** A valid Test of English as a Foreign Language (TOEFL) score of 550 for the paper version or 213 for the computer-based version is required. Students with a TOEFL score of less than 550 may attend the English Language Institute (ELI) prior to beginning academic studies at the university. ELI students study noncredit English classes until they are either recommended by ELI for academic study or achieve a 550 TOEFL score. Graduates of ELI are able to enroll directly into the academic program at UH-Downtown without taking the TOEFL. Transfer students may be exempt from taking the TOEFL if they have passed 12 or more college-level hours in the United States, including Composition I and II, with a grade of C or better.

• **Health Insurance.** International students must carry health insurance for the duration of their studies. The University of Houston-Downtown requires that students have a minimum of US \$50,000 health insurance coverage, US \$7,500 repatriation coverage and US \$10,000 medical evacuation coverage. The deductible cannot exceed US \$500. Each semester, in order to receive a UHD health insurance waiver, students must provide updated proof of this coverage, written in English, specifying coverage from the beginning of the semester until the end of the semester. This proof must be in the form of a letter from the insurance company or embassy and it must be submitted to the Office of International Admissions no later than the Official Day of Record which appears in the University Calendar at the front of every *Class Schedule*. Otherwise, students will be charged for health insurance as a part of their registration fees.

## Early Admission

A high school student with a strong academic record who wishes to attend UH-Downtown during the summer prior to or during his or her senior year may apply for early admission. With the exception of the TSI requirement, a student applying for early admission must follow the procedures for admission as outlined in the section titled New and Transfer Student Admission. In addition to these requirements, written approval from the high school principal or counselor must be provided. The courses to be taken at UH-Downtown must be approved by both the high school counselor and the university advisor.

## Required Testing

### Texas Success Initiative

On September 1, 2003, the 78th Texas State Legislature replaced the Texas Academic Skills Program (TASP) with the Texas Success Initiative (TSI). In order to enhance student success, this state-mandated program evaluates college readiness in math, reading, and writing.

All students (unless exempt) entering UHD as undergraduates for the first time are required to take one of the following tests: ACCUPLACER, ASSET, COMPASS, or THEA (previously TASP). Students preparing for teacher certification through the Department of Urban Education must take THEA. Students who score below the minimum standard must enroll in the appropriate developmental courses. Additionally, they must meet with an advisor to develop an individualized success plan. Depending on the scores, the student may be required to retest and to enroll in a tutorial.

First-time-in-college students will be tested during Orientation. Transfer students must contact an Academic Advisor in Room 380-South or visit the Academic Counseling Center in University College (Room 655-South) to determine exemptions or the need for testing. Students enrolling at off-site locations may consult with the designated UHD advisor at the site.

#### Exemptions

1. Students who took the ACT less than five years ago with a composite score of 23 or higher. Individual Math and English scores must be 19 or higher.
2. Students who took the SAT less than five years ago with a composite score of 1070. Individual Math and English scores must be 500 or higher.
3. Students who took the TAAS less than three years ago with a composite score of 1770 or higher. Individual scores in Math must be 86 or higher and individual scores in Reading must be 89 or higher.
4. Students who have an associate's or bachelor's degree from an accredited institution.
5. Students who are on active duty in the armed forces of the United States and have been serving for at least three years prior to enrolling.
6. Students who, on or after August 1, 1990, were honorably discharged, retired, or released from active duty as a member of the armed forces of the United States or the Texas National Guard or service as a member of a reserve component of the armed forces of the United States.
7. Students who are transferring from a private or out-of-state, regionally accredited, college or university and who have satisfactorily completed college-level course work as determined by UHD. These students should submit transcripts to UHD as soon as possible because an official evaluation is required prior to granting an extension.
8. Students who have previously attended any institution and have been determined to have met readiness standards by that institution. The designation must appear on the transcript.

9. Students who are enrolled in a certificate program of one year or less (Level-One certificates, 42 or fewer semester credit hours or the equivalent) at a public junior college, a public technical institute, or a public state college.

10. Students who are not seeking degrees or certificates.

If you believe you qualify for one of these exemptions, show your transcript to an Academic Advisor in Room 380-South or to Gary Greer in University College (Room 655-South), 713-221-8277.

### Initial Score Requirements

Test	Minimum Standard Scores	Deviation Standard Scores
THEA	230R, 230M, 220W	201R, 206M, 205W
ASSET	41R, 38M, 40W	35R, 30M, 35W
COMPASS	81R, 39M, 59W	64R, 23M, 44W
ACCUPLACER	78R, 63M, 80W	61R, 42M, 62W

Essay score of 5 acceptable if student meets objective writing test standard.

Students who score below the minimum standard score must complete the following actions:

- Meet with an advisor to develop an individualized success plan.
- Enroll in the appropriate developmental courses.

#### Retesting

Students who score below the deviation standard score must complete the following actions:

- Meet with an advisor to develop an individualized success plan
- Enroll in the appropriate developmental courses
- Retest with ACCUPLACER or THEA
- Enroll in a tutorial if obligated in Math or Reading

If you have questions or need additional information regarding the Texas Success Initiative, you may contact the TSI Information Line at 713-221-8266. You may also view the FAQ upon which the information above is based at <http://www.thecb.state.tx.us/TSI/FAQ.htm#all>.

### Placement Testing

All students must comply with the university's placement and course sequencing policy. Students admitted to the university, whether first-time-in-college or transfer, will be formally assessed in basic writing, reading, and mathematical competence, either through testing or evaluation of transfer credit, prior to enrollment in their first semester. All students must remain enrolled in English, reading, and mathematics courses until they have satisfied developmental and core curriculum freshman-level requirements in those areas.

Credit earned prior to enrollment at the university is evaluated in accordance with the Texas Higher Education Coordinating Board policies and procedures.

### Developmental Education

As a result of placement testing, students may be required to enroll in developmental courses in reading, English, and/or mathematics. Upon successful completion of any required developmental courses,

students are required to enroll, and to continue to enroll, in their core curriculum course sequences in English composition and mathematics until these requirements have been satisfied.

Students who do not make satisfactory progress toward completing required developmental courses may be placed on academic alert, probation or suspension, or may be subject to other academic sanctions.

## Post-Baccalaureate Admission Policies and Procedures

Post-baccalaureate applicants must meet all undergraduate transfer admission requirements, but are required to submit only the transcript from the college or university granting the baccalaureate degree. Post-baccalaureate applicants seeking a baccalaureate degree from UHD must meet all requirements for transfer admission. Post-baccalaureate applicants desiring to take graduate courses, but not seeking a graduate degree, must comply with all requirements of the department offering the graduate degree. All post-baccalaureate students must see an academic advisor before registering for their first semester.

## Tuition and Fees

The amounts shown in this section are provided to better assist students in assessing the cost of enrolling at the University of Houston-Downtown. While this information is intended to be comprehensive, tuition and fees are subject to change without notice by action of the Texas Legislature and/or the Board of Regents of the University of Houston System. Students are responsible for any additional amounts due UHD, including changes to any fees and waivers, resulting from audits and corrections, such as registration assessing errors, changing from on-campus to off-campus courses or courses delivered via tape, television or online. For current information on tuition and fees, see the *Class Schedule* for the semester in which enrollment is planned or inquire at the Cashier's Office.

### Distance Education Fees

Students enrolled in courses at off-campus sites or in courses delivered via tape, television or computer modem/online are subject to a distance education fee.

### Residency Status

Residency status is determined in accordance with *Rules and Regulations for Determining Residency Status*, published by the Texas Higher Education Coordinating Board, and pursuant to Title 3, Texas Education Code. Information concerning residency requirements is available in the Registrar's Office.

In order to request a change in residency status for a given semester, a residency appeal form and all supporting documentation must be submitted to the Registrar's Office by the Official Day of Record found in the University Calendar of the *Class Schedule* for the semester to be considered.

## Tuition for Excessive Undergraduate Hours

Newly enrolled undergraduate students may be charged a tuition rate not to exceed that charged nonresidents, if they are a resident of Texas and the number of hours required for completion of their undergraduate degree is in excess by at least 45 hours. Details on this law are available from the Registrar's Office.

## Auditing

Students auditing courses pay the regular tuition and all other applicable fees. Senior citizens 65 years or over may audit free on a space-available basis. A *Request for Audit* form must be processed in the Registrar's Office by the Official Day of Record for the appropriate term. For further details regarding auditing, contact the Registrar's Office.

## Texas Rebate Program

As authorized by Texas Education Code (Section 54.0065), any student who enrolled for the first time since fall 1997 for their first baccalaureate degree from a Texas public university may be eligible for a rebate of a portion of their undergraduate tuition up to \$1,000. To be eligible, a student must complete his/her degree with no more than three hours attempted in excess of the minimum number of semester credit hours required to complete the degree, including transfer credits. The form to apply for this rebate can be found at the following online location:

[www.uhd.edu/facultyandstaff/busaff/documents/UHDTuitionRebateRequestForm.pdf](http://www.uhd.edu/facultyandstaff/busaff/documents/UHDTuitionRebateRequestForm.pdf)

## Fees

All new students at the university are subject to a \$10 general property deposit fee. State law allows the university to collect this deposit to insure against loss, damage, and breakage in libraries and laboratories. The deposit is refundable, UPON REQUEST, only upon permanent withdrawal or graduation. Charges for any loss, damage or breakage caused by the student are deducted from the deposit. Refund request forms are available in the Cashier's Office. Any general property deposit for which a refund request has not been made for a period of four years from the date of last attendance shall be forfeited and become a part of the student deposit fund to be used exclusively for scholarships.

In addition to tuition, all students at the University of Houston-Downtown are subject to student services, general use, University Center, student record, international education, library and computer access fees (see chart below). Some courses and services also require additional fees:

Application for admission (nonrefundable) .....	\$25
Late application for admission (nonrefundable) .....	\$75
Application for international admission (nonrefundable) .....	\$60
Late application for international admission (nonrefundable) .....	\$100
Laboratory (per laboratory class).....	Varies from \$10 to \$30
Distance ed: face-to-face or ITV at off-campus center ..	\$25 per SCH
Distance ed: computer modem/online .....	\$50 per SCH
Advanced standing exam .....	\$15
Graduation application.....	\$50
Late registration (nonrefundable) .....	\$50
Returned check .....	\$20
Orientation fee .....	\$25
Field trip .....	Amount necessary to defray cost of trip

International student service fee .....	\$45
Student parking registration: long semester.....	\$50
Student parking registration: summer session .....	\$25
Course attempted 3rd time.....	\$65 per SCH
Developmental course after earning 18 hours of developmental credit .....	\$65 per SCH

## Fall 2005 Undergraduate Tuition and Mandatory Fees

All fees subject to change without notice.

Hrs	Tuition		Mandatory Fees					
	Resident	Non Resident	Std Ctr	Std Svc	Int'l Educ	Incidental	Records Office	Library
20+	112.50/hr	388.50/hr	25	120	1	150	11	40
19	2137.50	7381.50	25	120	1	150	11	40
18	2025.00	6993.00	25	120	1	150	11	40
17	1912.50	6604.50	25	120	1	150	11	40
16	1800.00	6216.00	25	120	1	150	11	40
15	1687.50	5827.50	25	120	1	150	11	40
14	1575.00	5439.00	25	120	1	140	11	40
13	1462.50	5050.50	25	120	1	130	11	39
12	1350.00	4662.00	25	120	1	120	11	36
11	1237.50	4273.50	25	110	1	110	11	33
10	1125.00	3885.00	25	100	1	100	11	30
9	1012.50	3496.50	25	90	1	90	11	27
8	900.00	3108.00	25	80	1	80	11	24
7	787.50	2719.50	25	70	1	70	11	21
6	675.00	2331.00	25	60	1	60	11	18
5	562.50	1942.50	15	50	1	50	11	15
4	450.00	1554.00	15	40	1	40	11	12
3	337.50	1165.50	15	30	1	30	11	9
2	337.50	1165.50	15	20	1	20	11	6
1	337.50	1165.50	15	10	1	10	11	3

The university reserves the right to change tuition, other charges, and related requirements and regulations as necessitated by Board of Regents or legislative action.

International students pay out-of-state tuition and fees plus a \$45 international student service fee during long semesters. The international student service fee is \$20 each summer session. Student Health Insurance is also required for each semester. Students purchasing Health Insurance in the spring semester are covered thru the summer and need not purchase the insurance again for any summer semester. Students attending Summer sessions but who did NOT attend or pay for the Health Insurance in the Spring semester must purchase health insurance for the summer.

### Method of Payment

Students shall be provided with two alternative methods of payment of tuition and mandatory fees for each fall and spring semester for which they are enrolled.

- Full payment of all tuition and mandatory fees prior to the beginning of the semester, or

- Installment Plan - One-half payment of all tuition and fees plus a \$24 installment fee prior to the beginning of the semester, one-quarter payment prior to the start of the sixth class week, and the final one-quarter payment prior to the start of the eleventh class week. There will be a \$10 late fee added for each installment payment not received by the due date. Installment payments are also available online through Student e-Services.

Payment may be made by cash, check or credit card. Payment may be made in person, by mail, online (credit card only) or thru the payment drop box located in the hall next to the cashier's office on the third floor. Credit card payment (Visa, MasterCard or Discover) may be made over the web via UHD's *Student e-services* ([www.uhd.edu](http://www.uhd.edu)) or by fax to 713-226-5267. Please remember that mailed payments must be **received** by the posted payment deadlines to avoid having classes dropped or late fees assessed. UHD does **not** receive mail on Saturday, so payments must be received by Friday for Saturday deadlines.

Summer and minimesters require payment in full prior to the beginning of the semester. There are no installment options available for these semesters.

Health Insurance fees shall be paid prior to the beginning of the semester.

Most financial aid awards will be credited to your account automatically once processing is completed and you are registered for the same number of hours for which you are awarded. It is the student's responsibility to check their fee statement to assure that their funds have been posted to their account before the payment deadline. If the funds have not been posted, the student must make the payment or other arrangements with the cashier officer by the deadline to avoid losing their classes. Student fee statements can be viewed through UHD's *Student e-services* ([www.uhd.edu](http://www.uhd.edu)), the MY PAYMENT option.

Students receiving financial aid equal to, or in excess of, the total amount of tuition and fees prior to the beginning of the semester may not participate in the installment plan. The full payment of tuition and fees for the semester in which they are enrolled must be made upon issuance of that semester's financial aid funds before any excess amounts will be refunded.

Withdrawal from the university, for whatever reason, will not cancel the obligation to pay the full amount of the installment plan. If the amount of tuition and fees credited as a result of withdrawal is less than the remaining balance of an installment plan, the balance remaining is still the obligation of the student. If the credited amount is more than the balance of an installment plan, the remaining credit will be refunded to the student.

Any student who has elected to pay tuition and fees by installment, and who is delinquent in making payment by the final installment due date, is barred from registering at any institution in the University of Houston System until full payment, including delinquent charges, has been made. Each university maintains records and informs other institutions about the status of payments should the student attempt to register for courses or pursue a degree at any other component of the University of Houston System.

An additional default fee of \$50 is collected from any student who fails to make all installment payments by the end of the semester. This fee, in addition to all other amounts due, must be paid prior to the student's registering for courses during a subsequent semester.

## Financial Responsibility

Students are required to meet financial responsibilities to the university.

Students who write checks to the university on accounts with insufficient funds are assessed a \$20 service charge for each such check, regardless of the amount. If a check is returned as a result of bank error, the student must deal with the bank for reimbursement of the \$20 returned check charge paid to the university. If such a check is presented in payment of tuition and fees, the return of the check could also result in charges of late fees, and if the check is not redeemed within 10 days, the student may be dropped from all classes.

A student who does not meet financial responsibilities to the university may be subject to withdrawal from classes and may be referred to law enforcement authorities and/or the local credit bureau.

An official transcript shall not be given to or on behalf of a student who is in default on any payment due the university. The student will not be allowed to re-enroll at the university until all past due payments have been made, and a reinstatement charge may be required before enrollment is approved.

## Refunds

All refunds are made in accordance with the following rules and regulations:

### Concurrent Enrollment

Under the provisions of Section 54.062 of the Texas Education Code, the university will refund to students excess tuition paid as a result of being concurrently enrolled at more than one Texas public institution of higher education. Excess tuition applies for students taking only 1 or 2 semester credit hours at UH-Downtown. To qualify the student must:

- register at UH-Downtown after registering at the first institution;
- provide the university proof of being concurrently enrolled and paid at both institutions; and
- provide the university proof of the amount of tuition paid at the first institution.

All concurrent enrollment refund requests must be made in writing at the Business Affairs Office. The refund check will be mailed to the address on file in Enrollment Services.

### Complete Withdrawal

Students who officially withdraw from all university courses may be eligible for a refund of tuition and mandatory fees. Please refer to the current academic calendar for the refund schedule. No refund will be made to a student until full payment has been made on any outstanding balance. All 100% refunds incur a \$15 processing fee. Students who are withdrawing and who have received financial aid should consult the Office of Scholarships and Financial Aid.

### Partial Withdrawal

Students who officially drop some but not all of their courses within the first 12 class days of the fall or spring semester, or within the first four days of a summer session, are eligible for a 100% refund of tuition and fees for the dropped classes. After this period there is no refund for partial withdrawals. Refunds resulting from dropped classes will not be processed until after the ADD/DROP period has ended. Students who

are withdrawing and who have received financial aid should consult the Office of Scholarships and Financial Aid.

No refund will be made to a student who has not met all financial obligations, including full payment of installment balances. Refunds will be mailed to the address on the student's record file. If a student received financial aid, the refund may be credited to the appropriate financial aid account. The *Class Schedule* provides specific dates and deadlines.

## Scholarships and Financial Aid

### Estimated Costs

The following are estimated costs for attending UHD full time for the 2005-2006 academic year:

<b>Direct Costs</b>	Resident	Non-Resident
Tuition & Fees (12 hours)	\$3,326	\$9,950
Books and Supplies	\$1,020	\$1,020
<b>Indirect Costs</b>		
Living Expenses		
With Parents	\$4,016	\$4,016
Not with Parents	\$8,222	\$8,222
Transportation	\$3,140	\$3,140
Miscellaneous	\$3,588	\$3,588

The University of Houston-Downtown offers a variety of financial aid programs to assist undergraduate and graduate students in meeting educational costs. The programs include scholarships, grants, loans and part-time employment, which may be awarded in various combinations and amounts to meet individual student needs. Because funds are limited in many programs, it is important to begin the application process early and complete the necessary applications properly and on time. To receive priority consideration for Supplemental Equal Opportunity Grant and all state grant funds, all necessary applications must be on file in the Office of Scholarships and Financial Aid by April 1 of each year. Most federal and state aid is awarded on the basis of proven financial need rather than academic achievement. Most scholarships are awarded on the basis of academic achievement, talents and special skills rather than proven financial need.

### Financial Aid Programs

UH-Downtown participates in the following federal, state and institutional programs. Most programs have limited funds so early application is encouraged.

#### Grants

**Federal Pell Grant.** Any student who is a US citizen or permanent resident who has proven financial need. Amount of award varies depending on estimated family contribution and enrollment status.

**Federal Supplemental Equal Opportunity Grant.** Any student who is a US citizen or permanent resident that has proven financial need.

Priority will be given to those students who will also be receiving a Pell Grant.

**Leveraging Educational Assistance Partnership.** This grant, funded by both state and federal funds, is available to students enrolled at least half-time who demonstrate financial need. Must be a US citizen or permanent resident and classified as a Texas resident.

**TEXAS Grant.** This renewable state grant is available to recent Texas high school graduates who completed the recommended or advanced curriculum in high school or who received an associate's degree after May 1, 2001 who also demonstrate financial need. Students must enroll in a minimum of 9 hours and be classified as Texas residents.

**Texas Public Educational Grant.** This grant is funded by tuition revenues and is available to both Texas residents and non-residents. Students must demonstrate financial need to be eligible for this grant. Priority will be given to students who enroll at least half-time.

**License Plate Scholarship.** This grant is funded by revenues from UHD vanity plate fees. Students must enroll at least half-time, be classified as Texas residents and demonstrate financial need.

**Student Deposit Scholarship.** This institutional grant is awarded to students who enroll at least half-time and demonstrate financial need.

## Work-Study Programs

**Texas Work-Study and Federal College-Work Study.** These programs are designed for students who enroll at least half-time who demonstrate financial need. Awards are earned as wages in on- and off-campus positions. Must be a US citizen or permanent resident for federal work-study or be classified as a Texas resident for Texas work-study. Students who have relatives working at UH-Downtown must get clearance from the Office of Scholarships and Financial Aid to show they are in compliance with the university's nepotism policy.

## Student Loans

**Federal Subsidized Stafford Loan.** A low-interest loan with interest subsidies while student is enrolled at least half-time. Must be a US citizen or permanent resident and be enrolled at least half-time to participate. Maximum loan amounts vary with grade level in college. Additional application and loan counseling required.

**Federal Unsubsidized Stafford Loan.** A low-interest loan not based on financial need. Students may defer interest payments while enrolled at least half-time. Must be a US citizen or permanent resident and be enrolled at least half-time to participate. Maximum loan amounts vary with grade level in college. Additional application and loan counseling required.

**Parent Loans to Undergraduate Students.** A low-interest loan for parents of dependent students enrolled at least half-time. Parent must be a US citizen or permanent resident and student must be enrolled at least half-time to participate. Families do not need to demonstrate need to participate in this program. Additional application required.

**Texas B-On-Time Loan.** A no-interest loan to attend colleges and universities in Texas. If the student meets specified goals, the entire loan amount can be forgiven upon graduation.

## Application Procedures

At a minimum, students should complete the Free Application for Federal Student Aid (FAFSA) and the UHD Financial Aid Application.

Other forms or documentation may be required to determine eligibility for state and/or federal programs. When completing the FAFSA, students should list UH-Downtown's school code (003612) in Step Six. Students may request a financial aid application packet by calling 713-221-8041. Once a student has begun the application process, the Office of Scholarships and Financial Aid will notify the student of missing forms and/or documentation by mail. Students will also be mailed an award letter when their eligibility for aid has been finalized.

## Other Eligibility Requirements

### UHD Degree-Seeking Student Requirement

To be eligible for financial aid, students must be admitted as a degree-seeking student at UH-Downtown. Transient students (students taking classes to transfer toward a degree pursued at another institution) are not eligible for financial aid at UHD.

### Satisfactory Academic Progress Requirements

In order to receive financial aid, you must make progress toward your degree as defined by the Office of Scholarships and Financial Aid. There are three components to academic progress:

#### Grade Point Requirement

You must achieve and maintain at least a 2.0 cumulative grade point average on all course work attempted. Graduate students must achieve and maintain a cumulative GPA of 3.0.

#### Completion Requirement

You must complete at least 73% of all course work attempted.

#### Time Frame Requirement

You may attempt up to 170 hours without earning a degree. If you have earned your first bachelor's degree, you are allowed 150% of the hours remaining to complete your program. A complete copy of the Satisfactory Academic Progress Policy is available upon request. Please read this policy to see how your progress will be monitored. The Office of Scholarships and Financial Aid is required to review your entire academic record (regardless of the age of the record or whether or not aid was received) to determine if you are in compliance. If you are not in compliance, you will be notified in writing of your denial/suspension and the appropriate appeal procedure.

## Dropping Classes

Your final eligibility for aid will be based on the number of hours for which you are enrolled on the Official Day of Record listed in the *Class Schedule*. If you register and then drop classes prior to that date, your eligibility for aid will be RECALCULATED on your remaining hours as of the Official Day of Record. Since financial aid is released prior to the Official Day of Record, students who receive a financial aid payment based on more hours than those remaining as of the Official Day of Record may be responsible for repaying a portion of any financial aid received. Dropping classes may affect your eligibility for future aid. You should consult the Satisfactory Academic Progress Policy to determine if dropping classes will affect your eligibility for aid.

## Total Withdrawal from School

If you register and then totally withdraw from all classes, your eligibility for aid will be RECALCULATED based on the number of days you attended class. If you totally withdraw from all classes prior to the first class day, you must repay any and all financial aid received. If you

withdraw on or after the first class day, you may have to repay a portion of any cash financial aid received. See Return of Title IV Funds below. If you totally withdraw, you should consult the definition of Satisfactory Academic Progress to determine if your withdrawal will affect your eligibility for future aid.

## Return of Title IV Funds

The Higher Education Amendments of 1998 changed the formula for calculating the amount of aid a student and school can retain when the student totally withdraws from all classes. Students who withdraw from all classes prior to completing 60% of the semester will have their eligibility for aid recalculated based on the percent of the semester completed. For example, a student who withdraws completing only 30% of the term will have "earned" only 30% of any Title IV aid received. The remaining 70% must be returned by the school and/or the student. The Office of Scholarships and Financial Aid encourages you to obtain a complete copy of this policy from the office and read it carefully. If you are thinking about withdrawing from all classes PRIOR to completing 60% of the semester, you should contact the Office of Scholarships and Financial Aid to see how your withdrawal will affect your financial aid.

## Academic Scholarships

Academic scholarships at UH-Downtown are intended to recognize and reward outstanding achievement and community involvement. Applicants for most scholarships, therefore, do not need to show evidence of financial need to apply. The application deadline for most UH-Downtown scholarships is April 1 of each academic year. However, the Office of Scholarships and Financial Aid may accept applications at other times during the year if scholarship funds are available. Interested students should contact the Office of Scholarships and Financial Aid as soon as they decide to apply for admission at UHD to find out what scholarships are available. Many academic departments at UHD also award scholarships. Students are encouraged to contact the department of their major to find out what departmental scholarships are available.

## Tuition and Fee Exemptions Hazlewood Act for Veterans

State law provides that a veteran who is a legal Texas resident is exempted from tuition and certain required fees, but not from deposits, if the following criteria are met. The veteran:

- has resided in Texas for a period of not less than 12 months prior to the date of registration;
- served in the armed forces or in certain auxiliary services for more than 180 days;
- was a bona fide legal Texas resident at the time of entering such service;
- was honorably discharged (except those who were discharged because of being over the age of 38 or because of personal request);
- has exhausted all veteran's educational benefits;
- is not eligible for federal grants, including federally sponsored grants provided for veterans by the US government; and
- is not be in default on any federal or state student loans.

To obtain this exemption, the veteran must submit an application with attached evidence to the Office of Scholarships and Financial Aid by the Official Day of Record of the term for which the veteran is applying for the Hazlewood benefits. Hazlewood applications must be renewed each year.

## Benefits for Children of Texas Veterans and Children of Disabled Firemen or Peace Officers

Exemption from payment of certain fees also extends to children of members of the armed forces who were killed in action or died while in the service and to the children of disabled firemen and peace officers where injury or death was sustained in the line of duty. Contact the Office of the Scholarships and Financial Aid for proper procedures.

## Academic Resources

### Library

The W.I. Dykes Library is located on the entire fifth floor of the One Main Street building, with additional periodical storage and offices on the sixth floor. It is entered from the Main Street elevators or stairwells. The library has holdings of more than 259,000 books, 37,000 bound periodical volumes, 148,000 microforms, and 1,700 current periodicals and serial subscriptions. The library also has a collection of more than 1,900 AV items, including compact discs and videos that are available for checkout or for listening and/or viewing in the library. Video, compact disc, and audio cassette players are installed for use in the library, if needed. The library has more than 70 computers available for accessing the library's online catalog, using the electronic databases for finding articles or citations, and for searching the Internet. The library's web site is [www.uhd.edu/library/](http://www.uhd.edu/library/).

The UHD Online Catalog lists the books and journals available in the W.I. Dykes Library and at most other University of Houston campus libraries. Books from other UH system libraries may be requested electronically by clicking the blue "request" button in the online library catalog. Access to the catalog and electronic databases from a home computer or from UHD computer labs supports research 24 hours per day. The library's electronic resources include databases that may be searched to identify articles on a topic. Search results can be printed, downloaded to a floppy disk, and/or emailed. Faculty, students and staff can connect to these electronic resources from any location with their e-services ID and PIN. The library network also provides access to the online catalogs of other libraries in the Houston area and to a wealth of Internet resources.

The reference collection in the library contains encyclopedias, dictionaries, almanacs, directories, and many other sources. The full text of journal, magazine, and newspaper articles in electronic form can be found by using the library's full text databases which include Academic Search Premier, Business Source Premier, Criminal Justice Index, Encyclopedia Britannica, Houston Chronicle, JSTOR, Omnifile, NetLibrary, New York Times and Wall Street Journal. Many additional electronic resources for finding citations or information about a topic can be accessed through the library's web site as well. The library also houses the Texas Education Collection, including teacher editions of select Texas state-adopted textbooks for K-12. This collection is supplemented by holdings in juvenile books.

Reference librarians at the Information Desk offer individual assistance in utilizing the online catalog, print materials, or any of the electronic library resources. In addition, UHD students, staff, faculty and alumni can use the library's "Ask a Librarian" e-mail service to get help with research questions. Tours and classes may be scheduled for group instruction.

Coin and card-operated machines are maintained for photocopying of materials. The library has two computer workstations reserved for visually impaired students. Anyone with special physical or communication needs can ask for assistance from any library service desk or phone the library to schedule an appointment for special services. Study rooms are also available for groups of three or more students. If the W.I. Dykes Library does not own a book or journal article needed by a student, faculty, or staff member, then the library's Interlibrary Loan Department can borrow the material from another library within the country. Interlibrary Loan is primarily a free service. If there will be a charge, permission will be requested before UHD obtains material for you.

The library has additional services for UHD distance students. Just go to <http://www.uhd.edu/library/dised.html> on the library's web site, and you will have access to forms for requesting books and articles, reference assistance, and information on off - campus access to electronic databases.

A UHD identification card is used as the library card and must be presented when checking out materials. The library is open seven days a week during Fall and Spring semesters and Monday through Saturday during Summer semesters. Check with the library for intersession and holiday hours. For reference information call 713-221-8187; for circulation information call 713-221-8186.

## Academic Support Center

The Academic Support Center houses the Math Lab, Reading Center, and Writing Center. Each lab provides one-on-one tutoring with UHD faculty members and peer tutors. The ASC also has computing equipment with learning support software to help students develop mathematical, reading, writing, and THEA skills. The center is located in room 925-North of the One Main Street building and the hours of operation are structured to fit day, evening, and weekend students' schedules. The ASC is open to all currently enrolled UHD students and students may attend as often as they like. The center's web site is located at [www.uhd.edu/academic/support.htm](http://www.uhd.edu/academic/support.htm)

## Computing Services

The University of Houston-Downtown offers state-of-the-art computing equipment and software to its students, faculty, and staff. The 16,000-square-foot Academic Computing Lab houses more than 300 PCs and printers. This facility, which is available to any currently enrolled student, has five electronic classrooms, and special devices to aid disabled students. Academic Computing teaches short courses, develops documentation and provides group and individual consulting to its constituents.

Special purpose labs are available to students. The Department of Engineering Technology maintains several computer labs for engineering applications. The Department of Computer and Mathematical Sciences has four computer classrooms of PCs for instruction in computer science, mathematics, and statistics. The Department of Natural Sciences has a Science Learning Center that contains two state-of-the-art electronic classrooms, and a Science and

Technology Demonstration Laboratory. The College of Business has a classroom for teaching word processing, keyboarding, and computer information systems. The Academic Support Center offers learning support software for individual work in developing reading, writing and mathematical skills. There are over 20 specialized departmental computing labs service subject specific needs.

## Student e-Services

UH-Downtown offers a variety of student e-services on the web that allow students to go online rather than stand in line to perform administrative and academic functions that have traditionally required face to face interaction on campus. UHD's student e-services functions as a one-stop student portal. In addition to providing access to GatorMail (see below) and a range of general information, such as the course schedule and the university catalog, many student-specific functions are available. Students may apply for admission, determine their financial aid status, determine their eligibility for registration, register for classes if they meet certain requirements, view their grades, update their address and other directory information, and obtain information about their computer account.

## GatorMail

All enrolled students are issued a GatorMail email account. Students can obtain their GatorMail username and password via Student e-services ([www.uhd.edu/eservices](http://www.uhd.edu/eservices)). UHD assigns student email accounts as a means of communication between faculty, staff, and students. Students should check their email on a frequent and consistent basis in order to stay current with University-related communications

## Technology Teaching and Learning Center

The Technology Teaching and Learning Center (TTLC) assists faculty to develop and implement interactive teaching and learning technologies that increase the effectiveness of their pedagogy. Offering a wide range of programs, tools, and activities, the TTLC houses five electronic classrooms, a training/teleconference room, an instructional television studio, control booth and editing suite, a faculty development area, a multimedia production lab, an emerging technologies showcase, and an instructional technology library.

The TTLC Group provides web and instructional design services, training, consultation, and support for faculty who develop online courses at UHD. Students interested in taking online courses should visit the online orientation at: [uhdonline.uhd.edu/uhdonline/orientation/checkitout.htm](http://uhdonline.uhd.edu/uhdonline/orientation/checkitout.htm).

## Multimedia Services/Instructional Television

Multimedia Services/Instructional Television provides instruction and presentation support and media production facilities for faculty, staff and students. Multimedia Services distributes and maintains presentation equipment in classrooms, lecture halls, the Special Events Center, and the Wilhelmina Cullen Robertson Auditorium. The staff assists clients in creating and producing audio, video, photographic, streaming media and multimedia presentations. Facilities include the television studio, digital editing suites, and training rooms equipped with videoconference equipment.

The instructional television component of Multimedia Services oversees the transmission and operation of all interactive distance-learning classes that connect UHD to off-campus learning sites. They also provide videoconference and satellite downlink services for the

university community. Multimedia Services is located within the TTLC in Suite 729-A.

## Academic Policies-Undergraduate

### Courses and Course Credit

#### Course Load

A regular undergraduate course load during the fall and spring terms is 15 to 16 semester credit hours or five courses. Twelve semester credit hours is considered the minimum full-time load. For students who are employed 40 hours per week, the recommended load is two courses, or six credit hours. The regular load for one summer session or a minimester is six to eight credit hours. Students who wish to enroll in 20 credit hours or more in a long semester or nine hours or more in a summer session must receive approval from the appropriate academic dean. For information on graduate course load consult specific master's degree handbooks.

#### Schedule Changes

Schedule changes may be made in person or online, and may require approval by an academic advisor. Instructions are found in each semester's *Class Schedule*.

#### Discontinued Classes

The university reserves the right to discontinue classes or otherwise alter the class schedule. Whenever possible, enrollment in an alternate course is completed through an administrative change form initiated by the department responsible for discontinuing the class.

#### Classification

Undergraduate classification is determined by the number of credit hours which have been completed: 0-29 semester hours: freshman; 30-59 semester hours: sophomore; 60-89 semester hours: junior; and 90 semester hours and above: senior. Master's classification is determined by admission status.

#### Class Attendance

Students are expected to attend all class sessions. The responsibility for withdrawing from a course lies with the student. Departments and faculty members may have other attendance policies for their courses.

### Transfer Credit-Undergraduate

#### Acceptance of Transfer Credit

Transfer students must submit official transcripts from all colleges or universities attended as a part of the admission process (See New and Transfer Student Admission, page 3). An evaluation will be performed during a student's first semester at the university. Course work transferred or accepted for credit toward an undergraduate degree must represent collegiate course work relevant to the degree, with course content and level of instruction resulting in student competencies at least equivalent to those of students enrolled in the institution's own undergraduate degree program.

UH-Downtown may not accept transfer credit for courses in which grades of D have been earned except for courses which are part of the approved transferable core curriculum.

Courses transfer on the same level and with the corresponding number of hours as earned at another institution. Courses taken at a junior or community college do not transfer as upper-level credits.

Courses taken at other colleges that do not correspond to courses offered by UH-Downtown may transfer as elective credit, with the approval of the appropriate academic dean.

With consent of the appropriate dean, the chair of the department in which the student is majoring will make the decision concerning application of transfer credit to the degree program.

In general, UH-Downtown does not award transfer credit for vocational courses that are not considered part of a standard college curriculum. Students may petition the academic dean of the college in which they are seeking their degree, who may agree to award credit for such courses in exceptional circumstances.

Students should direct questions concerning transfer credit to their academic advisor or degree program coordinator.

#### Evaluation of Transfer Credit

Transcripts will be evaluated for institutional transfer credit upon completion of the admission application process. Students accepted later in the admission cycle may not have their transcripts evaluated until after they have actually enrolled. Transfer work will be further evaluated for applicability to the student's chosen degree plan by the degree-granting college.

Students who apply to UHD while they are attending another institution must submit two official transcripts. The first should be sent at the time of application and should reflect the student's current enrollment. A second must be sent as soon as grades are available for those classes.

#### Transferring Credits from Other Countries

Students applying for admission with college credits from other countries must submit an evaluated transcript from a credential evaluation service recognized by the university. Credits will be granted based on the recommendations of the evaluating service with respect to University of Houston-Downtown degree requirements at the time of enrollment.

Information and brochures from evaluating services are available at the Office of Admissions and online at [www.uhd.edu/admissions](http://www.uhd.edu/admissions).

#### Transfer Credit Dispute Resolution Procedures

Students who receive written notification from Office of Admissions that a lower-level course taken at another Texas public institution of higher education has not been accepted may challenge denial of credit by UH-Downtown. To initiate a dispute action, a Transfer Dispute Resolution form must be completed. The form and instructions for its completion are available in the Office of the Vice President for Academic Affairs, Room 950-South.

#### Credit by Examination

UH-Downtown accepts up to 24 hours of credit by examination. Credit by examination may be obtained on the basis of several types of examinations. Nationally recognized standardized examinations such

as the College Level Examination Program, and the College Board's Advanced Placement program may be used. Examinations widely used within a professional field and locally designed examinations also may be used. Students may not attempt to receive credit by exam for any course in which they are or have been enrolled at an accredited institution; however, students may attempt credit by examination for courses in which they are or have been enrolled at a non-accredited institution.

Nationally standardized examinations are administered through Testing Services; all other examinations are administered through the responsible department.

If credit is not awarded, a period of six months must elapse before application for re-examination will be considered. Appropriate fees are charged for each examination. No student may attempt the exam for a particular course more than twice.

Credit may be granted for professional certification and training received from armed forces and service schools. With consent of the appropriate dean, the chair of the department in which the student is majoring will make the decision concerning the applicability of such courses to the degree program.

Credit received by examination does not fulfill residency requirements for graduation.

No grade is awarded for courses for which credit has been obtained by exam, nor are hours received for such courses included in the calculation of grade point average for graduation.

Listed below are the subject examinations for the Advanced Placement Program and the College Level Examination Program.

#### College Level Examination Program

Examination	grade	earns credit for	hrs
American Government	50	POLS 2304	3
American Literature	50	ENG 2311 & 2312	6
Analyzing & Interpreting Literature	50	ENGL 2341	3
College Algebra	50	MATH 1301	3
College French	50	FREN 1401 & 1402	8
College Spanish	50	SPAN 1401 & 1402	8
English Literature	50	ENG 2313 & 2314	6
Freshman College Composition	50	ENG 1301	3
History of the US I	50	HIST 1305	3
History of the US II	50	HIST 1306	3
Human Growth & Development	50	PSY 2310	3
Information Systems & Computer Applications	50	CIS 1301	3
Introductory Psychology	50	PSY 1303	3
Introductory Sociology	50	SOC 1303	3
Principles of Accounting	50	ACC 2301 & 2302	6
Principles of Macroeconomics	50	ECO 2301	3
Principles of Microeconomics	50	ECO 2302	3

#### College Level Examination Program (continued)

Examination	grade	earns credit for	hrs
Trigonometry	50	MATH 1302	3
Western Civilization I	50	HIST 2311	3
Western Civilization II	50	HIST 2312	3

#### Advanced Placement Program

Examination	grade	earns credit for	hrs
Biology	3 or 4	BIOL 1301/1101	4
	5	BIOL 1301/1101 & 1302/1102	8
Chemistry	3 or 4	CHEM 1307/1107	4
	5	CHEM 1307/1107 & 1308/1108	8
Computer Science A	3	CS 1410	4
English: Language & Composition	3	ENG 1301	3
English: Literature & Composition	3	ENG 1302	3
Mathematics: Calculus AB	3	MATH 2401	4
Mathematics: Calculus BC	3	MATH 2401	4
Physics B	3 or 4	PHYS 1307/1107	4
	5	PHYS 1307/1107 & 1308/1108	8
Physics C: Mechanics	3	PHYS 1307/1107	4
Physics C: Electricity & Magnetism	3	PHYS 1308/1108	4
Psychology	3	PSY 1303	3
Spanish	3 or 4	SPAN 2301 & 2302	6
	5	SPAN 2301, 2302 & 3301	9

#### Elective credit

##### Directed Studies Courses

A directed studies course allows students to work directly with a faculty member on an individual basis. This type of study is intended to expand the curriculum and may not duplicate an organized course. A directed studies course requires a term paper, research study or comparable project.

Students wishing to enroll in a directed studies course must be juniors or seniors and have a grade point average of at least 3.0, with a grade point average of at least 3.3 in the specific area of the directed studies course.

Procedures for enrolling in directed studies courses are available in each academic department. Degree requirements may limit the number of hours of directed studies that may be applied.

##### Auditing Courses

To audit a course is to enroll in a course on a noncredit basis. Audit students pay the regular tuition and all other applicable fees as set forth in the current Catalog. Senior citizens 65 years or over may audit

free on a space-available basis. A change to credit status may not be made after the student has registered to audit a course. Changes from credit status to audit status in a course must be made prior to the end of the Official Day of Record. A Request for Audit form must be processed in the Registrar's Office by the Official Day of Record for the appropriate term. Students wishing to audit courses should contact the Registrar's Office for further details.

## Grading System and Standards

### Academic Honesty

The Academic Honesty Code is embraced by all members of the University of Houston-Downtown academic community and is an essential element of the institution's academic credibility. The Honesty Code states "We will be honest in all our academic activities and will not tolerate dishonesty." The purpose of the Academic Honesty Policy is to deal with alleged violations of the Honesty Code in a fair and consistent manner. The policy is administered jointly by students and faculty. It is each student's responsibility to read and understand the Academic Honesty Policy. It may be found in the *Student Handbook*.

### Grading System

The following grades are included in the calculation of grade point averages:

Grade .....	Grade Points
A Superior .....	4.0
B Above Average .....	3.0
C Average .....	2.0
D Below Average .....	1.0
F Failure .....	0.0

The following grades are not included in the calculation of grade point averages:

Grade	
A* .....	Non-credit grade
B* .....	Non-credit grade
C* .....	Non-credit grade
I .....	Incomplete
IP .....	In Progress
Aud .....	Audit
S .....	Satisfactory (passing)
U .....	Unsatisfactory (not passing)
W .....	Withdraw

#### I (Incomplete)

An incomplete grade is given only when an unforeseen emergency prevents a student from completing the course work and only with the instructor's approval. A grade of I will be changed to a passing grade if the missing work is completed satisfactorily by the deadline set by the instructor but no later than the end of the long semester immediately following the term in which the grade was received. An incomplete grade that is not removed by this deadline becomes an F.

Repetition of a course for which an incomplete grade was received does not affect resolution of the original grade.

An incomplete grade earned in a student's graduating semester is computed as an F in determining grade point average.

#### IP (In Progress)

The grade of IP may be given in some developmental courses and the Writing Proficiency Exam. In the calculation of grade point average, a grade of IP is treated as a W. To receive credit for a course in which an IP was assigned, a student must register for the course again and earn a passing grade.

#### S (Satisfactory)

The grade of S may be earned in field experience courses and certain other courses. Credit received with a grade of S is not part of the grade point average calculation.

#### W (Withdrawal from Courses)

Students will not receive a grade if they withdraw from a course by the Official Day of Record.

Students automatically receive a grade of W for any course from which they withdraw after the Official Day of Record but before the end of Thursday of the 10th week during a long term and Thursday of the fourth week during a summer term.

Official Day of Record and withdrawal deadlines are published in the University Calendar online ([www.uhd.edu/AcademicCalendar](http://www.uhd.edu/AcademicCalendar)) and may be found in the *Registration & Information Bulletin*.

Class days are defined as days on which the university has one or more classes scheduled; not the days for which an individual student is scheduled for his/her particular classes.

Additional policies applicable to graduate students are published in the specific master's degree handbooks.

### Grade Point Average (GPA)

The grade point average is a measure of a student's academic achievement. Grade point averages are computed by multiplying the grade point value by the number of credit hours in each course, and then dividing the sum of all grade points obtained by the total number of hours attempted. The following formula represents the method of computing grade point average:

$$\frac{\text{Total Number of Grade Points}}{\text{Total Number of Semester Hours}} = \text{Grade Point Average}$$

The number of grade points earned for each course equals the hour credit value of the course multiplied by the points awarded for grades received. Grades of I, S, U, IP and grades marked with an asterisk (\*) in the table above are not counted in the calculation of the grade point average, except for graduation. Grades of I will be calculated as F grades in determining grade point average for graduation.

Undergraduate students must meet a graduation requirement of a minimum 2.0 grade point average calculated on all grades earned at UH-Downtown. Some departments may specify more stringent requirements, such as a 2.5 grade point average in the major or a 2.5 grade point average in all upper-level courses.

Graduate students must meet a graduation requirement of a minimum 3.0 grade point average.

## Appeal of Grades

Any grade which a student believes to be in error should be appealed, first to the instructor, then to the appropriate department chair, and finally to the appropriate dean. If an appeal is not made within one calendar year after the close of the semester in which the grade was received, the grade will be considered final and no appeal will be heard.

## Dean's List

The Dean's List recognizes students who have achieved superior academic performance during the fall or spring semester. To be included on the Dean's List for a specific semester, a student must, during that semester, complete at least nine semester hours of college-level work, earn at least a 3.5 grade point average, and receive no grade of I or F. The Dean's List is published by the Provost's Office at the end of each fall and spring semester.

## Repeated Course Policy

Effective Spring 1994, when a course is repeated, the last grade received in the course will be used in computing the grade point average.

## Graduation with Honors

Students who complete bachelor's degree requirements with exceptionally high grade point averages receive degrees with honors. Those who earn a cumulative grade point average of 3.75-4.00 graduate *summa cum laude*, while a cumulative grade point average of 3.50-3.74 is required for *magna cum laude*. A grade point average of 3.25-3.49 is needed to graduate *cum laude*. In the computation of this average, all courses attempted at UH-Downtown are counted, including courses repeated, failed and passed, but excluding courses with grades of S, W or IP.

For candidates who complete some portion of their college work at other institutions, the cumulative grade point average of all work attempted at UH-Downtown and the grade point average of all college work is computed; the lower of the two averages is used as the basis for determining honors.

Students not eligible for *cum laude*, *magna cum laude* or *summa cum laude* honors may be eligible for College Honors. Students who have earned a GPA of 3.50 or greater in their last 60 hours attempted at UH-Downtown, including at least 30 upper-level hours, are eligible to receive the designation, "College Honors."

## Academic Probation and Suspension

### Probation

Academic probation is a warning to the student that his or her academic record has been unsatisfactory. A student who is not making satisfactory progress toward meeting graduation requirements may be placed on academic suspension if this record does not improve.

A student is placed on academic probation at the end of any term in which his or her cumulative GPA falls below the specified minimum cumulative GPA shown below. The cumulative GPA for academic probation and suspension is computed on all grades earned at UH-Downtown. Grades of I, IP, S or W are not counted.

Semester hours	Minimum Required Cumulative GPA
1-29	1.70
30-59	1.90
60 or more, or upon declaration of a major	2.00

Transfer students on suspension from their most recent institution of higher education will be placed on academic probation if admitted to UH-Downtown.

Students will remain on academic probation until their cumulative GPA reaches the specified minimum cumulative GPA or until they are suspended. Only courses taken at UH-Downtown may be counted in removing a student from academic probation.

### Suspension

Suspension means that a student is ineligible to register for classes. Students on academic probation will be suspended at the end of any term in which their cumulative GPA falls below the specified minimum cumulative GPA unless they earn a minimum GPA of 2.0 in that term.

A student's first academic suspension will become effective at the beginning of the next term and will remain in effect for that term only. The student may be granted earlier readmission at the discretion of the student's academic dean or the dean's designated representative.

The second time a student is placed on academic suspension, the length of the suspension will be indefinite. The student may be considered for readmission after one term and only upon appeal to the students' academic dean or the dean's designated representative.

The third time a student is placed on academic suspension, the suspension will be permanent. Any appeals for readmission following a permanent suspension must be initiated at the academic dean's office. The final decision rests with the Vice President for Academic Affairs and Provost.

## Academic Amnesty

After a four-year absence, a student returning to UH-Downtown may petition his or her academic dean for academic amnesty. To be eligible, the student must not have attended any institution of higher education for the four-year period immediately preceding readmission to UH-Downtown. In addition, the student also must complete 24 semester credit hours with a minimum grade point average of 2.5 following readmission. The amnesty provision applies only to the application of credit toward a degree and computation of the student's grade point average. No grades on the student's permanent record are altered or deleted.

If academic amnesty is granted, all courses with grades of F or D earned prior to readmission are ignored in applying credit toward fulfillment of degree requirements and in future computations of the student's grade point average. A student granted academic amnesty relinquishes all rights to graduation with honors and any other academic recognition based on grade point average.

## Student Records

### Transcripts

Requests for official or student copies of transcripts are made to the Registrar's Office. Requests for UHD transcripts may be made online

or by mail. All requested transcripts will be processed within 2 business days during the semester and within 3 business days during peak registration and grade processing periods. Please note that business days exclude University holidays and/or weekends

Any official transcripts submitted to UHD from other institutions become the property of UHD. If you have any questions or have not received your transcript, please contact the Registrar's Office.

## Release of Student Records

UHD has a policy in conformity with the Family Educational Rights and Privacy Act (FERPA) covering the release of student records.

Student rights include the following:

1. Students have the right to inspect and review their education records within 45 days of the day the university receives the request.
2. Students have the right to request amendment of their education records that they believe are inaccurate or misleading.
3. Students have the right to consent to the disclosure of personally identifiable information in their education records, except to the extent that FERPA authorizes disclosure without consent.
4. Students have the right to file a complaint with the US Department of Education concerning alleged failures by the university to comply with the requirements of FERPA.

## Directory Information

At its discretion UHD may provide directory information to the general public without student consent. Directory information is defined by FERPA as follows:

- name
- address
- telephone number
- e-mail address
- date and place of birth
- dates of attendance
- most recent previous education institution attended
- major and minor fields of study
- degree/awards received
- participation in officially recognized activities

Students may request that directory information be withheld from the public by contacting the Registrar's Office at any time during the semester. Such requests must be made in writing and will remain in place until the student directs the office in writing that it is to be removed.

## Disclosure of Education Records

In accordance with FERPA and at its discretion, UHD will disclose information from a student's education records without the written consent of the student to school officials who have a legitimate educational or administrative interest in the records. A school official is defined as a person employed by the university in an administrative, supervisory, academic, or support staff position (including the university's police department and health care staff); a person or company with whom the university has contracted (such as an attorney, auditor, or collection agent); a person serving on the Board of

Regents; or a person assisting another school official in performing his or her official duties.

## Procedure for Inspecting Education Records

A student has the right to inspect his or her education records and challenge the contents. To review records, a student must make a request in writing to the Registrar's Office. The request must identify the record or records he or she wishes to inspect.

## Procedure for Amending Education Records

If a student believes the information in his or her education record contains information that is inaccurate, misleading, or in violation of the student's rights of privacy, the student should submit a written request for amendment to the registrar. The request should clearly identify and correct the inaccuracy. The university will notify the student within a reasonable time regarding the request. If the request for amendment is denied the student has the right to a hearing. This procedure does not govern grade appeals.

## Change of Name and Address

Any change in name or address must be reported to the Registrar's Office and to the Financial Aid Office if applicable. Addresses may also be changed online at [www.uhd.edu](http://www.uhd.edu). Name changes must be supported by legal documentation.

## Graduation Requirements

### General Degree Requirements for Graduation

For degree completion, at least 25% of the semester credit hours must be earned through instruction offered by UH-Downtown.

In addition to completion of specific degree requirements, all students must meet the requirements described below. The final 30 semester credit hours of course work toward the degree must be taken at the University of Houston-Downtown. At least 18 of these hours must be at the upper level and be approved by the student's major department. Only the appropriate academic dean may waive any portion of these requirements and only upon petition by a student who has extraordinary reasons.

A minimum grade point average of 2.0 calculated on all grades earned at UH-Downtown is required for graduation. In addition, a grade point average of 2.0 is required for all courses taken at UH-Downtown that apply toward the degree.

Students enrolled in any degree program at the University of Houston-Downtown who wish to take courses at another college or university (including any other institution in the UH System) and apply the credits toward the degree should consult with their degree program officer to be sure the courses apply to their degree program. A student taking courses under these provisions is responsible for having an official transcript from the second campus forwarded the Office of Admissions at UH-Downtown. The student also must request that an official evaluation of this transcript be made and reported to the appropriate degree program officer.

### Graduation under a Specific Catalog

A student usually graduates under the degree provisions of the Catalog in effect at the time of his or her first completed term of enrollment; where enrollment is defined as registration for and

completion of at least one course. Students have the option of graduating under the Catalog in effect at the time of their major declaration or any subsequent Catalog. If degree requirements change during the time of the student's enrollment, the student may be required to meet the new degree requirements if the number of hours the student must take has not increased.

#### **Exceptions:**

- No Catalog more than 10 years old may be used.
- Students who interrupt their program for more than two consecutive long semesters for reasons other than military service shall be governed by the Catalog in effect at the time of re-entry to the university.
- Students whose enrollment is interrupted by military service must re-enroll within one year from date of separation from the service and no more than five years from the beginning of military service in order to remain under the provisions of the Catalog in effect at the time of original enrollment at the university.
- Students forced to withdraw for adequate cause before completion of their degree may upon readmission petition to graduate under the Catalog in effect at the time of original enrollment.
- Students who change their major shall be governed by the Catalog in effect at the time of the change.

### **Application for Graduation**

Any student who plans to graduate from the University of Houston-Downtown must file an application for graduation with the degree-granting college and with the Registrar's Office. Deadlines for filing applications and paying fees are announced in the calendar published in each *Class Schedule*. A graduation fee is required at the time of filing the application. If the student does not complete the requirements for the degree, application procedures must be repeated.

### **Commencement Exercises**

Only students who complete all degree requirements and file an application for graduation with the degree-granting college may participate in the commencement exercises. The final decision on eligibility for graduation and participation in commencement exercises rests with the appropriate academic dean.

Students graduating with honors are so designated in the commencement program and wear special insignia with their academic regalia. Designation of honors for May and December graduates reflects only grades earned prior to the final semester. Designation of final honors on the transcript and diploma, however, is based on all work attempted.

Arrangements for obtaining academic regalia may be made through the university bookstore. Deadlines for ordering and paying for regalia are announced for each commencement.

### **Additional Bachelor's Degree**

To qualify for a second UH-Downtown bachelor's degree, the candidate must:

- earn a minimum of 30 semester hours credit more than needed to receive the degree requiring the fewest hours;
- meet the general and specific requirements for each degree; and

- have 30 semester hours of residence credit at UH-Downtown for each degree awarded by the university.

## **Student Services and Enrollment Management**

The University of Houston-Downtown's Division of Student Services and Enrollment Management, under the direction of the Vice President, offers a wide variety of services, programs and activities designed to augment the academic experience of students.

The division includes the Office of Student Services and Enrollment Management, Admissions, Registrar, Career Services, Student Health Services, Scholarships and Financial Aid, Student Activities & Events, Sports & Fitness, and Testing Services.

### **Office of Student Services and Enrollment Management**

Suite 390-South, 713-221-8100

The Office of Student Services and Enrollment Management serves as a resource to students by distributing information, assisting with problem resolution and interpreting university policies, rules and procedures. This office is also responsible for carrying out the university's student discipline policies. Among the information Student Services and Enrollment Management provides to students and the university community are the UHD Student Handbook, UHD Registration & Information Bulletin and the Campus Information Board.

### **Office of Admissions**

Room 350-South, 713-221-8522

The Office of Admissions provides information regarding the university to all prospective students and facilitates the admission process. The office is committed to providing quality service and assistance to students in all phases of the admissions process and to ensuring that their admission experience is a positive one.

#### **International Admissions**

Within the Office of Admissions, the Office of International Admissions supports the academic and cultural experience of international students at the University of Houston-Downtown. The office processes admission applications, provides immigration counseling, and offers personal assistance whenever possible.

#### **Graduate Admissions**

The office of Graduate Admissions accepts applications for all UHD graduate programs and provides program-specific requirements, entry dates and application deadlines.

#### **Transfer Center**

The Transfer Center serves as the UHD entry point for transfer students who are interested in attending UHD. The center provides ready access to information that will help students make important decisions about completing their college career. The center also provides walk-in assistance and tours of the UHD campus.

## Registrar

Suite 330-North, 713-221-8999

The Registrar's Office maintains all student academic records including registrations and grades. The responsibility of this office is to provide valuable and reliable service and academic data to all UHD students, faculty, and staff as well as to state and federal agencies. The Registrar's Office issues transcripts and diplomas, and certifies loan deferments and veterans' benefits. It also handles assigning classroom space. Students should contact this office in addition to the Financial Aid Office to officially notify the university of a name change when applicable.

### Veteran's Affairs

Veteran's Affairs assists veterans, reservists, guardsmen, and dependents of disabled or deceased veterans of the U.S. Armed Forces. Over 200 veterans are currently pursuing a degree at UH-Downtown. This area of the Registrar's Office ensures that proper paperwork is completed, certified, and filed with the Department of Veterans Affairs so that payment of education benefits can begin. Veterans Services does not, however, determine eligibility for benefits. Please visit UHD's VA representative to better answer any questions and or concerns.

## Scholarships and Financial Aid

Suite 330-North, 713-221-8999

The UHD Office of Scholarships and Financial Aid offers a variety of financial aid programs to assist undergraduate and graduate students in meeting educational costs. The programs include scholarships, grants, loans and work-study, which may be awarded in various combinations and amounts to meet individual student needs. Because funds are limited in many programs, it is important to begin the application process

early and complete the necessary applications properly and on time. The priority deadline for Fall is April 1 of each year.

Most federal and state aid is awarded on the basis of proven financial need rather than academic achievement. Most scholarships are awarded on the basis of academic achievement, talents, and special skills rather than proven financial need.

## Career Services

Suite 370-North, 713-221-8980

On the cutting edge of electronic technology, Career Services offers support, information, and counseling to students and alumni who wish to explore their career options. This office helps students develop academic and extracurricular programs to support and enhance career options through such tools as interest inventories and temperament indicators, available both in the Career Services Resource Center and on the Internet. An online resume bank and job-listing site, eRecruiting, lends itself well to the proactive, self-directed job search of today. Information about labor market and salary trends and career options are also available. In addition, UHD's Field Experience Program offers qualified students the opportunity to integrate classroom learning with work experience, granting up to six semester credit hours to students

working in their fields of study. Information regarding this program, as well as other services, is available in the Career Services office.

## Student Health Services

Suite 380-North, 713-221-8137

Student Health Services focuses on health promotion, disease prevention, and treatment of minor illnesses and injuries. Clinicians provide the same primary care found in most physicians' offices (including women's health) and offer referrals to specialists in the community when necessary. Routine laboratory services, pregnancy testing, and confidential HIV testing and counseling are provided. The pharmacy fills in-clinic prescriptions at low cost and offers some non-prescription medications for sale. Nurses provide counseling on a wide variety of health issues and offer special screenings and services throughout the year. Appointments are recommended for these services. In addition, educational brochures on a variety of health-related subjects are available as are applications for student health insurance.

## Student Assistance Program

Suite 390-North, 1-866-802-8553 toll-free 24 hrs.

The Student Assistance Program (SAP) is designed to help students maximize their health and effectiveness at home, school or work. Through this program, students receive confidential, personal support for a wide range of issues, from everyday concerns to serious problems.

All records, including medical information, referrals and evaluations, are kept confidential in accordance with federal and state laws.

Office Hours: Monday 7:30 am-2:00 pm; Tuesday 8:30 am-3:30 pm; Wednesday 1:00 pm-8:00 pm; Thursday 12:30 pm-7:00 pm; Friday-closed.

If assistance is needed when the office is closed, CALL TOLL-FREE (24 hrs) 1-866-802-8553; 1-866-216-9926 TDD or log on to [www.liveandworkwell.com](http://www.liveandworkwell.com), access code UHDSAP.

## Student Activities and Events

Suite 204-South, 713-221-8573

The Office of Student Activities & Events encourages and challenges students to become involved in non-academic components of campus life that enrich their campus experience, offer opportunities to develop leadership and other skills and allow them to make friends from a variety of educational and cultural backgrounds. The Office of Student Activities & Events coordinates the functions of the Student Government Association, Campus Activities Board and a variety of clubs and organizations. Student Activities & Events is also responsible for Crossroads Festival, Cultural on the Bayou, New Student Orientation Program, One Main Event, UHD Activities Day, Project Leadership UHD and the Campus Information Center.

### Campus Information Center

The Campus Information Center, located in suite 355-North, serves as a resource to visitors to campus, providing information about UHD and the surrounding community. Students are encouraged to utilize the

Center for information regarding their admissions and registration status, financial aid, or other questions about attending classes at UHD.

The Campus Information Center is open Monday-Thursday, 8 am-6 pm, Friday 8 am-5 pm and Saturday, 9 am-12 noon.

#### **Locker Rental**

UHD offers a 12 x 35 x 18 combination locker on either the 2nd and 4th floor of the One Main Building. Lockers are rented at a cost of \$15 for the entire semester and can be renewed at the end of the semester.

#### **New Student Orientation**

New Student Orientation introduces new students to the academic community at UH-Downtown. It is designed to meet the special needs of all students entering the university for the first time and to help make the new student's transition to the university a smooth and enjoyable one. New Student Orientation programs are offered for the summer, fall and spring semesters. Orientation also offers currently enrolled students the opportunity to develop their leadership skills and make new friends by becoming leaders in the program.

#### **Preventing the Abuse of Substances and Self (PASS)**

PASS provides confidential services aimed at prevention of alcohol and drug abuse and other addiction-related behaviors. Free substance-abuse screening, individual counseling, group counseling, workshops, outreach, consultation and referral services are offered. The PASS counselor is a certified alcohol and drug abuse counselor and may be contacted in person or by calling the PASS confidential line at 713-221-8989. Interested students may join the PASS Peer Educators, a volunteer group devoted to fighting the war on drugs.

#### **Project Leadership UHD**

Project Leadership UHD is a seminar-based, participatory program sponsored by the Office of Student Activities and Events in which UHD students are challenged to develop their strengths and skills as collaborative leaders. Project Leadership UHD features a core curriculum of required seminars, including the annual Student Leadership Conference, and a commitment to community service, and an elective curriculum of additional seminars. Students who complete the core curriculum will be awarded a Project Leadership UHD certificate at an awards ceremony to be held in the Spring.

#### **Student Government Association**

The Student Government Association (SGA) is the representative body for all UHD students. SGA is responsible for nominating students to serve on university committees and for chairing the Council of Organizations, which is the representative body for all clubs and organizations. SGA is involved in policy development activities through its participation in the shared governance process.

#### **Student ID**

Your student ID card identifies you as a student of UHD and is required for various activities, services, and academic functions. You will need an ID to check out library books, make an appointment at the health center, use the student life center facilities or use the computer labs. Your UHD student ID will also allow you to borrow books from any library in the University of Houston System. There is no fee for your initial student ID; however, there is a small charge to have it replaced if

lost or stolen. ID cards can be obtained from the Office of Student Activities & Events.

#### **Student Organizations**

The varied personal and professional interests of UH-Downtown students are aptly reflected in the range of active clubs and organizations on campus. Professional organizations and departmental clubs provide opportunities for individuals with similar interest and goals to meet. There are also social clubs, cultural organizations and special interest groups. All clubs offer student educational opportunities as well as personal enjoyment.

#### **Student Publications**

*The Dateline* is a student-run newspaper. With guidance from a faculty advisor and the Student Publications Advisory Committee appointed by the president, students are provided with a wide range of experience in journalism.

*The Bayou Review* is a literary journal, with biannual publication of poetry, essays, reviews, photos and drawings. The journal seeks to promote arts and humanities at UHD and to provide a forum for students who have an interest in creative writing.

#### **Volunteer Center**

UHD's Volunteer Center promotes public service and organizes support for volunteer opportunities in the community. The UHD Volunteer Center also serves as a clearinghouse of volunteer opportunities for UHD student organizations, individual students, faculty and staff.

#### **Sports and Fitness**

Student Life Center, 713-221-8225

Sports and Fitness provides members with programs and facilities that offer vigorous, fun-filled, health-promoting, physical activity conducive to wellness and personal development. Through a well-equipped recreational facility, fitness programs, intramural sports and sport clubs activities, members will be motivated to embrace a healthy life-style, which may ultimately enhance their quality of life.

#### **Membership**

The programs and services of Sports and Fitness are open to all UHD students, faculty and staff at no additional fees. UHD Alumni Society members may purchase a Sports and Fitness Membership at an annual \$60.00 fee.

#### **Jesse H. Jones Student Life Center**

The three-level, 30,000-square-foot Jesse H. Jones Student Life Center includes two ball courts equipped for basketball, volleyball, and badminton; a multipurpose studio designed for aerobics and martial arts; and a fitness center with state-of-the-art weight equipment and cardiovascular units. Lockers and showers are available.

#### **Fitness Programs**

Fitness programs are offered at various times throughout the week from certified instructors. Programs include: Aerobics, Karate, Tai Chi, Tae Kwon Do, Yoga, Hip Hop, and Latin Dance. Personal trainers are available to members for a nominal fee. The initial fitness assessment is free of charge.

### **Intramural Sports**

Intramural sports programs are designed to provide opportunities for UHD members to participate in organized sports activities. Individual and team sports are offered in over 15 different sports. Leagues are created for competitive and just-for-fun participants alike, and there are several activities where men and women team-up for co-recreational sports.

### **Sport Clubs**

Sport Clubs provide members with opportunities to share common interests and pursue active involvement and improvement in a sport or activity. Clubs are encouraged to represent the university at local, regional and national competitions.

### **Testing Services**

Suite 280-South, 713-221-8027

To support new and current students, Testing Services personnel administer UH-Downtown, state and national tests. Local prepared tests include the Writing Proficiency Examination and the foreign language (Spanish) placement examinations. Several national tests are provided by testing personnel, including the General Education Development (GED), College Level Examination Program (CLEP), Law School of Admission Test (LSAT), Medical College Admission Test (MCAT), Texas Higher Education Assessment (THEA), American College Testing Assessment (ACT) and the SAT I and II. Registration deadlines are about one month prior to test dates. Registration information and forms for most tests are contained in test bulletins available in Testing Services.

The ACCUPLACER/WritePlacer exam, one of the approved Texas Success Initiative (TSI) assessments recommended to new college freshmen, is offered by Testing Services to UHD students only.

## **General Information**

### **Student Parking**

Student parking is available at UH-Downtown in four different areas: the Daly Street Lot (North Main at Daly), the Shea Street Lot (North Main at Shea), the Naylor Street Lot (North Main at Naylor) and the Washington Street Lot (Washington at Travis and Washington at Louisiana). Shuttle bus service is available from the Daly Street Lot, providing service at regular intervals to the One Main Building. Students who park in any UH-Downtown parking lot are required to register their vehicles with the Parking Office and obtain a permit to display on the vehicle. The university reserves the right to control the availability of student parking areas to meet the demand for parking for special events. The parking fee is subject to change by the Board of Regents.

### **Dining Facility**

Dining facilities are located on the third floor of the Academic Building. Breakfast and lunch items are served Monday through Saturday. An evening meal is available Monday through Thursday after 4:00 pm during the Fall and Spring semesters. The food court offers home-

cooked entrees with vegetables and rolls or cornbread, fish, chicken and vegetable wraps, rotisserie chicken, Italian foods, sandwiches, a grill, prepackaged salads, a Taco Bell and a variety of desserts.

### **Bookstore**

The upper level (third floor) of the university bookstore is located near the Main Street entrance of the One Main Building. It offers school supplies, clothing, insignia items, and snacks. The lower level (second floor) houses new and used textbooks and offers postal services including purchasing stamps, mailing letters in the US, and shipping packages in the US via metered mail, certified mail, return receipt and other special shipping options.

### **O’Kane Gallery**

The Harry W. O’Kane Gallery, established in 1970, was made possible by gifts from Harry W. O’Kane, Mary W. Bingman, and the Humphreys Foundation. Gallery Director, Mark Cervenka, and the O’Kane Gallery Committee annually select five to six exhibitions of artworks by emerging, established, and historical artists, that meet the diverse interests of the students, faculty, and staff of the University of Houston-Downtown and the downtown Houston community. Exhibitions in all media provide educational support to various university courses and to nearby schools, while the gallery, itself, functions as a site for university forums, meetings, and receptions. Exhibitions are free and open to the public. For hours and information call 713-221-8042.

### **O’Kane Theatre**

The Harry W. O’Kane Theatre, established in 1970, was made possible by gifts from Harry W. O’Kane, Mary W. Bingman, and the Humphreys Foundation. UH-Downtown presents one theatrical production each long semester in this intimate 90-seat facility. Participation is open to students, faculty, staff and alumni.

## **Weekend College, Distance Learning, And Off-Campus Programs**

To meet the needs of its busy students, UHD strives to offer courses at locations, in formats and at times that insure broad flexibility for students to pursue their degrees. Courses are available online via the internet and through tape purchase programs. The Weekend College provides opportunities for students who can only take courses on the weekend. And for students who live or work in the suburban Houston areas, UHD offers programs at UHS at Sugar Land, UHS at Cinco Ranch, and The University Center in The Woodlands. Courses taken off-campus may apply to any UHD degree program in which they are ordinarily accepted. Students enjoy the ability to tailor their schedule to meet individual needs by taking courses at multiple locations or using multiple formats.

Students taking off-campus courses (online, tape purchase, instructional television or at one of the off-campus locations) may be assessed an additional fee. Specific details about these fees can be

found on p. 6 of this Catalog, and are also available on the UHD website ([www.uhd.edu](http://www.uhd.edu)) and in the *Class Schedule*.

## Weekend College

The Weekend College gives students the opportunity to complete their college degree by taking classes on Friday evenings or Saturdays. Students have a choice of two degree programs, the Bachelor of Business Administration with major in General Business or Purchasing and Supply Management and the Bachelor of Science in Interdisciplinary Studies.

Course offerings in the Weekend College are scheduled to help a student who already has 60 hours of credit to complete a degree program. Although there is a strong upper-level course focus, some freshman-and sophomore-level courses are also offered.

## Off-Campus Programs

### Online Courses

[www.uhdonline.uhd.edu](http://www.uhdonline.uhd.edu)

The rapid expansion of access to the Internet has created new opportunities for meeting UHD students' educational needs. UHD offers a growing selection of courses delivered over the web in support of degree programs. The courses are organized to provide students with a variety of activities designed to enhance the educational experience while providing the student with flexibility in taking the course. Students generally work within defined time frames for completion of course modules, and they often have the opportunity to interact directly in real-time with fellow students and their professor through chats and bulletin board discussions.

### Telecourses

To give students more flexibility in arranging their schedules, UHD offers a selection of telecourses, presented in a series of video segments and accompanied by specially prepared academic materials. Students may check out tapes from the UHD library. Some telecourses are also broadcast on the Houston Access station. Registration may be done by phone or in person, just as for any other UHD course. Students enrolled in a telecourse may be required to attend an orientation session.

### UHS at Sugar Land

[www.sugarland.uh.edu](http://www.sugarland.uh.edu)  
14000 University Blvd.  
Sugar Land, Texas 77479  
281-275-3300

William O'Neill, UHD Coordinator  
281-275-3323  
email: [O'Neill@uhd.edu](mailto:O'Neill@uhd.edu)

In April 1996, the Texas Higher Education Coordinating Board granted approval to the University of Houston System to form a partnership among the four UH System universities (University of Houston, UH-Downtown, UH-Clear Lake, and UH-Victoria), Houston Community College System, and Wharton County Junior College to begin offering course work leading to 29 bachelor's and master's degrees.

The two community college partners offer lower-division courses; the UH System universities offer junior, senior, and master's courses. Courses leading to a degree may be offered by faculty from more than one university, but students register with the university that awards the degree they are pursuing. Instruction is delivered in several forms: live on-site; interactive TV on-site; video tape on-site; videotape purchased for home viewing; KUHT-TV Channel 8 at home; and online.

Degrees offered by UH-Downtown include the Bachelor of Business Administration with majors in General Business, Accounting, Finance, Management and Marketing; the Bachelor of Arts in Interdisciplinary Studies with elementary certification; the Bachelor of Science with majors in Computer Science, Criminal Justice, and Interdisciplinary Studies; and the Master of Science with major in Criminal Justice.

### The University Center in The Woodlands

[www.tuc.edu](http://www.tuc.edu)  
The University Center  
3232 College Park Drive  
The Woodlands, Texas 77381  
936-273-7510

Louis Evans, UHD Coordinator  
936-273-7519

The University Center in The Woodlands is a partnership of six universities including the University of Houston-Downtown and the University of Houston, and the North Harris Montgomery Community College District. Degrees offered by UHD include the Bachelor of Science in Interdisciplinary Studies, the Bachelor of Business Administration in Marketing, the Bachelor of Business Administration in Finance, and the Bachelor of Business Administration in Computer Information Systems.

Students complete lower-level course work at one of the five colleges of the North Harris Montgomery Community College District. UHD offers the junior and senior courses leading to the degree. As at UHS-Sugar Land, instruction is delivered in several forms; live onsite; interactive TV on-site; video tape on-site; video tape purchased for home viewing; KUHT-TV Channel 8 at home; and online.

### UHS at Cinco Ranch

[www.cincoranch.uh.edu](http://www.cincoranch.uh.edu)  
4242 South Mason Road  
Katy, Texas 77450  
832-842-2800

The newest addition to off-campus locations is the University of Houston System at Cinco Ranch in West Houston. UHS-CR is similar in organization to UHS at Sugar Land. It is a partnership of the four UH System universities (University of Houston, UH-Downtown, UH-Clear Lake, and UH-Victoria) and Houston Community College System.

Degrees offered by UHD include the Bachelor of Business Administration with majors in General Business, Accounting, Finance, Management, and Marketing; and the Bachelor of Science in Interdisciplinary Studies. Students complete the lower level requirements for the undergraduate degree at one of the HCC System campuses. UHD provides the junior and senior level courses required by the degree on-site at the Cinco Ranch location. As at the UHS

Sugar Land and The University Center, instruction is delivered in several forms: live on-site; interactive TV on-site; video tape on-site; video tape purchased for home viewing; KUHT-TV Channel 8 at home; and online.

## Continuing Education and Professional Development

Continuing education and training are provided through three units: the Applied Business and Technology Center, the English Language Institute and the Criminal Justice Training Division (see description in the Criminal Justice Department's section of this Catalog).

### Applied Business and Technology Center

Room 606-South, 713-221-8032

The Applied Business and Technology Center (ABTC) is dedicated to responding to the needs of business and industry. With continuing changes in technology, jobs can become obsolete almost overnight. The many changes that are emerging in the workplace make lifelong education a necessity, not a luxury.

- Hands-on training courses range from entry to advanced levels. The ABTC is an Authorized Premier Autodesk training center offering classes related to AutoCad and 3D Studio Max, Microsoft Authorized Academic Training Program partner offering training classes required to become a Microsoft Certified Systems Engineer (MCSE), and Oracle Academic Initiative partner offering training programs related to Oracle database. In addition, hands-on training is provided on MicroStation, several programming languages and various business applications.
- The center has an extensive consulting service that customizes courses to meet special industry requirements. Area corporations and agencies often contract with the center to provide their training needs in business and technology. In addition, national and foreign corporations often contract with the center to deliver services throughout the United States and abroad.

### English Language Institute

Room 606 South, 713-221-8047

The English Language Institute (ELI) at the University of Houston-Downtown is a self-sustaining noncredit English language program for international students, permanent residents and US citizens who wish to improve their English language proficiency. The ELI is a member of the American Association of Intensive English Programs (AAIEP) and NAFFSA: Association of International Educators. Its instructors are trained and experienced professionals in the delivery of post-secondary English language instruction. The student population is international in makeup and ranges from 80-150 students per session. Most students have graduated from high school or hold bachelor's degrees. Two programs are offered at the ELI --an Intensive English program that focuses on academic preparation with a conversational component, and a Business English program that offers English language and business-oriented cultural preparation for the business world. In addition, the ELI develops individual English language

learning programs for companies and organizations both here and abroad.

The ELI's Intensive English program is a seven-level program that emphasizes preparation for university academic studies through course work in listening, speaking, reading, writing and grammar. Each session offers 130 hours of class instruction and 130 hours of voluntary laboratory study. The program is supported by a computer laboratory with the latest English as a Second Language software and by a SONY language laboratory. Academic content and materials help initiate students into academic study and language usage. Although the ELI does offer an afternoon Test of English as a Foreign Language (TOEFL) preparation course for an extra fee, ELI graduates who pass the exit test may attend UHD academic classes without a TOEFL score. In addition, ELI graduates receive three hours of UHD elective credit toward their degree.

The ELI Business English program is a four-level program designed for trainees with at least an intermediate proficiency in English. Trainees study the idiomatic language of business, the language of business meetings, the language and method of business presentations, cross-cultural communication, and business writing. Each session offers 145 hours of class instruction, 20 hours of required laboratory, and 95 hours of voluntary laboratory study. The program is supported by a computer laboratory with the latest Business English software, by a SONY language laboratory, and by a video library of international business scenarios.

Cultural and social activities are an important aspect of the ELI program. Students and trainees from other countries are given the opportunity to explore U.S. culture while learning English and are given opportunities to practice their English with native speakers.

## Special Programs

### Study Abroad Programs

The University of Houston-Downtown is affiliated with the American Institute for Foreign Study, which offers year-long and semester-long programs in Argentina, Australia, Austria, the Czech Republic, England, France, Italy, Russia, Spain, and South Africa. UH-Downtown students may also be eligible to participate in selected study-abroad programs offered through other universities. There are other foreign travel options for students who are not interested in going abroad for a full term of foreign study. Faculty-led trips to foreign countries are occasionally offered in conjunction with various academic classes taught at UHD. Recent faculty-led programs have visited Taiwan, Paris, China, and London.

All currently enrolled UH-Downtown students planning to take part in a UHD sponsored or approved study abroad program are eligible to apply for financial support from the International Education Student Fee Fund. A limited number of grants up to \$2,000 may be available to help supplement the cost of a study abroad program. Information on study abroad programs, scholarships and grants is available in the Provost's Office, Room 950-South.

## Office of Disability Services

Room 409-South, 713-226-5227

The Office of Disability Services meets the special needs of students with disabilities in the university. These services are designed to assist students and instructors with placement testing; priority registration and scheduling; academic advising and counseling; and testing accommodation, including taped and enlarged tests, and proctored, extended-time testing. In addition, staff members advise instructors on classroom accommodations, arrange tutoring services, and serve as liaison between students with disabilities and faculty and/or community agencies.

Section 504 of the Rehabilitation Act of 1973 stipulates that students with disabilities must be accommodated so that they may achieve at the level of which they are capable. Detailed information may be found in the *Disabled Requirements Handbook* of the Federal Programs Advisory Service, US Department of Education. Additional information is available in the Office of Disability Services.

# Undergraduate Academic Programs

## General Education

### General Education and the College Curriculum

The granting of a college degree signifies having reached a level of intellectual development that merits formal recognition. Intellectual development can be measured both in terms of depth and breadth of knowledge, and a college degree should signify growth in both dimensions. In most college programs, students demonstrate depth of knowledge by completing courses required in the major field of study.

Breadth of knowledge is demonstrated by satisfying a group of general education requirements that are shared by students in all majors. Whereas the aim of the major field of study is to provide experiences defining membership in a disciplinary community, the aim of the general education program is to provide experiences that define what it means to be a college-educated person. The centerpiece of the general education program is called the "core curriculum" because these courses comprise the core of the college experience. The goals of UH-Downtown's general education program are that graduates will demonstrate:

- The ability to view events from a variety of perspectives, especially including different historical and cultural perspectives;
- An awareness of the different ways of pursuing knowledge, including the methods of scientists and of those engaged in the arts and humanities;
- Knowledge of, and sensitivity to, ethical and moral standards;
- Knowledge of, and a degree of skill with, new technologies;
- The ability to communicate clearly and effectively and to use various media to transmit and process information.

In order to achieve these goals, the general education component of all degrees earned at UH-Downtown consists of four parts: courses satisfying the common core requirements, application course requirements, enhancement course requirements, and the Writing Proficiency Examination. Each of these components is described below:

### Common Core Requirements

Students in all UH-Downtown degree programs must complete a common core of courses consisting of at least 42 semester credit hours. If any course taken to fulfill a core requirement has a corequisite, the corequisite course must be taken concurrently. For instance, if a student chose to fulfill the Natural Sciences requirement by taking BIOL 1301, the corequisite lab course, BIOL 1101, would also have to be taken in the same semester. The following table lists the disciplinary components of the core, the number of semester credit hours (SCHs) required in each component, and the UH-Downtown courses that may be used to fulfill these requirements. Departments often suggest certain courses that they prefer their majors to take to fulfill some of the core requirements, so students should carefully study the degree plans that interest them. Degree plans may be found in the sections of this

Catalog describing the departments' programs, and in degree program brochures available in departmental offices.

DISCIPLINARY COMPONENTS	SCHs	UHD COURSE OPTIONS
<b>Communication</b>		
English composition	6	ENG 1301, 1302
Speech	3	One course from COMM 1301, 1303, 1304, 1305, 3302, 3304, 3306
<b>Mathematics</b>		
	3	Any MATH course numbered 1301 or higher
<b>Natural Sciences</b>		
	6	Two 3-hour courses from BIOL, CHEM, GEOL, MBIO, NS or PHYS that include lab hours or have corequisite 1-hour labs.
<b>Humanities &amp; Visual &amp; Performing Arts</b>		
Fine Arts	3	One course from ART, DRA, MUS
Literature	3	Any literature course
<b>Social &amp; Behavioral Sciences</b>		
US History	6	Two courses from HIST 1305, 1306, 2303, 2309
Political Science	6	POLS 2303, 2304
Social/Behavioral Sciences	3	One course from ANTH 2301, 2302; CJ 1301; ECO 1301; GEOG 1301, 1302; PSY 1303; SOC 1303
<b>Computer Literacy</b>	3-4	One course from CIS 1301; CS 1305, 1408, 1410; ENGR 1400; HUM 2305
<b>Total Hours</b>	<b>42-43</b>	

A student transferring to UHD who has completed the common core requirements at another Texas institution of higher education will receive credit for each of the core courses transferred, and will be considered to have fully satisfied all of UHD's common core requirements. A student transferring to UHD who has completed some, but not all, of the common core requirements at another Texas institution of higher education will receive credit for each of the core courses transferred, and will be considered to have fully satisfied the corresponding common core requirements at UHD. The student must still satisfy any remaining UHD common core requirements.

A student concurrently enrolled at more than one institution of higher education should follow the core curriculum requirements in effect for the institution where they are classified as degree-seeking students.

### Time Frame for Completing Common Core Requirements

The common core of the general education program is designed to provide students with the academic skills and knowledge that constitute the foundation of a baccalaureate education. The specialized course work taken in the major field of study builds upon this foundation, so it is necessary for students to complete core requirements early in their course of study.

Writing and computational skills are especially critical for future academic success. Therefore, in the first semester in which they are eligible to do so, students must enroll in the courses that will satisfy the English composition/rhetoric requirement (ENG 1301 and ENG 1302), and the courses that will satisfy the mathematics requirement (any MATH course numbered 1301 or higher), and students must continue to enroll in these courses until they have been successfully completed. Students are encouraged to complete all other common core requirements before enrolling in any upper-division (3000-level and 4000-level) courses. Students may not take the writing skills courses within their major until they have successfully completed the Writing Proficiency Examination.

## Application Course Requirements

The application course requirements are intended to ensure that the communication and analytical skills learned in common core courses are applied and further developed. Application courses are required in the following two areas:

### Writing Skills

In addition to the common core requirements in English composition and literature, students must take two upper-division courses that include substantial written assignments. These courses, designated as "W courses" in degree programs, assure students of opportunities to use and further refine their writing skills within the context of the major field of study.

### Nonverbal Analytical Skills

In addition to the common core requirements in mathematics and computer literacy, students must take one course that makes use of the skills learned in these core courses to solve problems related to the major field of study. These courses are designated as "S courses" in degree programs.

## Enhancement Course Requirements

Enhancement courses represent another way in which certain objectives of the general education program are embedded in courses beyond those in the common core. Each degree program includes certain courses that (1) give significant emphasis to ethical and moral issues, and (2) engender in students a greater appreciation of their membership in a world community marked by vast diversities of every type.

## Writing Proficiency Examination

All students must take and pass the Writing Proficiency Examination after completing 60 semester credit hours and before completing 75 semester credit hours. Transfer students with 75 or more hours must attempt the examination during their first semester at the university. The purposes of the examination are to determine if students have retained the language skills learned in their lower-division composition courses, and to ensure that students proceeding to upper-division work possess college-level writing skills. Examination dates and instructions for registering for the examination are given in each semester's *Class Schedule*.

## University College

### UNIVERSITY COLLEGE

**B. Christiana Birchak, PhD, Dean**  
Room 655-South, 713-221-8007

All new undergraduate students to UH-Downtown are first admitted into University College. University College is responsible for assisting students in their academic progress until they officially declare a major. Students are encouraged to officially declare their major when they have completed 30-60 credit hours of college-level courses. See the Academic Advising Center for specific requirements and the procedures for declaring a major.

### Academic Advising Center

Room 380-South, 713-221-8006

The Academic Advising Center is a place where UHD students can meet with an academic advisor to discuss academic and other university issues. Academic advising is an important part of a student's life at UHD. Seeing an academic advisor each semester will help students to remain in compliance with state and university policies, and to make satisfactory progress toward attaining their degrees. Academic advisors are available to help students select courses each semester from the university's general education curriculum, to provide information regarding campus resources, and to help students declare a major. Academic advisors are also available to discuss course work evaluations from previous colleges and universities that students may have attended.

The Academic Advising Center is open from 8:00 to 6:00, Monday through Thursday, and 8:00 to 5:00 on Friday. No appointment is necessary.

### Academic Counseling Center

Room 655-South, 713-221-8101

Academic counselors are available to provide assistance and guidance to students on academic issues. Counselors work with students on setting goals, managing time, arranging for tutoring in selected subjects, and dealing with unforeseen difficulties that may jeopardize academic success. Support programs are also available to help students with physical or learning disabilities.

### UH-Downtown Learners Community

Room 405-South, 713-221-8286

The UH-Downtown Learners Community, funded under the federal Strengthening Hispanic Serving Institutions program, provides a web of integrated services to students entering UH-Downtown as first-time-in-college freshmen. The project's goal is for Learners Community students to remain enrolled from one fall semester to the next, make satisfactory academic progress, and graduate within six years with a baccalaureate degree. Program components include linked courses, supplemental instruction, academic counseling (including midterm grade reporting and a probation recovery program), financial aid counseling, faculty mentoring, a library resources curriculum, and the Laptop Pilot Project.

## Gaining Early Awareness and Readiness for Undergraduate Programs (GEARUP)

The GEARUP Program, funded by the US Department of Education, is a partnership among Project GRAD, Houston Independent School District (Davis, Yates, and Wheatley feeder patterns), and partner universities (UH-Downtown, University of Houston, and Texas Southern University). GEARUP seeks to develop early college awareness in middle school students by establishing ongoing relationships with the faculty, staff, and students of local colleges and universities. UH-Downtown is a university partner to Marshall Middle School, and provides reading and mathematics tutoring, mentoring experiences, and an early college awareness curriculum to sixth and seventh graders.

## Educational Talent Search and Upward Bound

Educational Talent Search: Room 455-South, 713-221-8992  
Upward Bound: Room 437-South, 713-221-8515

Educational Talent Search and Upward Bound reach out to students in Houston public schools with programs and activities designed to encourage college-going rates among under-represented populations. These highly successful efforts have significantly increased the number of students who go on to college in the schools where these programs are present.

## Ketelsen Institute for Academic Excellence

Room 651-South, 713-221-8046

UH-Downtown offers a variety of programs in cooperation with area high schools to encourage high school students to continue their education after graduation and to prepare them to succeed at the college level. These programs provide intensive training in reading development, English composition, critical thinking and analysis, and specific preparation in mathematics and the natural sciences. One such initiative, the Ketelsen Institute for Academic Excellence, is a summer enrichment program that assists high school students academically and helps prepare them to transition to the more rigorous, university experience. Students are offered an opportunity to participate in a four-week academic enrichment program that supports and enhances their high school curriculum, helps prepare them for college, and acculturates them to a university environment. The university experience, in turn, helps to reduce apprehension about college attendance by familiarizing students with campus life through interactions with university faculty and state-of-the-art technology. The goals of the institute include encouraging academic excellence and increasing the high school graduation and college enrollment rates.

## Business

### COLLEGE OF BUSINESS

**Don Bates**, PhD, Dean

**Carl R. Ruthstrom**, PhD, Associate Dean

Room 1009-North, 713-221-8179

### Finance, Accounting and Computer Information Systems Department

**Asghar Nazemzadeh**, PhD, Chair

Room 1005-North, 713-221-8017

#### Faculty

Professors:	Duangploy, Islam, Nazemzadeh, Omer, Pelaez, Rebhun, Robbins, Smith, Wadhwa
Associate Professors:	Penkar, Shelton, Williams, Serrett
Assistant Professors:	Bressler, Chang, DeVries, Manrique, Tokic, Yin
Lecturers:	Burrus, Kassem, Durrett, Hanks, McMahon, Osho, Phelps, Sullivan, Sykes, Trevino, Uwakonye, Vosoughi
Emeritus:	McNeill

#### Programs of Study

##### Bachelor of Business Administration with majors in:

Accounting  
Computer Information Systems  
Finance  
International Business

##### Minors in:

Accounting  
Computer Information Systems  
Economics  
Finance  
International Business

### Management, Marketing and Business Administration Department

**Forrest Aven**, PhD, Chair

Room 1005-North, 713-221-8901

#### Faculty

Professors:	Bates, Efraty, Evans, Jackson, Johnson, Shipley, Spilger, Woods
Associate Professors:	Ashe, Aven, Goff, Kauffman, Maranville, Ruthstrom, Stanberry, Strain
Assistant Professors:	Adams, Coy, Khoja, Mitchell, Nealy, Nino, Pointer, Stading, Usnick
Instructor:	Monteils
Lecturers:	Burrell, Cuevas, Francis, Hanks, Ghosh, Gleason, Jones, Junco, Kaser, King, Moore, Neal, Newmiller, Supina
Emeriti:	Eckles, Hebert, Robinson, Rooney, Tinkler, Wilkinson

## Programs of Study

### **Bachelor of Business Administration with majors in:**

Administrative Management  
General Business  
Management  
Marketing  
Supply Chain Management

### **Minors in:**

Administrative Management  
Energy Management  
General Business (available only to non-Business majors)  
Management  
Marketing  
Metro-Entrepreneurship  
Professional Land Management  
Retail Management  
Small Business Management  
Supply Chain Management

### **Accreditation**

The programs of the College of Business are accredited by the Association to Advance Collegiate Schools of Business-International.

### **Mission Statement**

The College of Business prepares students for professional careers by stressing not only the skills and knowledge essential for success but also the wisdom and understanding necessary to become productive citizens. The mission of the College of Business is to provide education that develops an understanding and appreciation for the dynamic nature of the forces that shape business. The College of Business prepares students for success by offering them an opportunity to develop expertise and skills in a particular business discipline within the framework of a broad, well-integrated business curriculum that emphasizes analytical, communication and interpersonal skills and knowledge that enhance students' long-term employability and opportunities for advanced degrees. The college has a regional focus with emphasis on responding to the needs of the business and professional community in the Greater Houston area. Faculty maintain a close affiliation with the community through a variety of activities, including participation in local professional associations, leadership in professional development programs, supervision of student projects benefiting local businesses and organizations, and consulting.

The College of Business serves urban students in a small class setting that encourages interaction and draws upon the strengths of diversity in student age, ethnicity, work experience and cultural background. Excellence in teaching is the first priority of the college. Excellence is achieved through innovative pedagogy that emphasizes the application of theory and the development of discipline-based skills. In addition, research and scholarly activities are encouraged as essential components in maintaining faculty excellence.

The College of Business is committed to maintaining high-quality instruction by regularly examining its educational offerings and its delivery processes. Faculty, administrators and staff believe that the development of policies, programs and personnel that support excellence are most likely to emerge in a collaborative work environment. The college seeks to create a culture built upon mutual respect and appreciation for each person's contributions.

### **Objectives**

To carry out this mission, the faculty of the College of Business has adopted objectives to guide the college's planning related to teaching, research and service. The teaching objectives have the highest priority and include:

- Providing a curriculum appropriate to the business environment and to the students' educational and career needs.
- Implementing the curriculum by means of a highly qualified faculty.
- Supporting students through quality courses, academic advising and flexible scheduling.

The objectives related to research and service have approximately equal weight. The research objectives include:

- Providing the organization, facilities and support to assist faculty research and publication.
- Encouraging presentation of research by written and oral means.

The service objectives include:

- Fulfilling responsibilities as members of the university faculty community in performance of assignments from university management.
- Encouraging faculty membership and active participation in professional organizations.
- Enhancing the partnership of the academic community with the business community and the public at large.

Consistent with the college's mission and objectives, each of the major programs is designed to prepare graduates to make immediate contributions as employees and to develop in them skills, knowledge and attitudes to deal effectively with the technological, economic and social uncertainties of the future.

One way by which the commitment of the business community to the quality of programs offered by the College of Business is demonstrated is by the funding of professorships. The college is honored to be the recipient of three such funds. In 1983, the Houston Association of Professional Landmen endowed the Petroleum Land Management Professorship. In 1987, a grant from Fiesta Mart was matched by the University of Houston System to establish the Fiesta Professorship in Accounting. In 2002, a grant from Marian and Speros Martel established the Martel Professorship in Computer Information Systems.

### **Beta Gamma Sigma**

The College of Business is privileged to have a student chapter of Beta Gamma Sigma, the national business honorary society recognized by the AACSB-International. Its mission is to encourage and honor academic achievement and personal excellence in the study and practice of business. Each year, the University of Houston-Downtown Chapter invites to membership the juniors in the college who rank in the top 7% of their class and the seniors who rank in the top 10% of their class who are not already members.

## Academic Requirements

Consistent with the University of Houston-Downtown's commitment to quality undergraduate education, the College of Business adopts this policy regarding admissions, the declaration of majors, course enrollment and requirements for graduation for undergraduate business degree programs. These requirements are effective commencing May 1, 2005. The following criteria and rules will be applied to all students

interested in the degree programs administered by the College of Business.

### **Admission and Declaration of Major**

Students currently enrolled at UHD and new transfer students to UHD with a GPA between 2.00 and 2.24 may apply for admission to the College of Business and simultaneously declare a major in business if the following requirements are met. Students in this category will not be granted self-advising privileges until their GPA is 2.25 or higher.

- completion of the 42 hours of common core requirements plus MATH 1305, MATH 1306, ACC 2301, ACC 2302, ECO 2301 and ECO 2302,
- satisfactory completion of Texas Success Initiative (TSI) requirements, and
- no transcript or cashier holds.

Students currently enrolled at UHD with a GPA of 2.25 or higher on all work at UHD may apply for admission to the College of Business and simultaneously declare a major in business if the following requirements are met:

- completion of 42 hours of the common core requirements,
- completion of College Algebra with a "C" or higher,
- satisfactory completion of TSI requirements, and
- no transcript or cashier holds.

Joint-Admission Community College/UHD students with a GPA of 2.25 or higher at the college/university most recently attended may apply for admission to the College of Business and simultaneously declare a major in business if the following requirements are met:

- completion of the 42 hours of common core requirements,
- completion of College Algebra with a "C" or higher,
- satisfactory completion of TSI requirements, and
- no transcript or cashier holds.

New transfer students with a GPA of 2.25 or higher at the college/university most recently attended, may apply for admission to the College of Business and simultaneously declare a major in business if the following requirements are met:

- completion of 42 hours of the common core requirements,
- completion of College Algebra with a "C" or higher,
- satisfactory completion of TSI requirements, and
- no transcript or cashier holds.

### **Denial of Admission**

Students with a GPA of less than 2.00 at the last college or university attended do not qualify for admission to the College of Business and must meet with University College advisors for course approvals.

### **Post-Baccalaureate and Special Status Admission**

Students who hold bachelors or graduate degrees from accredited universities who are not seeking a degree from the University of Houston-Downtown may apply for admission to the College of Business as post-baccalaureate students prior to enrolling at the University of Houston-Downtown.

Students who desire to take courses offered by the College of Business which have been approved by external certification agencies to fulfill their continuing education requirements may apply for admission to the College of Business as special status students. In order to qualify, the applicant must have at least 60 hours of university credit. Additionally, the student must satisfy TSI requirements if applicable.

Courses taken by a special status student may not be used to fulfill degree requirements of any degree granted by the College of Business.

Transient students who need to take one or more business classes at UHD to complete their degree at another university must obtain prior written approval from their dean to enroll in specific courses which will be used to satisfy graduation requirements.

### **Dismissal from the College of Business**

Students admitted to the College of Business whose overall GPA falls below 2.0 for two consecutive semesters will be placed on academic suspension in accordance with the current UHD Catalog. Students on academic suspension will be dismissed from the College of Business.

A student who changes his/her major to a discipline outside of the College of Business will be dismissed from the College of Business and their records will be forwarded to the appropriate college.

If a student subsequently seeks readmission to the College of Business, she/he must reapply and meet the College of Business standards of admission in force at the time of reapplication.

### **Course Approvals and Advising**

All students admitted to the College of Business will be advised by College of Business advisors. Students with declared majors will be granted self-advising privileges as long as their GPA is 2.25 or above and prerequisites are followed. Students who fail to follow prerequisite requirements will be denied self-advising privileges. This provision applies to students who have not completed the 18 hours of required lower division business core classes in MATH, ACC and ECO before attempting upper division courses, have not passed the Writing Proficiency Examination, or do not follow advisors' directions. Students who fail to file a declaration of major when eligible will be denied enrollment in courses administered by the College of Business until the declaration has been filed.

Students not admitted to the College of Business who want to enroll in upper division business courses must have an overall GPA of 2.00 or higher, must meet all the prerequisites for the courses, and must have prior written approval of a College of Business advisor or a designated delegate. The only course that does not require prior written approval of a College of Business advisor is BA 3300 (Business Cornerstone).

Students not admitted to the College of Business will not be allowed to take more than 18 hours total of upper division Business courses without the permission of the Dean of the College of Business.

### **Graduation Requirements**

In addition to meeting the general requirements established by the University of Houston-Downtown for eligibility to graduate, students receiving a degree in a program administered by the College of Business must have an overall GPA of 2.0 or better for all courses taken in the College of Business

The final 30 semester credit hours of course work toward the degree must be taken at UH-Downtown. Prior to that time, students who wish to take junior- and senior-level courses at another college or university, including any other campus of the UH System, and apply the credits earned toward their degree, must request approval through the Office of Business Student Services in Room 1041-North. Courses taken

without such approval will not be counted toward the fulfillment of degree requirements.

For degree completion, at least 25% of the semester credit hours must be earned through instruction offered by UHD. Additionally, 18 of the last 30 hours must be in upper division course work as approved by College of Business. Only the Dean of the College of Business may waive any portion of these requirements and only upon written petition by a student who has demonstrated extraordinary ability.

### Courses of Instruction

Individual courses of instruction are subject to change or cancellation at any time and may not be offered each semester or every year. Students should be especially mindful that summer offerings are limited and vary from year to year. Therefore, careful planning is required if progress toward the degree is expected during the summer months.

### Field Experience

Field Experience integrates theory learned in the classroom with practical work experience in a job related to the student's academic and professional goals. The work experience and the academic experience must be directly related. Positions may or may not be paid and may last the duration of the fall or spring semester or the entire summer. Field Experience generally is not approved for students already employed in their area of study.

Eligibility for Field Experience enrollment includes at least 60 semester credit hours completed in the degree program, a minimum cumulative grade point average of 2.5 and prior approval of the department chair in whose area the course is being offered. Other requirements specified by the department may impact the applicant's eligibility. Submission of applications and other preliminary procedures should be completed during the semester prior to the one in which the student wishes to enroll.

The College of Business allows up to two courses (6 semester credit hours) in Field Experience to be applied toward graduation requirements. These courses are graded on a pass/fail basis and do not apply toward calculation of the grade point average. Field Experience credit may NOT be used to satisfy minor program requirements.

### Minor Program Requirements

Additionally, the College of Business offers a variety of minors to complement major programs. Both students pursuing a Bachelor of Business Administration degree and those pursuing other degrees offered by the university can select these minors. Students planning to take a minor in the College of Business who are not seeking a Bachelor of Business Administration degree are reminded that in compliance with the accrediting principles of AACSB-International, the course work taken in the College of Business, including all courses applicable to the minor, is limited to 25% of the credit hours applied toward graduation. Information concerning the procedures for declaring a minor is available from the Business Student Services Office in Room 1037-North.

## Bachelor of Business Administration Programs

All majors within the Bachelor of Business Administration degree program administered by the College of Business share a common core of general education requirements and a common core of business

course requirements. These two core areas must be completed in addition to the major discipline requirements.

Students must complete all general education core requirements prior to enrolling in upper-division courses. Upon completion of 30 hours, students should file for admission to the College of Business. Upon completion of 60 hours, students must file a declaration of major through the Office of Business Student Services.

## General Education Requirements

All students seeking a Bachelor of Business Administration degree from the University of Houston-Downtown must complete the general education requirements. These requirements include the common core requirements, application course requirements, enhancement course requirements, and the Writing Proficiency Examination.

### Common Core Requirements

To fulfill the common core's speech requirement, COMM 3306 is recommended. To fulfill the mathematics requirement, MATH 1301 is recommended. To fulfill the computer literacy requirement, CIS 1301 is recommended. All other common core requirements may be filled by taking any of the courses listed as options on page 24.

### Application Course Requirements

ENG 3302 and ADM 4301 (see Business Core Requirements below) satisfy the writing skills requirement. The nonverbal analytical skills requirement is satisfied by MATH 1306 (see Business Core Requirements below).

### Enhancement Course Requirements

The general education requirements related to ethical and moral issues and the world community are addressed throughout the required business core courses. The College of Business faculty believes that for investigation of these issues to be most meaningful, they must be studied in direct relationship with the career path chosen by the student. Thus, within each area of the business core, relevant material related to these dimensions is presented.

### Writing Proficiency Examination

All students must take and pass the Writing Proficiency Examination after completing 60 semester hours and before completing 75 semester hours. Transfer students with 75 or more hours must attempt the examination during their first semester at the university.

## Business Core Requirements

### Lower Level

MATH 1305	Finite Math with Applications
MATH 1306	Fundamentals of Calculus with Applications
ACC 2301	Financial Accounting
ACC 2302	Managerial Accounting
ECO 2301	Principles of Economics I
ECO 2302	Principles of Economics II

### Upper Level

BA 3300	Business Cornerstone
BA 3301	Legal Environment of Business
CIS 3302	Management Information Systems (Not required for Accounting majors)
ENG 3302	Business and Technical Report Writing

FIN 3302	Business Finance
MATH 3309	Statistical Analysis for Business Applications
MGT 3301	Management of Organizations
MKT 3301	Principles of Marketing
MGT 3332	Quantitative Decision Making
ADM 4301	Business Communications
BA 4302	Business Strategy

## Major in Accounting (126 hours)

**Randy Serrett**, PhD, Coordinator  
Room 1064-North, 713-221-8578

**Accounting faculty:** Bressler, Duangploy, (Fiesta Chair), Omer, Phillips, Serrett, Shelton, Simms, Wadhwa, Williams

Accounting graduates have flexibility in career choices due to the wide variety of accounting specializations and the breadth of accounting applications. The program prepares graduates for careers in public accounting, accounting within business entities, or accounting within governmental or not-for-profit agencies. Accounting serves as an excellent background for students planning to pursue graduate studies or careers in law. The program prepares graduates to pass all sections of the Uniform Certified Public Accountants exam and provides the basic courses related to preparing for the Certified Management Accountants exam as well as other specialized accounting certification exams.

The Texas Public Accountancy Act of 1991 requires that a CPA candidate sitting in Texas for the CPA Exam for the first time as of May, 1998 have (1) a baccalaureate degree with any major, (2) two basic accounting courses plus an additional 30 hours of accounting, (3) 20 hours of business related courses, (4) an approved 3 semester hour ethics course, and (5) a total of 150 unduplicated college transcript hours. The candidate is NOT required to complete a master's degree.

Contact the Texas State Board of Public Accountancy (512-505-5599) for clarification of part-time student exemptions and the 150-hour grace period.

### General Education Requirements (42 hours)

Students must complete all common core requirements (see page 23) prior to enrolling in upper-level courses.

### Business Core Requirements (48 hours)

See page 29 for the list of Business Core requirements.

### Accounting Major Requirements (27 hours\*)

ACC 3300	Intermediate Accounting I
ACC 3301	Intermediate Accounting II
ACC 3302	Intermediate Accounting III
ACC 3303	Cost Accounting
ACC 3304	Accounting Information Systems
ACC 4301	Individual Income Taxation
ACC 4302	Corporation Taxation
ACC 4303	Advanced Accounting
ACC 4304	Auditing

\*For purposes of taking the CPA exam in Texas, the Texas State Board of Public Accountancy (TSBPA) will accept not fewer than 30 passing semester hours of upper division accounting courses. The

TSBPA requires that at least 15 of these hours must result from physical attendance at classes meeting regularly on the campus.

### Professional Track (6 hours)

Accounting majors may, but are not required to, choose one of the following professional tracks. Students following a particular track will select one course from Group A and one course from Group B within the chosen track. Students who do not wish to follow a track may choose any two upper level courses in the College of Business.

#### Financial Reporting

Group A (choose one of the following)

- FIN 3301 Small Business Finance
- FIN 3306 Risk Management
- FIN 4301 Cases in Managerial Finance
- FIN 4303 International Finance
- FIN 4305 Investments

Group B (choose one of the following)

- ACC 3305 Governmental Accounting
- ACC 3307 Oil and Gas Accounting
- ACC 3323 International Accounting
- ACC 4321 Financial Reporting Theory

#### Auditing and Taxation

Group A (choose one of the following)

- FIN 3306 Risk Management
- FIN 4301 Cases in Managerial Finance
- FIN 4303 International Finance
- FIN 4305 Investments

Group B (choose one of the following)

- ACC 3305 Governmental Accounting
- ACC 4309 EDP Audit and Controls
- ACC 4322 Estate, Gifts, and Trust Taxation
- ACC 4325 Tax Research Methodology

#### Cost Management and Decision Analysis

Group A (choose one of the following)

- ECO 3302 Managerial Economics
- ECO 3303 Economics of Industrial Organization
- ECO 4303 International Economics
- ECO 4307 Health Economics
- FIN 4301 Cases in Managerial Finance
- FIN 4305 Investments
- MGT 4308 Applied Organizational Behavior

Group B (choose one of the following)

- ACC 3323 International Accounting
- ACC 4307 Accounting Analysis for Decision Making
- ACC 4321 Financial Reporting Theory

#### Accounting Information Systems

Group A (choose one of the following)

- CIS 3301 Systems Analysis and Design\*
  - CIS 3304 Microcomputer Applications in Business
  - CIS 4303 Strategic Information Systems
- \*must select CIS 2301 from Group B to fulfill prerequisite

Group B (choose one of the following)

- ACC 4307 Accounting Analysis for Decision Making
- ACC 4309 EDP Audit and Controls
- ACC 4321 Financial Reporting Theory
- CIS 2301 Computer Algorithms and Problem Solving Using C++\*

\*must be taken as prerequisite if CIS 3301 is selected from Group A

### Elective (3 hours)

Any lower level elective course.

## Major in Administrative Management (126 hours)

**Chynette Nealy**, EdD, Coordinator  
Room 1019-North, 713-222-5367

### Administrative Management faculty: Ashe, Nealy

Administrative Management is a specialized degree that aims to prepare students with organizational skills needed in a competitive global market. This knowledge base is essential to managers during pursuit of organizational objectives. Faculty members seek to provide students with realistic and applicable approaches that allow development and/or enhancement of organizational skills. Methods used by faculty members to accomplish these objectives include: networking within the business community, analyzing trends impacting modern management practices, presentations at scholarly and professional conferences.

Career outlook for graduates is broad given the overall strategic program design. Employment tracts exist within the business/industry market as well as the business aspects of government agencies. Prior to graduating, students have opportunities to participate in professional development activities such as internships provided by corporate participants for students with limited professional experience. Opportunities for the working professionals focus on personal growth by providing corporate presentations and/or membership to professional organizations. The changing global market requires comprehensive managerial skills focused on in the Administrative Management degree program.

### General Education Requirements (42 hours)

Students must complete all common core requirements (see page 24) prior to enrolling in upper-level courses.

### Business Core Requirements (51 hours)

See page 29 for the list of Business Core requirements.

### Administrative Management major requirements (27 hours)

ADM 2303	Information Processing I
ADM 3301	Records Management
ADM 3302	Supervision of Personnel
ADM 3309	Management of the Virtual Workplace
MGT 3302	Human Resource Management
MGT 3304	Labor Management Relations
or	
MGT 3306	Compensation Management
ADM 4302	Supervisory Problems
ADM 4303	Administrative Management
ADM 4311	Seminar in Administrative Management

### Electives (6 hours)

Lower- or upper-level non-Business elective  
Upper-level Business elective

## Major in Computer Information Systems (126 hours)

**Utpal Bose**, PhD, Coordinator  
Room 1078-North, 713-221-8251

**Computer Information Systems faculty:** Bose, Chang, Chong, DeVries, Hashemi, Rebhun, Robbins, Yin

The Computer Information Systems curriculum has received national recognition as one of the outstanding undergraduate programs in the United States. It prepares students to plan, develop, and support computer information systems for small, mid-size, and large corporations. Besides building a solid foundation in the nuts and bolts of how computer information systems work, the program provides the business know-how and communication skills needed to administer information systems in business. The curriculum is structured to instill business skills, computer information systems concepts, knowledge of information technology architecture and infrastructure, software development and programming language skills, data communications, database development, and an area of emphasis chosen by the student. These areas include software development, database and knowledge management, computer networks and information security, and electronic commerce. An environment is offered to students that allows them to prepare themselves for a lifetime of learning and growth in various information technology careers such as programmer, systems analyst, database administrator, knowledge systems developer, network systems administrator, electronic commerce systems developer, or information system consultant.

The program is frequently updated with the help of an industry advisory board comprised of information technology professionals from major corporations and public institutions, in order to keep abreast of new information technologies and business methods. The program is based on a national model curriculum developed by educators and computer professionals, endorsed by the Association for Information Technology Professionals, the Association for Computing Machinery, the Association for Information Systems, and adopted by leading universities across the nation.

### General Education Requirements (42 hours)

Students must complete all common core requirements (see page 24) prior to enrolling in upper-level courses.

### Business Core Requirements (51 hours)

See page 28 for the list of Business Core requirements.

### Computer Information Systems Major Requirements (21 hours)

CIS 2301 Computer Algorithms and Problem Solving Using C++  
CIS 3301 Systems Analysis and Design  
CIS 3303 Computer Hardware, Systems Software and Architecture  
CIS 3305 Computer Networking and Data Communications  
CIS 3306 Database Management Systems  
CIS 4312 Systems Development Project

#### One of the following:

CIS 3311 Programming Languages: Procedural, Nonprocedural and Fourth Generation  
CIS 3321 Programming in Visual Basic  
CIS 3325 Programming in COBOL  
CIS 3330 Programming in Java

### **Electives (12 hours)**

Upper-level CIS electives. Choose two courses from one of the following groups:

#### **Database Management**

CIS 4306 Advanced Database Management Systems  
CIS 4320 Decision Support and Knowledge Systems

#### **Electronic Commerce:**

CIS 4313 Introduction to Electronic Commerce  
CIS 4314 Electronic Commerce Systems Development

#### **Application Development**

CIS 4306 Advanced Database Management Systems

#### **One of the following:**

CIS 4317 Advanced Programming in C++  
CIS 4321 Advanced Programming in Visual Basic  
CIS 4325 Advanced Programming in COBOL  
CIS 4330 Advanced Programming in Java

#### **Computer Networking**

CIS 4305 Management of Telecommunication Systems  
CIS 4316 Information Security Management

#### **Information Technology**

Any two upper-level CIS courses. Choices may include either CIS 3399 or CIS 4380 but not both.

One upper-level Business elective.

One non-Business elective.

## **Major in Finance (126 hours)**

**Samuel H. Penkar, DBA**

Coordinator Room 1035-North, 713-221-8965

**Finance faculty:** Pelaez, Penkar, Smith, Tokic, Verma

The Finance area has experienced rapid growth in recent years due to the changing market conditions and the way businesses operate. Numerous opportunities are available for finance majors for a career in financial management with manufacturing and service companies. Financial institutions (banks, savings and loan associations, mutual savings banks, credit unions, mortgage finance companies and insurance companies) in Houston and elsewhere offer promising careers to aspiring and well-trained people. Similarly, there are many opportunities available in the investments field (brokerage houses, mutual funds, bank trust departments, financial planners). Students interested in real estate or international finance will find a wide range of courses from which to choose. The finance major prepares students for these careers as well as for certification as a Chartered Financial Analyst or as a Certified Financial Planner. Courses in the Finance major provide a sound theoretical foundation of financial markets and financial management of business, together with the study of other aspects of business required of all business graduates.

#### **General Education Requirements (42 hours)**

Students must complete all common core requirements (see page 24) prior to enrolling in upper-level courses.

#### **Business Core Requirements (51 hours)**

See page 29 for the list of Business Core requirements.

#### **Finance Major Requirements (21 hours)**

FIN 3301 Small Business Finance

FIN 3305 Money and Banking

MATH 3310 Statistical Analysis for Business Applications II

or

ECO 4301 Business Fluctuation Forecasting

FIN 4301 Cases in Managerial Finance

FIN 4303 International Finance

FIN 4305 Investments

FIN 4309 Seminar in Finance

#### **Electives (12 hours)**

Lower-level Business elective

Upper-level Business elective

Upper-level Finance Electives (6 hours)

## **Major in General Business (126 hours)**

**Kurt Stanberry, JD, MBA, Coordinator**

Room 1056-North, 713-221-8672

**General Business faculty:** Spilger, Stanberry, Usnick

A vital part of UH-Downtown's mission is to offer high quality business education to prepare students for immediate entry into the local business community. Designed for students who seek a strong interdisciplinary business program, the General Business major combines a solid foundation of general education with understanding of the fundamental theories and procedures of basic business functions.

Through this major, students have the opportunity to tailor their course work to meet individual career goals. For example, a student with an entrepreneurial interest might choose courses in small business management, marketing and personnel. A student interested in working in the oil industry might choose professional land management courses. Students interested in focusing on international business might take the courses offered in international business, international marketing, international business law, international accounting and international economics.

A student majoring in General Business can combine this major with any minor(s). The General Business major cannot be combined with a second business major to form a double major unless the student takes 30 additional upper-level hours. At least 50% of the upper-level business hours must be taken from the University of Houston-Downtown.

#### **General Education Requirements (42 hours)**

Students must complete all common core requirements (see page 24) prior to enrolling in upper-level courses.

#### **Business Core Requirements (51 hours)**

See page 29 for the list of Business Core requirements.

#### **General Business Major Requirements (30 hours)**

BA 3302 Commercial Law

27 hours of business courses beyond the Business Core from at least three of the following areas:

Accounting

Administrative Management

Business Administration

Computer Information Systems

Economics

Energy Management

Finance

Management

Marketing

Professional Land Management

No more than 12 of these 27 hours may be taken in any one area. At least 21 of these 27 hours must be upper-level courses that are not being counted toward a second business major.

#### **Electives (3 hours)**

An upper-level non-Business course.

### **Major in International Business (126-128 hours)**

**Anisul Islam**, PhD, Coordinator  
Room 1029-North, 713-221-8914

Given the significant role of the United States in world affairs and the importance of globalization of business to American business enterprise, this major offers a combination of basic business knowledge with an interdisciplinary study of international practices and policies. The curriculum of this major is designed to prepare students for positions in government, business or international agencies in the fields of international trade, international finance, international marketing, international management, and international accounting.

#### **General Education Requirements (42 hours)**

Students must complete all common core requirements (see page 24) prior to enrolling in upper-level courses.

#### **Business Core Requirements (51 hours)**

See page 29 for the list of Business Core requirements.

#### **International Business Major Requirements (24-26 hours)**

18 hours from the following courses:

Foreign Language (6 to 8 hours): Depending upon placement, either two semesters (8 hours) of introductory or 6 hours of advanced language courses.

MKT 3304 International Marketing

ACC 3323 International Accounting

BA 3304 International Business Law

BA 3320 International Business

ECO 4303 International Economics

FIN 4303 International Finance

MGT 4301 International Management

#### **Business Electives (6 hours)**

2 of the following courses:

ECO 3303 Industrial Organization

MKT 4308 Exporting and Importing

ECO 4309 Economic Development

BA 4380 Field Experience

#### **Free Electives (3 hours)**

Students are encouraged to choose one of the following:

COMM 2307 International Cultural Communication

PHIL 3322 World Religions

POLS 4303 International Politics

A foreign language course beyond the foreign language requirement

### **Major In Management (126 hours)**

**Margaret Shipley**, PhD, Coordinator  
Room 1030-North, 713-221-8571

**Management faculty:** Aven, Bates, Coy, Efraty, Khoja, Maranville, Mitchell, Monteils, Nino, Shipley

The management major introduces the student to the processes and activities required for effective functioning of organizations in a global environment. The management program offered at UHD provides flexibility in course selection. Organizational and group behavior, human resource management, small business/entrepreneurship, international management, quality management, project management, diversity management, and quantitative methods are among the subjects offered in this program. Emphasis is placed on the team building and critical thinking skills necessary for effective managerial decision making. Career opportunities in management exist in both production-oriented and service-oriented organizations in the public and private sectors. Graduates may be employed in management positions within any functional area of a company including human resources and operations planning and control. This program is recommended for students who are interested in the management of organizations as well as those interested in managing their own businesses.

#### **General Education Requirements (42 hours)**

Students must complete all common core requirements (see page 24) prior to enrolling in upper-level courses.

#### **Business Core Requirements (51 hours)**

See page 29 for the list of Business Core requirements.

#### **Management Major Requirements (24 hours)**

MGT 4308 Applied Organizational Behavior

MGT 4330 Project Management

Minimum of 4 of the following courses:

MGT 3302 Human Resource Management

MGT 3304 Labor Management Relations

MGT 3306 Compensation Management

MGT 3307 Equal Opportunity Management

MGT 3310 Service Operations

MGT 3399 Directed Studies in Management

MGT 4301 International Management

MGT 4303 Small Business Management

MGT 4314 Quality Management

MGT 4390 Selected Topics in Management

Maximum of 2 of the following courses:

MGT 3303 Negotiating Skills and Techniques

MGT 3308 Purchasing Management

MGT 3309 Materials Management

BA 3303 Environmental Issues in Business

BA 3305 Entrepreneurship

BA 3308 Business Ethics

#### **Electives (9 hours)**

Upper-level Business electives (6 hours)

Lower- or upper-level non-Business elective: (3 hours)

## Major In Marketing (126 hours)

**Brent Goff**, PhD, Coordinator  
Room 1066-North, 713-221-8080

**Marketing faculty:** Goff, Jackson, Johnson, Pointer, Strain

Marketing is universally needed in both domestic and international businesses. Careers in marketing offer a large variety of activities utilizing different skills and talents. Those who want to emphasize their creativity may enjoy the promotional aspects of marketing including personal selling, advertising and marketing strategy. Others whose abilities are more quantitative may prefer pricing, distribution and marketing research. The marketing program at UHD is designed to allow students the freedom to develop their individual skills and talents in marketing while providing the marketing fundamentals needed for a career in marketing.

Wherever students' interests lie, there are areas of emphasis in marketing to match their employment objectives. Career opportunities in marketing are not limited to the private sector. Students interested in working in governmental agencies and nonprofit organizations will find that marketing majors are sought by these employers as well.

### General Education Requirements (42 hours)

Students must complete all common core requirements (see page 24) prior to enrolling in upper-level courses.

### Business Core Requirements (51 hours)

See page 29 for the list of Business Core requirements.

### Marketing Major Requirements (21 hours)

MKT 4305 Consumer Behavior  
MKT 4306 Marketing Research  
MKT 4309 Marketing Management & Strategy  
4 of the following courses:  
MKT 3302 Personal Selling  
MKT 3303 Business Marketing  
MKT 3304 International Marketing  
MKT 3305 Promotional Strategy  
MKT 3330 Retail Management  
MKT 3399 Directed Study in Marketing  
MKT 4307 Traffic & Transportation  
MKT 4308 Exporting & Importing  
MKT 4310 Seminar in Retail Strategy  
MKT 4390 Selected Topics in Marketing

### Electives (12 hours)

Upper-level Business electives (6 hours)  
Upper-level non-Business electives (6 hours)

## Major in Supply Chain Management (126 hours)

**Ralph Kauffman**, PhD, Coordinator  
Room 1017-North, 713-221-8962

**Supply Chain Management faculty:** Adams, Kauffman, Ruthstrom, Stading

Every year more than \$1,500 billion of materials are purchased by manufacturing firms alone. Federal, state and local governments pur-

chase another \$1,000 billion of goods and services per year. In Houston and across the nation, supply management, the acquisition and management of supplies and services, plays an important role in the economy. In the private sector, every dollar saved by purchasing and supply management professionals adds another dollar to profit. In the public sector, every dollar saved by a government purchasing office represents either a dollar available for another project or for tax reductions.

Career opportunities in the Supply Chain Management area are available for students with a sound understanding of purchasing and supply management strategies. Hospitals, city and county health departments, public utilities, and such diverse industries as engineering design and construction manufacturing, parts distribution, chemicals, oil, foods, trucking, pipelines, and retail organizations currently employ graduates of UHD's program. A major in Supply Chain Management combined with a minor in engineering technology, marketing, or management provides a broad background, which can enhance students' career opportunities.

The University of Houston-Downtown offers one of the two AACSB-International accredited Supply Chain Management majors in Texas. The program is frequently updated in consultation with the National Association of Purchasing Management-Houston and the local chapter of the National Institute of Governmental Purchasing.

### General Education Requirements (42 hours)

Students must complete all common core requirements (see page 24) prior to enrolling in upper-level courses.

### Business Core Requirements (51 hours)

See page 29 for the list of Business Core requirements.

### Supply Chain Management Major Requirements (24 hours)

MGT 3303 Negotiating Skills and Techniques  
MGT 3308 Purchasing Management  
MGT 3309 Materials Management  
MGT 4307 Supply Chain Logistics Management  
MGT 4311 Federal Government Procurement  
MGT 4314 Quality Management  
MGT 4315 Supply Chain Management  
MGT 4350 Advanced Purchasing and Supply Management Seminar

### Electives (9 hours)

Upper-level Business electives (6 hours). The following courses are recommended:

BA 3302  
ECO 3303  
ECO 4301  
MGT 3316  
MGT 4312  
MGT 4313  
MGT 4330  
MKT 3303  
MKT 3304  
MKT 4308  
Upper-level non-Business electives (3 hours)

## Minor Programs

### General Academic Requirements for Minors

- Student must have a 2.0 cumulative GPA or better at UHD to be approved to pursue a minor.
- Student must have a 2.0 GPA or better in courses in the minor for minor to be certified at graduation.
- No field experience course (ACC 4380, ADM 4380, BA 4380, CIS 4380, FIN 4380, MGT 4380, MKT 4380, or PLM 4380) may be applied to a minor program.
- The minor field elected must be different from the major.
- A student must complete all course work required for the minor in addition to all course work required for the degree prior to graduation.

Students should note that in some instances courses listed as requirements or options for the minor program may have prerequisites that are not listed as part of the program. Prerequisites will not be waived.

The procedures for declaring a minor are available from the Office of Business Student Records, Room 1037-North.

### Minor in Accounting (21 hours)

#### Required courses (15 hours)

ACC 2301 Financial Accounting  
ACC 2302 Managerial Accounting  
ACC 3300 Intermediate Accounting I  
ACC 3301 Intermediate Accounting II  
ACC 4301 Individual Income Taxation

#### Elective courses (6 hours)

Choose two of the following:

ACC 3302 Intermediate Accounting III  
ACC 3303 Cost Accounting  
ACC 3304 Accounting Information Systems  
ACC 3307 Oil and Gas Accounting  
ACC 4302 Corporate Taxation  
ACC 4303 Advanced Accounting  
ACC 4304 Auditing  
ACC 3323 International Accounting

### Minor in Administrative Management (18 hours)

#### Required courses (12 hours)

ADM 2303 Information Processing I  
ADM 3301 Records Management  
ADM 3302 Supervision of Personnel  
ADM 3309 Management in the Virtual Workplace

#### Elective courses (6 hours)

Choose two of the following:

ADM 3303/MGT 3307 Equal Opportunity Management  
ADM/BA 3308 Business Ethics  
ADM 4302 Supervisory Problems  
ADM 4305 Information Processing Management  
MGT 3301 Management of Organizations  
MGT 3302 Human Resource Management Personnel Administration  
MGT 3306 Compensation Management Wage and Salary Administration

### Minor in Computer Information Systems (18 hours)

#### Required courses (6 hours)

CIS 2301 Computer Algorithms and Problem Solving Using C++  
CIS 3302 Management of Information Systems

#### Elective courses (12 hours)

Choose a minimum of two from the following:

CIS 3301 Systems Analysis and Design  
CIS 3303 Computer Hardware, Systems Software and Architecture  
CIS 3305 Computer Networking and Data Communications  
CIS 3306 Database Management Systems

Choose a maximum of two courses from the following other than the above courses:

Any 3000-level CIS course  
Any 4000-level CIS course

### Minor in Economics (18 hours)

#### Required courses (6 hours)

ECO 2301 Principles of Economics I  
ECO 2302 Principles of Economics II

#### Elective courses (12 hours)

Any 4 upper-level economics courses. One of the following may be substituted for one of the economics courses:

FIN 3305 Money and Banking  
ACC 3300 Analysis of Financial Reporting

### Minor in Energy Management (18 hours)

#### Required courses (15 hours)

EM 3301 Introduction to the Petroleum Industry  
EM 4301 Oil and Gas Law  
EM 4310 Energy Transactions and Practical Solutions  
EM 4350 Hydrocarbon Marketing  
MGT 3303 Negotiating Skills and Techniques

#### Elective course (3 hours)

Choose one of the following:

ACC 3307 Oil and Gas Accounting  
EM 3399 Directed Study in Energy Management

### Minor in Finance (18 hours)

#### Required courses (12 hours)

FIN 3305 Money and Banking  
FIN 4303 International Finance  
FIN 4305 Investments  
FIN 4309 Seminar in Finance

#### Elective courses (6 hours)

Two additional upper-level finance courses

### Minor in General Business (18 hours)

Available only to non-Business majors.

#### Required courses (6 hours)

MGT 3301 Management of Organizations  
MKT 3301 Principles of Marketing

**Elective courses (12 hours)**

Select 4 courses from Administrative Management, Business Administration, Management, Marketing, or Professional Land Management. No more than 2 courses may be from any one field. At least 2 courses must be upper-level.

**Minor in International Business (18 hours)****Required course (9 hours)**

BA 3320 International Business  
ECO 4303 International Economics  
FIN 4303 International Finance

**Elective courses (9 hours)**

Choose three of the following:  
ACC 4323 International Accounting  
BA 3304 International Business Law  
ECO 4303 International Economics  
ECO 4309 Economic Development  
FIN 4303 International Finance  
MGT 4301 International Management  
MKT 3304 International Marketing  
MKT 4308 Exporting and Importing

Choose one of the following:

COMM 2307 Intercultural Communication  
POLS 4303 International Politics  
PHIL 3322 World Religions

**Minor in Management (18 hours)****Required courses (6 hours)**

MGT 3301 Management of Organizations  
MGT 4308 Applied Organizational Behavior

**Elective courses (12 hours)**

Choose a minimum of two of the following:  
MGT 3302 Human Resource Management  
MGT 3304 Labor Management Relations  
MGT 3306 Compensation Management  
MGT 3307 Equal Opportunity Management  
MGT 3310 Service Operations  
MGT 3332 Quantitative Decision Making  
MGT 3399 Directed Studies  
MGT 4301 International Management  
MGT 4303 Small Business Management  
MGT 4314 Quality Management  
MGT 4390 Selected Topics in Management  
MGT 4330 Project Management

Choose a maximum of two of the following:

BA 3305 Entrepreneurship  
BA 3308 Business Ethics  
MGT 3303 Negotiating Skills and Techniques  
MGT 3308 Purchasing Management  
MGT 3309 Materials Management

**Minor in Marketing (18 hours)****Required courses (12 hours)**

12 hours of upper-level marketing courses.

**Elective courses (6 hours)**

Choose two of the following:

BA 3308 Business Ethics  
BA 4303 Small Business Management  
ECO 4303 International Economics  
MGT 3303 Negotiating Skills and Techniques  
FIN 3311 Real Estate Valuation

**Minor in Metro-Entrepreneurship (18 hours)****Required courses (15 hours)**

BA 3340 Entrepreneurial Revenue  
BA 3341 Entrepreneurial Costs and Budgeting  
BA 4304 Entrepreneurial Capitalization and Funding  
BA 4305 The Business Plan  
BA 4379 Implementing the Business Plan

**Elective courses (3 hours)**

Choose one of the following:  
BA 3305 Introduction to Entrepreneurship  
MGT 4303 Small Business Management

**Minor in Professional Land Management (18 hours)****Required courses (15 hours)**

EM 3301 Introduction to the Petroleum Industry  
EM 4301 Energy Law  
MGT 3303 Negotiating Skills and Techniques  
PLM 3305 Engineering, Geology and Geophysics for the Land Professional  
PLM 4303 Land Management Practices

**Elective courses (3 hours)**

Choose one of the following:  
BA 3302 Commercial Law  
BA 3309 Real Estate Law  
PLM 3399 Directed Study in PLM

**Minor in Retail Management (18 hours)**

MKT 3301 Principles of Marketing  
MGT 3301 Management of Organizations  
MGT 3310 Service Operations  
MGT 4308 Applied Organizational Behavior  
MKT 3330 Retail Management  
MKT 4310 Seminar in Retail Strategy

**Minor in Small Business Management (18 hours)****Required courses (15 hours)**

BA 3305 Entrepreneurship  
ECO 3302 Managerial Economics  
FIN 3301 Small Business Finance  
MGT 4303 Small Business Management  
MKT 4306 Marketing Research

**Elective course (3 hours)**

Choose one of the following:  
ADM 3309/CIS 3318 Management in the Virtual Workplace  
MGT 3308 Purchasing Management

MGT 3309 Materials Management  
MGT 4308 Applied Organizational Behavior

## Minor in Supply Chain Management (18 hours)

### Required courses (12 hours)

MGT 3301 Management of Organizations  
MGT 3303 Negotiating Skills and Techniques  
MGT 3308 Purchasing Management  
MGT 3309 Materials Management

### Elective courses (6 hours)

Choose two of the following:  
BA 3302 Commercial Law  
MGT 3316/CIS 3316 Supply Chain Information and Control Systems  
MGT 4307/MKT 4304 Supply Chain Logistics Management  
MGT 4311 Governmental Procurement  
MGT 4314 Quality Management  
MGT 4315 Supply Chain Management  
MGT 4330 Project Management  
MKT 3303 Industrial Marketing  
MKT 3304 International Marketing

## Humanities and Social Sciences

## COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

**Susan K. Ahern**, PhD, Dean  
**Robert L. Jarrett**, PhD, Associate Dean  
Room 1015-South, 713-221-8009

The College of Humanities and Social Sciences offers courses and degrees that explore human culture and social interaction and that develop skills in analysis and communication. The fundamental courses in humanities and social sciences constitute basic requirements in the common core curriculum for a university education.

### Programs of Study

#### Degree Programs

The College of Humanities and Social Sciences offers the following degree programs:

Bachelor of Arts with majors in:

Communication Studies  
English  
History  
Humanities  
Philosophy (*pending Coordinating Board approval*)  
Social Sciences  
Spanish  
Social Sciences

Bachelor of Science with majors in:

Interdisciplinary Studies  
Political Science  
Professional Writing  
Psychology

Social Sciences  
Sociology

Master of Science in Professional Writing and Technical Communication

### General Education Requirements

All students seeking a bachelor's degree at the University of Houston-Downtown must complete the general education requirements, including the common core courses, application courses, enhancement courses and the Junior Writing Proficiency Examination (see pages 24-25). Students who declare their major in the College of Humanities and Social Sciences should undertake and pass the Junior Writing Proficiency Examination the semester before or the semester they apply for a major. Fulfillment of general education requirements may vary depending on the degree.

### Being Accepted as a Degree Major

All undergraduate students at UH-Downtown are advised in University College until they are accepted into one of the degree programs. Before applying for acceptance to a degree program in the College of Humanities and Social Sciences, a student must:

- have fulfilled all Texas Success Initiative obligations;
- have completed all required developmental courses;
- have completed ENG 1302 and Math 1301/1310 or equivalent;
- have completed a minimum of 30 hours toward the general education requirements;
- be in good academic standing with a UHD GPA of 2.0 or above; and
- submit all college transcripts and meet all other requirements necessary for release by University College.

After these requirements are met, University College will refer the student's degree application to the College of Humanities and Social Sciences. Four weeks after the student completes a paper or electronic application for a major and after University College refers the application to the college, students can expect to receive notice that the application has been accepted. Six weeks after applying for a major, students accepted by the college for a major may pick up a copy of a plan that identifies transfer hours and UHD hours applied toward their degree.

### Advising

The College provides faculty advisors:

- to advise majors on degree requirements and selection of courses
- to initiate the student's graduation application during course registration for the semester that degree requirements are completed
- to initiate either waivers of degree requirements or requests to exceed the maximum semester course load
- to register in upper-level business courses.

To see a college advisor, students should come to the college office in Room 1015-South. Before consulting with a college advisor, students should review the requirements for their academic degree described in this catalog, select potential courses to fulfill degree requirements, and prepare a tentative course schedule. Courses and times available for the next academic semester are available online on Student e-Services.

Majors in good academic standing can register online on Student e-Services after the priority registration period begins. Students should consult a college advisor several times in their UHD career, the semester that their application for a major is accepted, the semester before they complete their degree in order to apply for graduation, and at any time for advisement on the selection of courses necessary to satisfy degree requirements for their major. Students who wish to enroll in upper-level business courses must consult a college advisor, satisfy all prerequisites or corequisites for the course, then receive approval from the Associate Dean of Business.

Students on academic probation who wish to register for next semester courses must see the Associate Dean in Room 1015-South after the regular registration period begins. Students on academic suspension may register at the Office of Records only after current semester grades are posted and after coursework is approved by the Associate Dean in Room 1015-South. Students on permanent suspension may register only after their reinstatement petition has been approved by the Associate Dean of the College and Vice-President for Academic Affairs.

## Requirements for Majors

All undergraduate degree programs in the College of Humanities and Social Sciences require a minimum of 30 semester credit hours in residence and a minimum of 18 upper-level semester credit hours earned at UHD. The College reserves the right to limit the number of directed study, internship, service learning, experience learning, and credit-by-examination credit hours that can be applied to degree requirements, especially major requirements.

## Minors

The College of Humanities and Social Sciences offers undergraduate minors in the following areas:

- Art
- Art Administration
- Communication Studies
- English
- Ethnic Studies
- Gender Studies
- History
- International Relations
- Philosophy
- Political Science
- Professional Writing
- Psychology
- Quantitative Methods in Research
- Sociology
- Spanish
- Theatre

Students seeking minors in these areas must meet the following requirements:

- The grade point average for all courses taken at UH-Downtown and applied to the minor must be at least 2.0.
- Upper-level courses applied toward the major may not also be counted toward the fulfillment of minor requirements.
- Transfer courses applied to the minor may be restricted by the individual program.
- Courses applied toward a minor require completion of 12 to 18 hours

of coursework, with a minimum of six to nine hours of upper-level course work taken at UH-Downtown.

Detailed requirements for each minor, including total hours and required upper-level hours, are listed with the curricula of the department offering the minor.

## Interdisciplinary Minors

The College of Humanities and Social Sciences offers interdisciplinary minors in Ethnic Studies and Gender Studies.

## Minor in Ethnic Studies

18 approved hours required, with at least 9 upper-level hours taken at UHD. The following courses will apply without advisor approval:

- ANTH 2302 Cultural Anthropology
- HIST 2309 Ethnic Minorities
- COMM 2307 Intercultural Communications
- COMM 3313 Race, Ethnicity, and Communication
- CJ 3317 Race and Crime
- ENG 3321 African-American Literature
- ENG 3322 Mexican-American Literature
- ENG 3341 Postcolonial Studies
- ENG 4321 Advanced African-American Studies
- ENG 4325 Advanced Mexican-American Studies
- HIST 2309 Ethnic Minorities in American History
- HIST 3308 History of Mexico
- HIST 3322 African-American History
- HIST 4320 Slavery in the Americas
- HUM 3304 American Ethnic Heritage
- HUM 3320 Foreign Language Literature in Translation
- HUM 3321 Hispanic Culture and Civilization
- MGT 3303 Equal Opportunity in Management
- MUS 3302 Introduction to African-American Music
- PHIL 3317 Philosophy of Race
- PHIL 3322 World Religions
- POLS 3303 Urban Politics
- POLS 3306 Civil Liberties in the United States
- POLS 3312 Hispanic Politics
- POLS 4302 Latin American Politics
- POLS 4304 American Political Thought
- PSY 4303 African-American Issues in Psychology
- SOC 3304 Minorities in America
- SOC 3306 Social Inequality
- SOC 4305 Urban Sociology
- SOSE 3306 Culture of the Urban School
- SPAN 3324 People, Culture and Trade in Spanish America

Students may petition to apply toward the minor other courses taught with a significant ethnic studies focus. Petitions should be initiated with a college advisor.

## Minor in Gender Studies

18 approved hours required. 12 hours at the upper-level, with at least 9 hours taken at UHD. Prerequisites cannot be waived; see college advisor for approval of upper-level business courses. The following courses will apply to the minor without advisor approval:

BIOL 4350 Social Biology  
 CJ 4314 Women and the Criminal Justice System  
 ENG 3350 Gender Studies in Literature  
 ENG 4350 Advanced Gender Studies  
 HIST 4303 US Women's History  
 MGT 3307/ADM 3303 Equal Opportunity in Management  
 PHIL 3319 Philosophy of Gender  
 POLS 4306 Women and Politics  
 PSY 3310 Psychology of Women  
 SOS 2308 Human Sexuality  
 SOC 2304 Sex Roles  
 SOC 3303 Sociology of the Family  
 SOC 3306 Social Inequality  
 COMM 3308 Family Communication  
 COMM 3310 Women, Men, and Communication

Students may petition to apply toward the minor other courses taught with a significant gender studies focus. Petitions should be initiated with a college advisor.

## Bachelor of Science

### Major in Interdisciplinary Studies

**Barbara Canetti-Rios, MA, Coordinator**  
 Room 1015-South, 713-221-8009

The Bachelor of Science with a major in Interdisciplinary Studies permits students to select, from among UHD's offerings in the arts and sciences, those courses that most interest them, and to present 36 semester credit hours of those courses as their major. The degree shares the basic core curriculum with other degrees and includes a distribution of courses to ensure a good academic foundation. Because the degree includes a large number of elective courses, it is often a suitable degree completion alternative for transfer students or students who have discovered that they are no longer interested in a previous major.

Graduates are qualified to undertake a variety of employment or community service opportunities and challenges. By careful selection of courses with the help of a college advisor, students who complete the degree can prepare themselves for graduate or professional programs or for post-baccalaureate teacher certification. In compliance with the accrediting principles of the American Assembly of Collegiate Schools of Business, the business content of non-business programs is limited to 25% of the credit hours applied toward graduation and no more than six hours in business can be applied to the upper-level requirements for the major.

When released by University College, students interested in the Bachelor of Science degree with a major in Interdisciplinary Studies may enroll in the program by contacting the coordinator of academic advising in the College of Humanities and Social Sciences.

#### Degree Requirements

The degree requires completion of 123 hours, at least 36 of which must be upper-level courses (numbered 3000-4999) within the arts and sciences. For degree completion, at least 25% of the semester credit hours must be earned through instruction offered by UH-Downtown. The last 30 of the total hours and 18 of the upper-level hours in the arts and sciences must be successfully completed in residence at UH-

Downtown. The minimum grade point average of 2.0 required for graduation is computed on all UHD course work.

#### Common Core Requirements (42 hours)

See listing under Common Core Requirements on page 24 of this Catalog.

#### Lower-Level Cluster Requirements (18 hours)

Six hours of arts and humanities, excluding developmental courses (ENG 1300 or below, MATH 0300, MATH 1300 and RDG 1300 or below); COMM 1301; three additional hours of literature; six hours of social sciences; three hours of mathematics, computer science or natural sciences, excluding MATH 0300 and MATH 1300.

#### Upper-Level Requirements (36 hours)

At least 36 hours of upper-level work in the arts and sciences offered by UHD's departments of Arts and Humanities, English, Social Sciences, Natural Sciences, and Computer and Mathematical Sciences. With advance approval from the degree coordinator, selected courses from the Department of Urban Education may apply, and no more than six upper-level hours from the College of Business may apply. Due to accrediting requirements in the College of Business, students in the College of Humanities and Social Sciences who plan to enroll in upper-level Business courses must see a college advisor for approval. Six hours of credit in writing-intensive courses are required as part of this program. No more than 18 upper-level hours in a single discipline may be counted toward the major, and no more than 27 total hours in a single discipline (excluding courses used to satisfy common core requirements) may be used to satisfy degree requirements.

#### Electives (27 hours)

From any department at any level, with the following restrictions: developmental courses (ENG 1300 or below, MATH 0300, MATH 1300 and RDG 1300 or below) may not apply to graduation requirements.

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## Department of Arts and Humanities

**Susan J. Baker, PhD, Chair**  
 Room 1009-South, 713-221-8104

#### Faculty

Professors:	Lyttle, Newsum, Roubicek, Wanguri
Associate Professors:	S. Baker, DeWitt, Hagen, Kendall, Mosier, Padilla, Shelley
Assistant Professors:	Camara, Cervenka, Chiquillo, Krupp, Lawrence, Mrak, Nowak, Olson
Lecturers:	Rangel, R. Wilson
Academic Areas:	Art, Communication Studies, Drama, French, Humanities, Music, Spanish

### Programs of Study

Bachelor of Arts with major in Communication Studies  
 Bachelor of Arts with major in Humanities  
 Bachelor of Arts with major in Spanish  
 Bachelor of Science with major in Interdisciplinary Studies

## Mission and Objectives

The Department of Arts and Humanities aims at developing a student's creative and communicative abilities. The department's course offerings support all degree programs at UH-Downtown. Students who wish to pursue a general liberal course of studies may enroll in the program leading to either the Bachelor of Science with a major in Interdisciplinary Studies (see information above) or the Bachelor of Arts with a major in Humanities. Students seeking to work in the communications profession pursue the Bachelor of Arts with a major in Communication Studies.

## Bachelor of Arts

### Major in Communication Studies

**Deloris McGee Wanguri**, PhD, Coordinator  
Room 1021-South, 713-221-8110

Students pursuing the Bachelor of Arts in Communication Studies gain a thorough grounding in the theories, skills, and aesthetics of communication. Students learn how to be effective communicators in a variety of contexts, and are equipped to become inquisitive, probing and reflective professionals and citizens. The degree offers students a broad foundation in theory and practice, with technological application in support of its courses. Besides the core curriculum and the major requirements, the degree includes course work in adjacent academic disciplines, such as writing and the social sciences.

#### Degree Requirements

The Communication Studies major requires a minimum of 122 hours. For degree completion, at least 25% of the semester credit hours must be earned through instruction offered by UH-Downtown. The last 30 of the total hours and 18 of the upper-level hours toward the degree must be successfully completed in residence at UH-Downtown. An overall minimum grade point average of 2.0 at UH-Downtown is required for graduation, and a minimum average of 2.0 must be maintained in the upper-level hours in the major.

#### Common Core Requirements (42 hours)

See listing under Common Core Requirements on page 24 of this Catalog.

#### Preparatory Requirements (26 hours)

- Foreign language in one language (8 hours)
- Fine Arts (3 hours)
- Communication/lower-level (3 hours)
  - Must be COMM 1304 if not taken as part of common core.
- Communication/lower- or upper-level (3 hours)
- Philosophy (3 hours)
- Social Sciences (6 hours)

#### Upper-Level Requirements (24 hours)

- COMM 3320 Communication Theory (3 hours)
- Additional courses in Communication (21 hours)

#### Cognate Areas (15 hours)

- ENG 3302 Business and Technical Report Writing (3 hours)
- 12 hours selected from among the following:
  - COMM 3312 Writing for Presentation
  - ENG 3316 History of Rhetoric

- HUM 3310 Cultural Criticism
  - PSY 3301 Industrial/Organizational Psychology
  - PSY 3310 Psychology of Women
  - PSY 4304 Learning and Behavior
  - SOC 3303 Sociology of the Family
  - SOC 4307 Public Opinion and Mass Communication
- Other courses may be substituted upon petition to the degree coordinator by a student.

#### Electives (15 hours)

From any department at any level, with the following restrictions: Developmental courses (ENG 1300, MATH 0300, MATH 1300, and RDG 1300) may not apply to graduation requirements. No more than 25% of the hours presented for graduation may be credits in business. Electives are an important part of the degree program and should be selected in consultation with an academic advisor.

## Bachelor of Arts

### Major in Humanities

**Susan J. Baker**, PhD, Coordinator  
Room 1009-South, 713-221-8104

The study of the humanities is an investigation of human institutions and artistic achievement, the values embodied in those institutions and works, and the range of aesthetic and philosophic responses to the human condition. The Bachelor of Arts in Humanities program gives a student experience with literature, philosophic writings, the history of human culture, and the performing and visual arts, as well as a framework for critical consideration of cultural values and their expression in institutions, literature and the fine arts. Because this is an interdisciplinary degree, no more than 18 hours of upper-level work in a single discipline may be applied to the major, and no more than 27 total hours in a single discipline (excluding course work required to fulfill common core requirements) may be used to satisfy degree requirements.

#### Degree Requirements

The Bachelor of Arts in Humanities requires a minimum of 125 hours. For degree completion, at least 25% of the semester credit hours must be earned through instruction offered by UH-Downtown. The last 30 of the total hours and 18 of the upper-level hours applied to the degree must be successfully completed in residence at UH-Downtown. An overall minimum grade point average of 2.0 at UH-Downtown is required for graduation, and a minimum average of 2.0 must be maintained in the 36 upper-level hours in the major. In addition to the requirements listed below, every student's program must include a non-verbal analytical reasoning course, either as an elective or in fulfillment of a requirement.

#### Common Core Requirements (42 hours)

See listing under Common Core Requirements on page 24 of this Catalog.

#### Preparatory Requirements (32 hours)

- Philosophy: 6 hours
- Fine arts: 6 hours (at least 3 hours in history or appreciation)
- Written communication: 3 hours
- Speech communication: 3 hours
- Language and culture: 14 hours.
- At least 11 hours of a single foreign language through 2301 and 3

hours of either 2302 or a course focusing on a specific culture, such as:

- HIST 2309 Ethnic Minorities in American History
- COMM 2307 Intercultural Communication
- ENG 3322 Mexican-American Literature
- HUM 3304 American Ethnic Heritage
- HUM 3320 Foreign Literature in Translation
- HUM 3321 Hispanic Culture and Civilization

For students placing out of any foreign language courses, other courses in English, humanities or social sciences may be substituted.

### **Upper-Level Requirements (36 hours)**

#### **Humanities Core (6 hours)**

- HUM 3310: Cultural Criticism (3 hours)
- HUM 4350: Senior Seminar (3 hours)

#### **Concentration of upper-level courses in one of the following humanities disciplines (12 hours)**

Art, Communication, Drama, English, Foreign Language, History, Humanities, Music, Philosophy or Spanish. Students are encouraged to consult with a faculty advisor before deciding on their concentration area.

#### **Upper-level courses taken from any of the following disciplines (18 hours)**

- Art, Communication, Drama, English, Foreign Language, History, Humanities, Music, Philosophy, Political Science (POLS 4304 and POLS 4306 only), Psychology (PSY 4301 only)

#### **Electives (15 hours)**

From any department at any level, with the following restrictions: Developmental courses (ENG 1300, MATH 0300, MATH 1300 and RDG 1300) may not apply to graduation requirements. No more than 25% of the hours presented for graduation may be credits in business. Electives are an important part of the degree program and should be selected in consultation with an academic advisor.

## **Bachelor of Arts**

### **Major in Spanish**

**William J. Nowak**, PhD, Coordinator  
Room 1028-South, 713-221-8673

The Bachelor of Arts degree in Spanish is designed especially for professionals and encourages the integration of Spanish language studies as an essential component of professional development. Students will complete a concentration in a field of academic study that suits their professional goals as well as an internship in which the use of Spanish is required. By combining the academic study of Spanish language and culture with the professional world, students will be well positioned for employment opportunities in which bilingualism is an asset.

#### **Degree Requirements**

The Spanish major requires a minimum of 122 hours. For degree completion, at least 25% of the semester credit hours must be earned through instruction offered by UH-Downtown. The last 30 of the total hours and 18 of the upper-level hours toward the degree must be successfully completed in residence at UH-Downtown. An overall minimum grade point average of 2.0 at UH-Downtown is required for graduation, and a minimum average of 2.0 must be maintained in the upper-level hours in the major.

### **Common Core Requirements (42 hours)**

See listing under Common Core Requirements on page 24 of this Catalog.

### **Preparatory Requirements (20 hours)**

- English Writing (beyond English 1302 at 3000-4999 level)
- Philosophy (Ethics course)
- Foreign Language or Culture courses (14 hours)

### **Upper Level Requirements (27 hours)**

- SPAN 3301 (Advanced Grammar and Composition)
- SPAN 3302 (Professional Writing)
- SPAN 3320 (Professional Oral Communication)
- SPAN 4380 (Field Experience / Internship)
- Additional upper-level elective courses in Spanish (15 hours)

### **Supplemental Concentration in one discipline or area of study (18 hours)**

At least 9 hours must be upper-level (3000-4999). Courses in the supplemental area must be approved by an advisor in conjunction with the Spanish degree coordinator.

### **Electives (15 hours)**

From any department at any level, with the following restrictions: Developmental courses (ENG 1300, MATH 0300, MATH 1300, and RDG 1300) may not apply toward graduation requirements. Electives are an important part of the degree program and should be selected in consultation with an academic advisor.

## **Minor in Art**

Minimum requirements:

- A grade point average of 2.0.
- A grade of at least C in all ART courses.
- A total of 15 hours in ART, 3 hours of field study, and an approved portfolio.

## **Minor in Arts Administration**

Minimum requirements:

- A grade point average of 2.0.
- A grade of at least C in all ART and business courses.
- A total of 18 hours including ACC 2301, MGT 3301, and MKT 3301.
- Arts Administration, HUM 4380 and a fine arts elective beyond the common core fine arts requirement.

## **Minor in Communication Studies**

Minimum requirements:

- A grade point average of 2.0.
- A grade of at least C in all COMM courses.
- A total of 18 hours in Communication (including COMM 1304 and at least 9 upper-level hours in Communication at UHD).

## Minor in Drama

### Minimum requirements:

- A grade point average of 2.0.
- A grade of at least C in all DRA courses
- A total of 18 hours in drama (including at least 9 upper-level hours in drama at UHD).

## Minor in Spanish

### Minimum requirements:

- A grade point average of 2.0.
- A grade of at least C in all SPAN courses.
- A total of 9 upper-level hours in Spanish at UHD.

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## Department of English

**William Gilbert**, PhD, Chair  
Room 1045-South, 713-221-8013

### Faculty

Professors:	Birchak, Dressman, Harned, L. Thomas
Associate Professors:	Ahern, Cheng-Levine, Chiaviello, Creighton, Cunningham, Dahlberg, Farris, Gilbert, Jarrett, Jennings, Moosally, Pavletich, Sullivan, T. Thomas
Assistant Professors:	Blight, Davidson, Garcia, Goleman, Jackson, M. Johnson, Kannenberg, Kintzele, Laity, Schmertz, Shea, Turner, Walker
Instructors:	Kendall-Roundtree
Lecturers:	Canetti-Rios, Coblenz, Corrigan, Fadely, Kuzmick, Rubin-Trimble, C. Smith
Emeriti:	Bartholomew, Franks, Levy

Academic Areas: American studies, communication, English, humanities, reading

## Programs of Study

Bachelor of Arts with a major in English  
Bachelor of Arts with a major in Humanities  
Bachelor of Science with a major in Interdisciplinary Studies  
Bachelor of Science with a major in Professional Writing  
Master of Science in Professional Writing and Technical Communication

The Department of English offers a wide variety of courses designed to improve students' communication skills and enhance their appreciation of the literature, thought, and culture of the English-speaking world. To accomplish these goals, the department offers focused degrees and wide-ranging service courses.

### Degrees

The Bachelor of Arts with a major in English gives students a grounding in the language and literature of English. This grounding makes students aware of how cultural forces shape English language and lit-

erature and how critical approaches illuminate them. The BA in English offers students a range of educational and career options on graduation, including entrance to graduate and professional schools in preparation for careers in academia and such fields as public policy, social work, and law.

The Bachelor of Science with a major in Professional Writing combines the strengths of a solid liberal arts education with practical training and technical expertise. All Professional Writing majors share a core of required upper-level courses and, beyond that core, choose from clusters of courses, and take internships. The combination of flexibility and focus in the degree enables students to prepare to enter such fields as corporate communications, medical writing, or computer documentation, or to continue their education in graduate or professional schools.

The Master of Science in Professional Writing and Technical Communication provides professional-level skills or knowledge in document production, rhetorical analysis, ethical and global awareness, and research methodologies. Beginning with four required graduate core courses, students select six more graduate courses and conduct directed research to complete their degree in one of two ways--by writing a thesis or by working in an internship and doing a capstone project. This academic experience provides excellent background for employment in business or industry or for advancement to management-level positions. See the Graduate Academic Programs section, pp. 90-95 for more detail.

### Service Courses

The English Department's courses in writing, language, and literature support all degrees offered at the University of Houston-Downtown. In addition, courses taught by department faculty form a major component of the programs of the Bachelor of Arts in Humanities and the Bachelor of Science with a major in Interdisciplinary Studies. In all the courses it offers, the department seeks to promote cultural and technological literacy and to improve students' critical thinking skills through analysis, interpretation, and evaluation.

## Bachelor of Arts

### Major in English

**William Gilbert**, PhD, Coordinator  
Room 1045-South, 713-221-8013

### Degree Requirements

The English major requires a minimum of 122 hours. For degree completion, at least 25% of the semester credit hours must be earned through instruction offered by UH-Downtown. The last 30 of the total hours and 18 of the upper-level hours toward the degree must be successfully completed in residence at UH-Downtown. A minimum grade point average of 2.0 at UH-Downtown is required for graduation, and a minimum average of 2.0 must be maintained in the upper-level hours in the major.

### Common Core Requirements (42 hours)

See listing under Common Core Requirements on page 24 of this Catalog.

### Lower-Level Requirements (29 hours)

Foreign language in one language (8 hours)

Fine Arts (3 hours)  
Philosophy (6 hours)  
Social Sciences (6 hours)  
Literature (6 hours) - both halves of a survey of  
World, American, or British Literature

#### **Upper-Level Requirements (36 hours)**

##### **Genre Courses (9 hours)**

ENG 3311 Studies in Poetry  
ENG 3312 Studies in Fiction  
ENG 3313 Studies in Dramatic Literature

##### **Writing/English language (6 hours)**

May include Essay Writing, Creative Writing, History of Rhetoric, Studies in the Theory of Rhetoric, Studies in English Grammar, Introduction to the Study of Language, History of the English Language, or upper-level courses in professional writing.

##### **Literature/Theory (21 hours)**

##### **ENG 4098 English Portfolio**

#### **Electives (15 hours)**

From any department at any level, with the following restrictions: Developmental courses (ENG 1300 and below, MATH 0300, MATH 1300, and RDG 1300 and below) may not apply to graduation requirements. No more than 25% of the hours presented for graduation may be credits in business. Included among the electives should be a course (3 hours) in nonverbal analytical skills if this requirement is not fulfilled by an equivalent course in the lower-level or upper-level requirements.

## Bachelor of Science

### Major in Professional Writing

**Ann Jennings**, PhD, Coordinator  
Room 1045-South, 713-221-8013

#### **Degree Requirements**

The professional writing major requires a minimum of 120 hours. For degree completion, at least 25% of the semester credit hours must be earned through instruction offered by UH-Downtown. The last 30 of the total hours and 18 of the upper-level hours toward the degree must be successfully completed in residence at UH-Downtown. An overall minimum grade point average of 2.0 at UH-Downtown is required for graduation, and a minimum average of 2.0 must be maintained in the upper-level hours in the major.

#### **Common Core Requirements (42 hours)**

See listing under Common Core Requirements on page 24 of this

Catalog. COMM 3306 is recommended in fulfillment of the speech requirement.

#### **Preparatory Requirements (15 hours)**

Philosophy (6 hours)  
Quantitative Analysis (3 hours)  
Upper level English elective (3 hours)  
Upper level elective (3 hours)

#### **Upper-Level Requirements (45-48 hours)**

COMM 3306 Business and Professional Speech Communication  
(may be omitted here if taken as part of the core curriculum)

#### **Professional Writing Core (30 hours)**

ENG 3302 Business and Technical Report Writing  
ENG 3304 Advanced Business and Technical Report Writing  
ENG 3318 Studies in English Grammar  
ENG 3328 Documentation and Manuals  
ENG 3330 Desktop Publishing  
ENG 3331 Advanced Desktop Publishing or ENG 3335 Publishing for the Web  
ENG 4322 Editing, Rewriting and Copyreading  
Upper-level Language (ENG 3316, 3317, 3319, 3320, or 4318)  
Six hours of field experience (ENG 4380, ENG 4680, or approved substitute courses in ENG or COMM)  
ENG 4099 Professional Writing Portfolio

#### **Other Requirements (15 hours)**

Upper-level literature course (3 hours)  
Upper-level literature or language course (3 hours)  
Three upper-level writing courses (9 hours, includes ENG 3308, 3325, 3326, 3329, 3371, 4306, or 4323)

#### **Electives (18 hours)**

Lower-or upper-level electives (18 hours)  
Electives are an important part of the degree program and should be selected in consultation with an academic advisor.

### Minor in English (18 hours minimum)

#### **Required Courses (9 hours)**

Six hours, both halves of sophomore survey of Western World, American, or British Literature.  
Three hours in one of the genre courses (ENG 3311, 3312, or 3313).

#### **Upper-Level Electives (9 hours)**

Selected in consultation with an advisor from courses in Literature/Theory and/or Writing/English language.

#### **Portfolio**

### Minor in Professional Writing (18 hours minimum)

#### **Required Courses (12 hours)**

ENG 3302 Business and Technical Report Writing  
ENG 3304 Advanced Business and Technical Report Writing  
ENG 3330 Desktop Publishing  
ENG 4322 Editing, Rewriting and Copyreading

#### **Upper-Level Electives (6 hours)**

Selected in consultation with an advisor from courses in Writing/English language (see Major in English).

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## Department of Social Sciences

**Kathleen M. Haney**, PhD, Chair  
Room 1009-South, 713-221-8014

### Faculty

Professors: Christian, Fairbanks, Haney, McCaffrey  
Associate Professors: Alvarez, Chadha, Getz, Santos, Thacker-Kumar, Williams  
Assistant Professors: Allen, Anderson, Bailey, Behan, Case, Davis, Grebowicz, Lewis, Li, Linantud, Mobasher, Pavelich, Ryden, Walden, Webb  
Lecturers: MacGregor  
Emeriti: Wright

Academic Areas: anthropology, geography, history, philosophy, political science, psychology, sociology

### Mission and Objectives

The Department of Social Sciences is an interdisciplinary department. Faculty teach courses and conduct research in seven academic areas: anthropology, geography, history, philosophy, political science, psychology, and sociology. In addition to classes in these disciplines, we offer interdisciplinary classes in the social sciences. Currently, six degrees may be taken in our department: History (BA), Political Science (BS), Psychology (BS), Sociology (BS), and Social Sciences (BA or BS). A BA in Philosophy will be offered in 2004-2005, pending Coordinating Board approval. Please come visit us, or call and talk with us about your interests and plans.

The department's educational philosophy is holistic in emphasizing the importance of students' educational and professional growth both inside and outside of the classroom. Our degree programs prepare students in a number of ways: students are provided with job skills relevant to their career aspirations, a readiness for graduate or professional school, and a strong, broad-based background in the liberal arts which is important in the ever-changing social and economic environment.

Among the essential components of the department's mission are community-based research and public service, and these also constitute integral parts of the department's educational program. All of the department's degree programs are designed to develop skills in research and analysis. Students also are strongly encouraged to engage in internships (for credit), volunteer service activities, or other degree-related work experiences in which classroom theory can be applied to "real-life" problems.

The study and practice of the social sciences provide the means for students to unify their learning, since the social sciences, in attempting to understand human individuals and institutions, employ both the methodologies of the linguistically-oriented humanistic disciplines and the empirically-based natural sciences. Thus our unique contribution to the intellectual life of the university is to provide the arena in which all viewpoints can meet and exchange.

### Honor Societies

Pi Gamma Mu, International Social Sciences Honorary Society  
Psi Chi, National Honor Society in Psychology

## Programs of Study

### Bachelor of Arts (BA) with majors in:

History  
Philosophy (*pending Coordinating Board approval*)  
Social Sciences

### Bachelor of Science (BS) with majors in:

Political Science  
Psychology  
Social Sciences  
Sociology

## Bachelor of Arts

### Major in History

**James McCaffrey**, PhD, Coordinator  
Room 643-South, 713-221-8421

The program in history leading to a Bachelor of Arts degree may prepare a student for graduate school in history as well as other disciplines, including law, political science, economics, and anthropology. Some history students also seek elementary or secondary education certification.

### Degree Requirements

The Bachelor of Arts with a major in History requires a minimum of 122 hours. For degree completion, at least 25% of the semester credit hours must be earned through instruction offered by UH-Downtown. The last 30 of the total hours in the degree and 18 of the upper-level hours in the major must be successfully completed in residence at UH-Downtown. An overall minimum grade point average of 2.0 at UH-Downtown is required for graduation, and a minimum average of 2.0 must be maintained in the upper-level hours in the major.

### Common Core Requirements (42 hours)

See listing under Common Core Requirements on page 24 of this Catalog.

### Preparatory Requirements (23 hours)

These courses are preliminary requirements for the degree and are in addition to the core curriculum:

SOS 3312 Statistics in the Social Sciences  
PHIL 3301 Moral Issues, Personal and Professional or equivalent (to fulfill the general education requirement in ethics)  
Three hours in literature  
Three hours in anthropology, psychology or sociology.  
Three hours in the fine arts.  
Eight hours in a foreign language. If eight hours are not required due to advanced placement, see statement under Free Electives.

### Major Requirements (30 hours)

Non-US history:  
HIST 3315 World History to 1500 AD  
HIST 3316 World History since 1500 AD  
HIST 4310 Research and Writing Seminar  
Three hours chosen from this list:  
HIST 3301 Twentieth Century Europe  
HIST 3308 History of Mexico

HIST 3309 Twentieth Century England

HIST 3310 Twentieth Century Russia

HIST 3317 Middle Eastern History

Eighteen additional hours of courses in History at the 3000 or 4000 level

### Free Electives (27 hours)

From any department at any level, with the following restrictions: Developmental courses (ENG 1300, MATH 0300, MATH 1300 and READ 1300) may not apply to graduation requirements. No more than 25% of the hours presented for graduation may be credits in business. Electives are an important part of the degree program and should be selected in consultation with an academic advisor.

If a student is able to bypass foreign language classes because of placement, any hours not transcribed must be made up in elective credits in order to bring the total number of semester credit hours for the degree to no fewer than 120.

## Bachelor of Arts

### Major in Philosophy

*(pending Coordinating Board approval)*

**Kathleen Haney**, PhD, Coordinator

Room 625-South, 713-221-8077

Philosophical study is rigorous and leads to clear reading, thinking and writing. The college-educated generalist with good basic skills, but trained in ethical thinking is attractive to many employers. A philosophy major may make use of the degree in all the professional schools, especially Law. Students interested in acquiring a good general education as well as those interested in graduate school for careers teaching philosophy request this degree. The degree may also be used for the study of ethical and political issues or for the study of logic and its computer applications.

### Degree Requirements

The Bachelor of Arts with a major in Philosophy requires a minimum of 122 hours. For degree completion, at least 25% of the semester credit hours must be earned through instruction offered by UH-Downtown. The last 30 of the total hours in the degree and 18 of the upper-level hours in the major must be successfully completed in residence at UH-Downtown. A minimum grade point average of 2.0 at UH-Downtown is required for graduation, and a minimum average of 2.0 must be maintained in the upper-level hours in the major.

### Common Core Requirements (42 hours)

See listing under Common Core Requirements on page 24 of this Catalog.

### Supplemental Courses (26 hours)

Foreign Language in same language (8 hours). If a student is able to bypass foreign language classes because of placement, any hours not transcribed must be made up in elective credits

### Lower-level Philosophy (9 hours)

PHIL 1301 Introduction to Philosophy

PHIL 2301 Classical Philosophy

PHIL 2302 Modern Philosophy

PHIL 2310 The Meaning of Life *(pending Coordinating Board approval)*

### Lower-level field (9 hours)

Chosen by the student, at any level in any one discipline, with advisor's consent.

### Upper-level Required Courses (30 hours)

ENG 3302 or another upper-level writing course (ENG 3304, 3305, 3308, 3310); PHIL 3304 (Logic) or PHIL 4315 (Symbolic Logic); both HIST 3315 and HIST 3316, or choose two from HUM 3301, HUM 3302, HUM 3310.

### Upper-level Philosophy (18 hours). Choose from the following:

PHIL 3301 Moral Issues

PHIL 3302 Philosophy of Science

PHIL 3304 Logic

PHIL 3305 Contemporary Philosophy

PHIL 3317 Philosophy of Racism

PHIL 3319 Philosophy of Gender

PHIL 3320 Environmental Ethics

PHIL 3322 World Religions

PHIL 3323 Philosophy of Religion

PHIL 3328 Philosophy of Gardening *(pending Coordinating Board approval)*

PHIL 3340 Postmodern Theory

PHIL 4315 Symbolic Logic

PHIL 4321 Bio-Medical Ethics *(pending Coordinating Board approval)*

PHIL 4325 Philosophy of the Human Sciences *(pending Coordinating Board approval)*

PHIL 4412 Major Figures in Philosophy *(pending Coordinating Board approval)*

### Elective Courses (24 hours)

From any department at any level, with the following restrictions: Developmental courses (ENG 1300, MATH 0300, MATH 1300 and RDG 1300) may not apply to graduation requirements. No more than 25% of the hours presented for graduation may be credits in business. Electives are an important part of the degree program and should be selected in consultation with a faculty member.

## Bachelor of Science

### Major in Political Science

**Adolfo Santos**, PhD, Coordinator

Room 627-South, 713-221-8232

The program in political science leading to a Bachelor of Science degree is designed to prepare a student for graduate school in political science as well as other disciplines, including law, history, economics, and anthropology. It is also excellent grounding in the operations of governmental, political, and other complex organizations.

### Degree Requirements

The Bachelor of Science with a major in Political Science requires a minimum of 120 hours. For degree completion, at least 25% of the semester credit hours must be earned through instruction offered by UH-Downtown. The last 30 of the total hours in the degree and 18 of the upper-level hours in the major must be successfully completed in residence at UH-Downtown. A

minimum grade point average of 2.0 at UH-Downtown is required for graduation, and a minimum average of 2.0 must be maintained in the upper-level hours in the major.

### **Common Core Requirements (42 hours)**

See listing under Common Core Requirements on page 24 of this Catalog.

### **Preparatory Requirements (15 hours)**

These courses are preliminary requirements for the degree and are in addition to the core curriculum:

- SOS 2304 Research Methods in the Social Sciences
- SOS 3312 Statistics in the Social Sciences
- Geography or Economics (6 hours in any combination)
- Math or Natural Science

### **Upper Level Requirements (36 hours)**

- English 3302, 3308, or 3326
- Social Sciences 4301 or 4380
- 21 hours from 3000-4000 level Political Science courses
- 9 additional hours in Political Science or advisor approved courses

### **Electives (27 hours)**

From any department at any level, with the following restrictions: Developmental courses (ENG 1300, MATH 0300, MATH 1300 and READ 1300) may not apply to graduation requirements. No more than 25% of the hours presented for graduation may be credits in business. One of the courses must be in Ethics unless the requirement is filled elsewhere. An English course with "literature" in the title is recommended. Electives are an important part of the degree program and should be selected in consultation with an academic advisor.

## **Bachelor of Science**

### **Major in Psychology**

**Shawn Davis**, PhD, Coordinator  
Room 625B-South, 713-226-2763

The program in psychology leading to a Bachelor of Science degree may prepare a student for graduate school in psychology and other disciplines. It also serves as preparation for entry - level positions in the field of mental health and other types of employment, including social service agencies and business. The study of psychology also provides a foundation of knowledge for healthy coping with life circumstances and human relationships.

### **Degree Requirements**

The Bachelor of Science with a major in Psychology requires a minimum of 120 hours. For degree completion, at least 25% of the semester credit hours must be earned through instruction offered by UH-Downtown. The last 30 of the total hours in the degree and 18 of the upper-level hours in the major must be successfully completed in residence at UH-Downtown. An overall minimum grade point average of 2.0 at UH-Downtown is required for graduation, and a minimum average of 2.0 must be maintained in the upper-level hours in the major.

### **Common Core Requirements (42 hours)**

See listing under Common Core Requirements on page 24 of this Catalog. In fulfillment of the Behavioral Sciences requirement, PSY

1303 is recommended. If not taken in the core, PSY 1303 should be added to the following preparatory requirements.

### **Preparatory Requirements (21-24 hours)**

These courses are preliminary requirements for the degree and are in addition to the core curriculum, with the possible exception of one three-hour course in introductory behavioral science that may have been taken as part of the core:

- PSY 1303 Introduction to Psychology
- SOC 1303 Principles of Sociology
- ANTH 2301 Physical Anthropology
- or
- ANTH 2302 Cultural Anthropology
- SOS 2304 Research Methods in Social Sciences
- SOS 3312 Statistics in the Social Sciences
- Three hours in philosophy to fulfill the general education requirement in ethics, chosen from this list:
  - PHIL 1301 Introduction to Philosophy
  - PHIL 2301 Classical Philosophy
  - PHIL 2302 Modern Philosophy
  - PHIL 3301 Moral Issues, Personal and Professional
  - PHIL 3302 Philosophy of Science
  - PHIL 3305 Contemporary Philosophy
- Three hours in mathematics or science.
- Three hours in literature.

### **Major Requirements (27 hours)**

- Twenty-four hours of courses in Psychology at the 3000 or 4000 level.
- Three hours of internship or special project credit from either:
  - SOS 4301 Special Projects in the Social Sciences (similar to a senior honors thesis)
  - or
  - SOS 4380 Field Experience in the Social Sciences (Recommended)

### **Related Upper-Level Requirements (9 hours)**

These are upper-level courses in support of the degree. Courses in this category, together with courses chosen as free electives, may be used toward a minor, at the student's option:

#### **Advanced Writing (3 hours), one of the following courses:**

- ENG 3302 Business and Technical Report Writing
- ENG 3325 Medical Writing
- ENG 3326 Proposal Writing
- ENG 4306 Science Writing

#### **Social and Behavioral Science Electives (6 hours), two of the following courses:**

- Any upper-level course in Psychology
- Any upper-level course in Sociology
- MGT 3301 Management of Organizations
- MGT 3302 Human Resource Management
- MGT 3303 Negotiating Skills and Techniques
- MKT 3301 Principles of Marketing
- SOS 3301 Social Gerontology
- SOS 3304 Death and Dying
- SOS 4302 The Study of the Future

### **Free Electives (21 hours)**

From any department at any level, with the following restrictions: Developmental courses (ENG 1300, MATH 0300, MATH 1300 and READ 1300) may not apply to graduation requirements. No more than 25% of

the hours presented for graduation may be credits in business. Electives are an important part of the degree program and should be selected in consultation with an academic advisor. No degree program may have fewer than 120 semester credit hours.

## Bachelor of Science

### Major in Sociology

**J. Greg Getz**, PhD, Coordinator  
Room 639-South, 713-221-8939

The program in sociology leading to a Bachelor of Science degree may prepare a student for graduate school in sociology and other disciplines. It also serves as preparation for entry-level positions in social service agencies and business. The study of sociology provides a unique perspective for studying complex social problems including poverty, racial discrimination, crime, violent behavior, and drug use. Different courses focus on important institutions including the family, economy, government, and education.

#### Degree Requirements

The Bachelor of Science with a major in Sociology requires a minimum of 123 hours. For degree completion, at least 25% of the semester credit hours must be earned through instruction offered by UH-Downtown. The last 30 of the total hours in the degree and 18 of the upper-level hours in the major must be successfully completed in residence at UH-Downtown. A minimum grade point average of 2.0 at UH-Downtown is required for graduation, and a minimum average of 2.0 must be maintained in the upper-level hours in the major.

#### Common Core Requirements (42 hours)

See listing under Common Core Requirements on page 24 of this Catalog. In fulfillment of the Behavioral Sciences requirement, SOC 1303 is recommended. If not taken in the core, SOC 1303 should be added to the following supplemental requirements.

#### Supplemental Course Requirements (18-21 hours)

These courses are preliminary requirements for the degree and are in addition to the core curriculum, with the possible exception of one three-hour course in introductory behavioral science that may have been taken as part of the core:

PSY 1303 Introduction to Psychology  
SOC 1303 Principles of Sociology  
ANTH 2301 Physical Anthropology

or

ANTH 2302 Cultural Anthropology  
SOS 2304 Research Methods in the Social Sciences  
SOS 3312 Statistics in the Social Sciences

Three hours in philosophy to fulfill the general education requirement in ethics. PHIL 3302 (Philosophy of Science) is the preferred course. Another upper-level philosophy courses may be substituted at the discretion of the degree coordinator.

Three hours in mathematics, science, or computer science.

#### Additional Lower-Level Requirements (9 hours)

6 hours of lower level sociology courses  
3 hours of lower level sociology, psychology, or anthropology electives

#### Major Requirements (27 hours)

Twenty-one hours of courses in Sociology at the 3000 or 4000 level

Three hours of SOC 3301, Sociological Theory

Three hours of internship or special project credit from either:

SOS 4301 Special Projects in the Social Sciences (similar to a senior honors thesis)

or

SOS 4380 Field Experience in the Social Sciences (Recommended)

#### Related Upper-Level Requirements (9 hours)

These are upper-level courses in support of the degree. Courses in this category, together with courses chosen as free electives, may be used toward a minor, at the student's option:

##### Advanced Writing (3 hours), one of the following courses:

ENG 3302 Business and Technical Report Writing

ENG 3325 Medical Writing

ENG 3326 Proposal Writing

ENG 4306 Science Writing

##### Social and Behavioral Science Electives (6 hours), two of the following courses:

Any upper-level course in Sociology, Psychology, Political Science, History, Philosophy, English, Speech, Humanities, Social Sciences, or Criminal Justice

BA 3301 Legal Environment of Business

BA 3302 Commercial Law

BA 3304 International Business Law

BA 3315 Diversity and the Law

BIOL 4350 Social Biology

MGT 3301 Management of Organizations

MGT 3302 Human Resources Management

MGT 3303 Negotiating Skills and Techniques

MGT 3307 Equal Opportunity Management

MKT 3301 Marketing Principles

MKT 4305 Consumer Behavior

SOSE 3306 Culture of the Urban School

SOSE 3320 Assessment and Evaluation of Children

#### Free Electives (18 hours)

From any department at any level, with the following restrictions: Developmental courses (ENG 1300, MATH 0300, MATH 1300 and READ 1300) may not apply to graduation requirements. No more than 25% of the hours presented for graduation may be credits in business. Electives are an important part of the degree program and should be selected in consultation with an academic advisor. No degree program may have fewer than 120 semester credit hours.

## Interdisciplinary Degrees

The Bachelor of Arts and Bachelor of Science degrees with majors in Social Sciences (described in the following sections) are interdisciplinary degrees meant to prepare the graduate with a general foundation across the social sciences, and the experience of deeper inquiry in at least two areas of study in the social sciences. For purposes of these degrees, the social sciences include history political science, psychology and sociology. Because this is an interdisciplinary degree, no more than 18 hours of upper-level work in a single discipline may be applied to the major, and no more than 27 total hours in a single discipline (excluding course work required to fulfill Common Core Requirements) may be used to satisfy degree requirements.

## Degree Requirements

The Bachelor of Arts with major in Social Sciences requires a minimum of 122 hours, including a foreign language requirement. The Bachelor of Science with major in Social Sciences requires a minimum of 123 hours. For degree completion, at least 25% of the semester credit hours must be earned through instruction offered by UH-Downtown. For both degrees, the last 30 of the total hours and 18 of the upper-level hours toward the degree must be successfully completed in residence at UH-Downtown. An overall minimum grade point average of 2.0 at UH-Downtown is required for graduation, and a minimum grade point average of 2.0 must be maintained in the upper-level hours in the major. A description of these interdisciplinary degrees follows.

## Bachelor of Arts

### Major in Social Sciences

**Kathleen Haney**, PhD, Coordinator  
Room 625A-South, 713-221-8014

#### Common Core Requirements (42 hours)

See listing under Common Core Requirements on page 24 of this Catalog. In fulfillment of the Behavioral Sciences requirement, PSY 1303 Introduction to Psychology is recommended. If not taken in the core, PSY 1303 should be added to the following additional basic requirements.

#### Additional Basic Requirements (29-32 hours)

SOS 2304 Research Methods in the Social Sciences  
SOS 3312 Statistics in the Social Sciences  
ANTH 2301 Physical Anthropology  
or  
ANTH 2302 Cultural Anthropology  
SOC 1303 Principles of Sociology  
PSY 1303 Introduction to Psychology (may be omitted here if taken as part of core curriculum)

#### Literature (3 hours)

Foreign language (14 hours, that is, completion through sophomore year. For students placing out of any foreign language courses, other courses in English, humanities or social sciences may be substituted)

#### Upper-Level Requirements (36 hours)

Twenty-one upper-level hours in social sciences from the following disciplines:

History  
Political Science  
Psychology  
Sociology

At least nine hours must be taken in each of two separate disciplines. No more than 18 upper-level hours in a single discipline may be applied to the major. Courses in other social science disciplines or interdisciplinary courses may be applied to this requirement. Consult a college advisor.

#### Upper-Level courses in social sciences or related disciplines (6 hours)

PHIL 3301 Moral Issues or another course to fulfill the ethics requirement  
ENG 3302 Business and Technical Report Writing or another upper-level writing course

SOS 4380 Field Experience in the Social Sciences (recommended)  
or  
SOS 4301 Special Projects in the Social Sciences

#### Electives (15 hours)

From any department at any level, with the following restrictions: Developmental courses (ENG 1300, MATH 0300, MATH 1300 and RDG 1300) may not apply to graduation requirements. No more than 25% of the hours presented for graduation may be credits in business. Electives are an important part of the degree program and should be selected in consultation with an academic advisor.

## Bachelor of Science

### Major in Social Sciences

**Kathleen Haney**, PhD, Coordinator  
Room 625A-South, 713-221-8014

#### Common Core Requirements (42 hours)

See listing under Common Core Requirements on page 24 of this Catalog. In fulfillment of the Behavioral Sciences requirement, PSY 1303 Introduction to Psychology is recommended. If not taken in the core, PSY 1303 should be added to the following additional basic requirements.

#### Additional Basic Requirements (18 hours)

SOS 2304 Research Methods in the Social Sciences  
SOS 3312 Statistics in the Social Sciences  
ANTH 2301 Physical Anthropology  
or  
ANTH 2302 Cultural Anthropology  
SOC 1303 Principles of Sociology  
Literature  
Mathematics or Natural Sciences

#### Upper-Level Requirements (36 hours)

Twenty-one upper-level hours in social sciences from the following disciplines:

History  
Political Science  
Psychology  
Sociology

At least nine hours must be taken in each of two separate disciplines. No more than 18 upper-level hours in a single discipline may be applied to the major. Courses in other social science disciplines or interdisciplinary courses may be applied to this requirement. Consult a college advisor.

#### Upper-level courses in social sciences or related disciplines (6 hours)

#### Additional Upper-level requirements (9 hours):

PHIL 3301 Moral Issues or another course to fulfill the ethics requirement  
ENG 3302 Business and Technical Report Writing or another upper-level writing course  
SOS 4380 Special Projects in the Social Sciences (recommended)  
or  
SOS 4301 Field Experience in the Social Sciences

### **Electives (27 hours)**

From any department at any level, with the following restrictions: Developmental courses (ENG 1300, MATH 0300, MATH 1300 and RDG 1300) may not apply to graduation requirements. No more than 25% of the hours presented for graduation may be credits in business. Electives are an important part of the degree program and should be selected in consultation with an academic advisor.

## **Minor Programs Requirements**

### **Minor in History (18 hours minimum)**

Six hours of US History courses from the common core  
Twelve additional hours of 3000/4000-level History courses

### **Minor in International Politics (18 hours minimum)**

POLS 2303 United States Government I  
POLS 2304 United States Government II  
POLS 3308 Introduction to World Politics

Nine hours from among the following courses:

POLS 4305 War in the Modern World  
POLS 4308 East and Southeast Asian Politics  
POLS 4309 Dictatorship and Democracy in the Developing World  
POLS 4310 International Terrorism  
POLS 4312 Dictatorship and Democracy in Europe and the US  
POLS 4314 US Foreign Policy since WWII  
POLS 4316 Politics of the Middle East  
POLS 4318 International Political Economy

### **Minor in International Relations (18 hours)**

POLS 2303: United States Government I  
POLS 2304: United States Government II

Choose four of the following courses:

POLS 4302: Comparative Politics  
POLS 4303: International Politics  
POLS 4305: War in the Modern World  
POLS 4308: East and Southeast Asian Politics  
POLS 4309: Dictatorship and Democracy in the Developing World  
POLS 4310: International Terrorism

### **Minor in Philosophy (15 hours minimum)**

Six hours of 1000/2000-level Philosophy courses  
Nine hours from among the following courses:

PHIL: any 3000/4000-level course  
HUM 3301 Foundations of Western Culture I  
HUM 3302 Foundations of Western Culture II

At least six of the 15 hours must be taken at UH-Downtown.

### **Minor in Political Science (18 hours minimum)**

POLS 2303 United States Government I  
POLS 2304 United States Government II  
Twelve additional hours of 3000/4000-level Political Sciences courses

### **Minor in Psychology (18 hours minimum)**

PSY 1303 Introduction to Psychology  
15 additional hours, including nine hours of 3000/4000-level courses, from among the following:  
PSY any course  
SOS 2308 Human Sexuality  
SOS 3301 Social Gerontology  
SOS 3304 Death and Dying

SOS 3320 Assessment and Evaluation of Adolescents and Children

### **Minor in Quantitative Methods in Research (18 hours)**

Group A: Lower Level Preparatory requirements (6 hours)

SOS 2304 Research Methods in the Social Sciences  
MATH 1305 Finite Mathematics with Applications

Group B: Upper-Level Course work (9 hours)

MATH 3310 Statistical Analyses and Applications II

Select two of the following:

MATH 4306 Mathematical Models and Computer Simulation  
MATH 4307 Time Series  
MATH 4309 Design and Analysis of Experiments  
MATH 4310 Applied Regression  
PSY 4308 Psychological Assessment

Group C: Select one of the following (3 hours)

PHIL 2303 Logic  
PHIL 4315 Symbolic Logic  
PHIL 3302 Philosophy of Science

SOS majors seeking this minor will need the following courses as part of their regular degree:

MATH 1301 serves as a prerequisite for most of the courses in this minor.

SOS 3312 or MATH 3309 may serve as prerequisites for MATH 3310.

SOS 3312 Statistics in the Social Sciences (this cannot count toward minor because it is a required upper level course)

### **Minor in Sociology (18 hours minimum)**

SOC 1303 Principles of Sociology  
15 additional hours, including nine hours of 3000/4000-level courses, from among the following:

SOC any course  
SOS 2308 Human Sexuality  
SOS 3301 Social Gerontology

## **Pre-Law Studies**

**Michael James**, Advisor  
Room 1027-South, 713-221-8232

Students interested in pre-law studies, regardless of their major, may contact Dr. James. Catalogs of many law schools also are available for review through the pre-law advisor.

## **Military Science**

(Cooperative Program with University of Houston)

To register for courses, inquire in the Department of Social Sciences, 713-221-8014. For all other purposes, contact the Military Science program at UH, 713-743-3875

Lt. Col. Michael R. Czaja, Chair

### **Faculty**

Professors: Czaja  
Assistant Professors: Avery, Gass, Reyna, Caston, Whitfield

The goal of the US Army ROTC program is to develop technically competent, physically fit and highly motivated men and women for positions of responsibility as commissioned officers in the active Army, the Army Reserve and National Guard. Upon completion of the curricu-

lum, students will have an understanding of the fundamental concepts and principles of the military as an art and as a science. The leadership and managerial experience gained through ROTC provides great benefit for students in both their civilian endeavors and their military careers.

#### **Statutory Authority**

General statutory authority for establishment and operation of the ROTC program, including the scholarship program, is contained in Title 10, United States Code, Chapter 103 (Sec. 21022111). Specific rules and procedures are found in US Army Regulation 145-1.

#### **Course Credit**

ROTC classes may be taken for elective credit toward any degree plan at the University of Houston-Downtown. Freshman and sophomore level classes are open to all students, regardless of age or physical condition. No military obligation is incurred as a result of enrollment in these courses. Junior and senior level courses are more restrictive and do require a military obligation. ROTC scholarship students also incur a military obligation.

#### **Four-Year Program**

The four-year program is divided into two courses: the basic course, which is normally attended by students during their freshman and sophomore years, and the advanced course, attended during the junior and senior years. Advanced course students attend a six-week advanced camp at Fort Lewis, Washington, normally between their junior and senior years.

#### **Basic Course**

The basic course consists of four semesters of military science which includes: MSCI 1210, 1220, 2210 and 2220. These freshman and sophomore level classes are open to all students without obligation.

#### **Advanced Course**

Students entering the advanced course must enter into a contract to pursue and accept a commission in the active Army, the Army Reserve or the National Guard. To be considered for contracting into the advanced course, the student must be a full-time student in a course of instruction that leads to a degree in a recognized academic field, have a minimum of two years of academic work remaining in a curriculum leading to a baccalaureate or advanced degree, be under age 30 when commissioned, and pass a physical examination.

#### **Two-Year Program**

The two-year program is designed for students who did not take the basic course but are otherwise eligible to enroll in the advanced course. This program allows students completing their sophomore year to attend a five-week "basic camp" during June and July at Fort Knox, Kentucky, in lieu of taking the first two years of ROTC. There is no military obligation for attending Basic Camp. The Army provides transportation, room, and board. Students are paid approximately \$700 for the five-week period.

#### **Laboratory Requirements**

A military science laboratory is required for students enrolling in MSCI 1210, 1220, 2210, 2220, 3310, 3320, 4310 and 4320. This laboratory provides opportunities for marksmanship training, rappelling, drill and ceremonies, communications training, and other activities.

#### **Veterans**

Veterans who have served on active duty or in the Army Reserve or National Guard are also eligible for the ROTC program. Although veterans are not required to take the Basic Course, they are encouraged to do so. All students, including veterans, must have a minimum of 60 credit hours prior to enrolling in the Advanced Course.

#### **National Guard and Army Reserve Members**

Students enrolled in ROTC may also be a member of the Army Reserve or National Guard. Through the Simultaneous Membership Program (SMP), those students enrolled in the Advanced Course will be assigned in a leadership position as a cadet and receive pay and entitlements from the Guard or Reserve in the pay grade of Sergeant (E-5).

#### **Scholarships**

The United States Army offers, on a competitive nationwide basis, four-, three-, and two-year scholarships. The scholarships will cover up to \$16,000 of tuition. Recipients will also receive benefits for educational fees (to include lab fees), a book allowance and a subsistence allowance of \$200 per month. Applicants must be US citizens and must be under age 27 on the anticipated graduation date. Applications are available from the military science department. Veteran applicants can extend the age limit up to a maximum of three years, based on prior active duty service.

#### **Other Financial Aid**

All students enrolled in the Advanced Course will receive a subsistence allowance of \$200 per month. For more information contact the Military Science Department at the University of Houston (713-743-3875). GI Bill recipients still retain benefits.

#### **Tuition**

Members of the Army or the National Guard, Texas State Guard, or other reserve forces may be exempted from the nonresident tuition fee and other fees and charges.

#### **Special Training**

Basic and advanced course students may volunteer for and attend the US Army Airborne and Air Assault courses during June, July and August. Cadet Troop Leadership training positions are also available to Advanced Course cadets during the summer months.

#### **Miscellaneous**

Cadets in the Advanced Course are paid an allowance of \$200 per month during the school year. Military textbooks and uniforms are furnished to all cadets.

The Corps of Cadets sponsors an annual military ball in addition to other social events throughout the school year. The Department of Military Science at the University of Houston sponsors extracurricular activities such as the University of Houston Color Guard and the Ranger Challenge Team.

### COLLEGE OF PUBLIC SERVICE

**Beth Pelz**, PhD, Dean

**Anjoo Sikka**, PhD, Associate Dean

Suite 400, 101 Commerce Street, 713-221-8194

The College of Public Service is a community based center for higher learning dedicated to preparing students to enter professional careers in criminal justice and education. It believes that an educated society creates thoughtful policy and humanistic practices for the betterment of its diverse constituents. The College seeks to instill critical thinking skills that nurture in students an appreciation of the use of scientific inquiry to solve the problems of our time and encourages creativity and the development of new ideas. It embraces the professional and personal growth of its faculty, staff and students by promoting intellectual collaboration within the school, university and community at large. The College of Public Service strives to engage in dynamic research that will improve the quality of our area schools and justice institutions, and instill scholarship, integrity and responsibility in tomorrow's leaders.

#### Programs of Study

##### Degree Programs

Bachelor of Arts with major in Interdisciplinary Studies (Elementary and Middle School Education)

Bachelor of Science with major in Criminal Justice

Post-baccalaureate Teacher Certification

Master of Arts in Teaching

Master of Science with major in Criminal Justice

Master of Security Management

##### Special note: Teacher Education Program

The University of Houston-Downtown's teacher education program offers certification in elementary, secondary, and bilingual education.

Students wishing to obtain EC-4, Bilingual (EC-4 or 48), and 4-8 certification will need to take courses in a variety of academic areas. Secondary certification majors may choose from the following subject areas: Mathematics, English-Language Arts, History, Social Studies, Life Science, Physical Science, Composite Science. Additional content areas (of certification) for post-baccalaureate students are also available. For formal admission to the teacher education program, students should have:

- completed at least 32 hours toward their degree, or achieved post baccalaureate standing;
- obtained passing scores on all three sections of the THEA; and
- an overall 2.5 grade point average (for undergraduate majors and for post-baccalaureate students).

Teacher education students are not permitted to self-advise or telephone register for BED, EED, or SED courses. These sections are closed to non-teacher education students. Students interested in the teacher education program should contact the College Advising Office at 713-221-8906 or visit Room 420 (Commerce Street Building).

#### Undergraduate Programs

##### General Education Requirements

All students seeking a bachelor's degree at the University of Houston-

Downtown must complete the general education requirements (see pages 24), including the common core courses, application courses, enhancement courses and the Writing Proficiency Examination. Fulfillment of general education requirements may vary depending on the degree.

##### Being Accepted as a Degree Major

All undergraduate students at UH-Downtown are assigned for academic advising to University College until they are accepted into one of the degree programs. Before applying for acceptance to programs in the College of Public Service, a student must:

- Have fulfilled all THEA obligations;
- Have completed all required developmental courses;
- Complete a minimum of 30 hours toward the general education requirements;
- Be in good academic standing; and
- Be released by University College.

After these requirements are met, University College will refer the student to the College of Public Service.

##### Requirements for Majors

All undergraduate degree programs in the College of Public Service require a minimum of 30 semester credit hours in residence in the last semester(s) of the student's course of study and a minimum of 18 upper-level semester credit hours earned at this university. The College reserves the right to limit the number of directed study, internship, service learning, experience learning, and credit-by-examination credit hours that can be applied to degree requirements, especially major requirements.

##### Minors

The College of Public Service offers undergraduate minors in the following areas:

- Criminal Justice
- Ethnic Studies (cross-disciplinary)
- Gender Studies (cross-disciplinary)

Students seeking minors in these areas must meet the following requirements:

- The grade point average for all courses taken at UH-Downtown and applied to the minor must be at least 2.0.
- Transfer courses applied to the minor may be restricted by the individual program.
- Courses applied toward a minor must include a minimum of six hours of upper-level course work taken at UH-Downtown.
- Upper-level courses applied toward the major may not also be counted toward the fulfillment of minor requirements.

Requirements for each minor are listed with the curricula of the departments offering the minor. The requirements for the minors in Ethnic

Studies and Gender Studies are available at the office of the College Humanities & Social Sciences

#### Graduate programs

Admission to graduate programs is competitive and decisions for admission are made by departmental committees. For information on graduate programs, please refer to graduate section of this catalog.

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## Department of Criminal Justice

**Beth McConnell**, PhD, Chair

Suite 340, 101 Commerce Street, 713-221-8943

### Faculty

Professors:	McShane, Williams
Associate Professors:	Belbot, Engram, McConnell, Pelz, Snell, Wang
Assistant Professors:	Guarrero, Hsieh, Jakovich, Kellar, Snell, Walsh
Lecturers:	Hill, Karson

### Programs of Study

Bachelor of Science in Criminal Justice

Master of Science in Criminal Justice

Master of Security Management

### Mission and Objectives

The mission of the Department of Criminal Justice is to develop and sustain a Criminal Justice program that reflects a cooperative relationship between the University of Houston-Downtown and the community. The department is committed to providing quality academic preparation that is designed to extend the knowledge and intellectual maturity of its students. In addition, we strive to influence the quality and nature of research in the field and to serve the community by influencing the development of programming and public policy in the area of criminal justice. The educational philosophy of the department emphasizes an integration of intellectual growth and skill development in the preparation of our majors. The Criminal Justice program is designed to combine the applied aspects of the field with the theoretical components necessary for the development of sound, testable programming and public policy. This includes demonstrated competency in criminological, methodological and administrative theory as well as analytical and technical skills. Students are expected to analyze, question, reconsider and synthesize old and new knowledge and skills. We believe our responsibility to our students extends beyond course work to include providing research, internship, mentoring and networking opportunities that will enable them to better succeed in their pursuit of careers in the field of Criminal Justice. Sustained interaction with the professional community and representative of the community at large assists us in achieving this goal.

### Honor Society

Alpha Phi Sigma - National Criminal Justice Honorary

### Social Association

Criminal Justice Student Association

## Bachelor of Science

### Major in Criminal Justice

**Hsiao-Ming Wang**, PhD, Coordinator, 713-221- 8943

Course work leading to this bachelor's degree provides the student with strong communication and analytical skills. This is accomplished (1) through a comprehensive and extensive set of general education requirements; (2) through a critical and in-depth interdisciplinary analysis of the causes of crime, the definition and measurement of crime

and society's formal and informal efforts at preventing and controlling crime; and (3) by treatment of the field of criminal justice as an applied science where the student is taught to integrate theory construction, empirical validation and practical application.

### Degree Requirements

The criminal justice major requires a minimum of 123 hours. At least 25% of the semester credit hours must be earned through instruction offered by UH-Downtown. Twenty-four hours of criminal justice must be at the upper level, and 24 hours must be completed as course work at UH-Downtown. The last 30 of the total hours and 18 of the upper-level hours toward the degree must be successfully completed in residence at UH-Downtown. The degree requires a minimum of 36 upper-level hours. An overall minimum grade point average of 2.0 at UH-Downtown is required for graduation, and a minimum average of 2.0 must be maintained in the upper-level hours in the major.

### Common Core Requirements (42 hours)

See listing under Common Core Requirements on page 24 of this Catalog.

### General Education Requirements (9-12 hours)

Specific General Education Application and Enhancement Requirements for the Criminal Justice degree are:

#### Writing Skills (3 hours)

ENG 3302 Business and Technical Report Writing  
or  
ENG 3308 Legal Writing

#### Nonverbal Analytical Skills (3 hours)

CJ 3320 Statistics in Criminal Justice

#### Ethics and Morality (3 hours)

CJ 3311 Ethics of Social Control  
or  
PHIL 3301 Moral Issues, Personal and Professional

#### World Community (3 hours)

One course that addresses topics beyond American society. Consult a degree advisor for specific courses that complement this degree. Courses commonly used to fulfill this requirement in the College of Public Service include courses in geography, foreign languages and literature, and history, political science and humanities courses that focus on other cultures. This requirement may be fulfilled through elective hours or in some other course applied within the degree including CJ 4313.

### Criminal Justice Core (18 hours)

CJ 1301 Crime, Law and Society  
CJ 2301 The Police System  
CJ 2302 The Criminal Court System  
CJ 2303 The Correctional System  
CJ 3300 Research Methods in Criminal Justice  
CJ 3301 Criminology

### Criminal Justice Electives (27 hours)

Chosen from among criminal justice courses not applied to the criminal justice core. At least 24 hours must be at the upper level.

### **Supplemental Concentration (12 hours) or Minor (15-18 hours)**

Students must select 12 hours of non-criminal justice course work of which nine hours must be 3000-4000 level courses that will supplement their chosen area of specialization within criminal justice. The courses must be approved by a faculty advisor. To declare a minor, students should contact an advisor in the College of Public Service and complete the appropriate forms.

### **Electives (9-15 hours)**

From any department at any level, with the following restrictions: Developmental courses (ENG 1300, MATH 0300, MATH 1300 and RDG 1300), or their equivalent, may not apply to graduation requirements. No more than 25% of the hours presented for graduation may be credits in business. Electives are an important part of the degree program and should be selected in consultation with an academic advisor. (If the world community requirement is fulfilled by any course that meets another degree requirement, the total of elective hours is 9-15.)

### **Minor in Criminal Justice (21 hours minimum)**

CJ 1301 Crime, Law and Society

CJ 2301 The Police System

CJ 2302 The Criminal Court System

CJ 2303 The Correctional System

CJ 3300 Research Methods in Criminal Justice

CJ 3301 Criminology

3 hours of upper-level criminal justice courses

### **Academy Credit**

Students who complete the UHD Texas Commission on Law Enforcement Officer Standards and Education (TCLEOSE) Basic Peace Officer's Academy and pass the licensing exam can apply for advanced placement for CJ 2301 (Police Systems) and CJ 2302 (Criminal Courts) by paying an administrative fee of \$15. Students must be enrolled at UHD in order to receive credit and may not receive credit for classes in which they are currently enrolled or for which they have already received credit. No other criminal justice classes may be substituted. No grade is awarded for credit obtained in this matter. No other academy credit will be accepted.

## **Master of Science**

### **Major in Criminal Justice**

(See Graduate Academic Programs section of this catalog)

### **Master of Security Management**

(See Graduate Academic Programs section of this catalog)

## **Training Division**

**Rex White** , Director, 713-221-8690

The University of Houston-Downtown has one of the largest criminal justice training centers in Texas. The mission of the Training Division is to provide quality adult education to people desiring to enter public and private sector criminal justice professions and continuing education to criminal justice practitioners. In addition, students, faculty and staff of the division donate thousands of hours annually to activities leading to the improvement of the criminal justice professions and the community at large. The division has conducted more than 100 police academy classes, trained more than 15,000 students for the criminal justice pro-

fessions, and won regional and national awards for excellence. Its location near the Harris County courthouse and criminal justice complex makes it an ideal training site.

### **Law Enforcement Training Program**

Entry-level training for prospective police officers is provided by the division's Police Academy. The academy is certified by the Texas Commission on Law Enforcement Officer Standards and Education (TCLEOSE) and is approved for veterans' benefits through the Texas Education Agency. Approximately 40-50 specialized and advanced courses are offered annually for police officers and other public sector practitioners. Basic and advanced management training courses ranging from one to 14 weeks in length are provided through the Police Management Institute.

### **Specialized Certification Courses and Seminars**

Specialized training and certification opportunities are provided through unique seminars and courses. In cooperation with the International Foundation for Protection Officers, the division cosponsors the Certified Protection Officer Program. In cooperation with the Houston Police Department and the Houston Chapter of the American Society for Industrial Security, the division co-hosts an annual Joint Professional Development Conference. Certification courses are available in such diverse areas as arson investigation, investigative hypnosis, emergency medical care and technician training, and management.

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## **Department of Urban Education**

**Myrna Cohen**, EdD, Chair

Suite 440, 101 Commerce Street, 713-221-8943

### **Faculty**

Associate Professors: Bhattacharjee, Chen, Cmajdalka, Cohen, Garcia, Hood, R. Johnson, Mullinnix, Nath, Sikka, Thielemann

Assistant Professors: Bedard, Dutcher, Godine, Kortz, Mahoney, McIntosh, Pedrana, Van Horn, Villarreal

Instructor: Paige

Academic Areas: Bilingual Education, Curriculum and Instruction, Elementary Education, Secondary Education

## **Programs of Study**

### **Undergraduate/Post-baccalaureate**

Bachelor of Arts in Interdisciplinary Studies

Post-baccalaureate Teacher Certification

### **Certification Areas**

Early Childhood–Fourth Grade Elementary Generalist

Early Childhood–Fourth Grade Bilingual Generalist

Fourth–Eighth Grade Elementary Generalist

Fourth–Eighth Grade Bilingual Generalist (check with the Department of Urban Education for availability of program)

Fourth–Eighth Grade Language Arts/Social Studies Specialist (check with Department of Urban Education for availability of program)

Secondary (grades 8-12) (undergraduate degrees to be obtained in content-area department)

## Graduate

Master of Arts in Teaching: Elementary Education (with certification)  
Master of Arts in Teaching: Bilingual Education (with certification)  
Master of Arts in Teaching: Secondary Education (with certification)  
Master of Arts in Teaching: Curriculum & Instruction (for certified teachers only)

## Mission and Objectives

The Urban Education Department offers preparation for both undergraduate and post-baccalaureate students seeking elementary, bilingual, or secondary certification. Professional Development and field-based courses in this department are taught as interdisciplinary blocks (9 hours each) and are field-based in selected public schools within several Houston metropolitan area districts. Field-based blocks of courses require 60 or more clock hours of internship (per semester) in these schools on weekdays between 7:00 AM and 3:30 PM.

Building upon an understanding of cultural, economic, and linguistic diversity developed through the program's general education requirements and its Urban Education Core, the Interdisciplinary Blocks will provide opportunities for future teachers to:

- observe and interact with master teachers and divergent learners within the school setting
- interact with children of diverse backgrounds and experiences to create an understanding of themselves, their own culture, and the cultures of others
- develop a community of learners which acknowledges the similarities of diverse members and appreciates differences
- plan and implement effective strategies which ensure academic success for all learners
- use technology in effective ways to enhance student achievement.

To promote and ensure student success, the curriculum is designed based on (a) state certification standards; (b) Texas Essential Knowledge and Skills, and (c) state teacher education proficiencies. It is expected that at the end of the teacher education program, the new teacher will have internalized the state identified proficiencies for teacher education and will successfully pass the state certification examination.

## Post-baccalaureate Teacher Certification

In addition to the undergraduate route, there are three other possible routes to secondary teacher certification.

- Deficiency Plan
- Alternative Certification Program (ACP)
- MAT with certification

Teacher certification is available in EC-4 (generalist), EC-4 (bilingual), 4-8 (generalist), 4-8 (bilingual generalist), and, secondary education.

A deficiency plan sponsored by the University of Houston-Downtown requires a minimum of 27 semester credit hours to be taken after the date of the student's bachelor's degree. All courses taken in fulfillment of the deficiency plan are to be taken at UHD unless the student has written permission in the form of a waiver from the Office of the Dean of Public Service. Students enrolled in the Sugar Land

Multi-Institutional Teaching Center may consider courses taken at the UHS at Fort Bend sites as "at UHD."

To be accepted into the EC-4 (pre-K/elementary) or 4-8 (middle school) ACP track, students must pass their content area TExES examination. To be accepted into the 8-12 (secondary) Alternative Certification Program (ACP) track, students have the option of either completing 24 hours in their area of certification or passing their relevant TExES examination. ACP requires a minimum of 12 hours of coursework that must be taken prior to recommendation for the probationary certificate and one-year internship. Following the completion of a 3-credit-hour course and a one-year internship (as teacher-of-record) is required before students are recommended for full certification.

Students interested in obtaining an MAT with certification should refer to the graduate section of this catalog.

## Please note:

As state guidelines change, continual program revisions may occur. Teacher education programs are developed in response to SBEC regulations and guidelines. Thus, course requirements and sequencing are subject to change. All students pursuing teacher certification plans must understand that programs are in transition. Although the advising staff will make every effort to communicate program changes as they occur, it is the responsibility of each student to stay apprised of any changes that may affect degree plans. Thus constant monitoring of plans is necessary and students are urged to visit regularly with an academic advisor.

## Honor Society

Kappa Delta Pi

## Student Organization

Association of Urban Educators

## Requirements for All Undergraduate Degrees

The degree programs in Urban Education require a minimum of 122–126 semester credit hours (SCH). For degree completion, at least the last 30 SCH, representing the professional development and field-based courses, must be earned through instruction offered by the University of Houston-Downtown. Formal admission to Teacher Education requires the following:

- Formal application to the program
- 2.5 overall grade point average
- 30 SCH of course work
- Successful completion of THEA

The University Core and foreign language instruction must be chosen as part of these degrees. Graduation requires successful completion of all course work including three interdisciplinary blocks of courses, and passage of block exams. In addition, certification requires acceptable scores on state-mandated certification examinations.

## Bachelor of Arts

### Major in Interdisciplinary Studies

Students seeking a Bachelor of Arts with a major in Interdisciplinary Studies will select from among five certification programs:

- Early Childhood–Fourth Grade Elementary Generalist
- Early Childhood–Fourth Grade Bilingual Generalist
- Fourth–Eighth Grade Elementary Generalist
- Fourth–Eighth Grade Bilingual Generalist

- Fourth-Eighth Grade Language Arts/Social Studies Specialist (check with Department of Urban Education for availability of programs)

## Early Childhood–Fourth Grade Elementary Generalist (125 SCH)

### Common Core Requirements

See listing under Common Core Requirements in this Catalog.

### Preparatory Requirements and Non-Field-Based Courses for the Educational Component (Interdisciplinary Blocks I, II, and III)

These courses are requirements for the degree and are in addition to the core curriculum. These courses fulfill the Preparatory Requirements and include other courses that are not field-based for students in the Early Childhood–Fourth Grade Elementary Generalist certification program.

ECH 2311 Early Childhood Classroom  
 ECH 2212 The Young Child  
 ECH 2313 Early Childhood Learning Environment  
 READ 3305 Foundations of Literacy  
 READ 3306 Language and Literacy Development  
 MATH 3321 Math Concepts I (Prerequisites: MATH 1301 or MATH 1310, admission to Teacher Education)  
 MATH 3322 Math Concepts II (Prerequisites: MATH 1301 or MATH 1310, admission to Teacher Education)  
 SOSE 3306 Culture of Urban Schools  
 SOSE 3320 Assessment and Evaluation of Children  
 ETC 3301 Educational Technology (Prerequisites: CS 1305 or CIS 1301, or demonstrated competencies)

### Academic Major and Non-Field-Based Courses

These courses are preliminary requirements for the degree and are in addition to the core curriculum. These courses fulfill the Academic Major Requirements and include other courses that are not field-based for students in the Early Childhood–Fourth Grade Elementary Generalist certification program.

READ 3307 Language Arts Instruction (Prerequisite: READ 3305, admission to Teacher Education)  
 NS 3310 Physical Science Studies (Prerequisite: admission to Teacher Education)  
 NS 3312 Life Science Studies (Prerequisite: admission to Teacher Education)  
 Social/Behavioral Sciences (any of the following)  
 ECO 1301  
 GEOG 1302  
 HIST 2303 (Prerequisite: Enrollment in or completion of ENG 1301)  
 HIST 2309 (Prerequisite: Enrollment in or completion of ENG 1301)  
 POLS 3309 (Prerequisite: POLS 2303, POLS 2304 and junior standing)  
 SOC 3304 (Prerequisite: SOC 1303 and junior standing)  
 Spanish  
 SPAN 1401, 1402, or CLEP Test (0-8 SCH depending upon placement)  
 English (either of the following)  
 ENG 3305 (Prerequisite: 3 hours of literature)  
 ENG 3318 (Prerequisite: 3 hours of literature)  
 PED 3304 Aesthetic and Physical Development of Children

### Education Component

The Professional Development courses require concurrent enrollment

in specific field-based blocks of courses. Fifteen clock-hours per week are required for Blocks I and II. Block III represents a full semester, full-day student teaching experience. In order to successfully complete each block, students must demonstrate mastery of the content by passing a comprehensive Block Exam at the end of Blocks I and II. Admission to these blocks is approved by the advisor/coordinator of the Urban Education Department.

### Block I

(Prerequisites: admission to Teacher Education, ECH 2311, ECH 2312, ECH 2313, READ 3305, READ 3306, MATH 3321, and MATH 3322. Additional prerequisite and/or concurrent enrollment: SOSE 3306, ETC 3301)

EED 3301 Understanding the Learner in the Elementary Classroom  
 EED 3312 Effective Teaching Strategies in Mathematics Education  
 READ 3303 Literacy Curriculum, Methods, and Assessment EC-2

### Block II

(Prerequisites: Block I, Passing Score on Block I Exam)

EED 3311 Teaching Social Studies in the Elementary Classroom  
 EED 3315 Effective Teaching Strategies in Science Education  
 READ 4303 Literacy Curriculum, Methods, and Assessment 2-4

### Block III

(Prerequisites: Block II, Passing Score on Block II Exam)

EED 4301 Student Teaching in the Elementary Classroom  
 EED 4304 Student Teaching in the Early Childhood Classroom  
 SOSE 4303 Current Issues in Urban Teaching

**Total: 125 SCH**

## Early Childhood–Fourth Grade Bilingual Generalist (126 SCH)

### Common Core Requirements

See listing under Common Core Requirements in this Catalog.

### Preparatory Requirements and Non-Field-based Courses for the Educational Component (Interdisciplinary Blocks I, II, and III)

These courses are preliminary requirements for the degree and are in addition to the core curriculum. These courses fulfill the Preparatory Requirements and include other courses that are not field-based for students in the Early Childhood–Fourth Grade Bilingual Generalist certification program.

ECH 2311 Early Childhood Classroom  
 ECH 2312 The Young Child  
 ECH 2313 The Early Childhood Learning Environment  
 BED 3311 Foundations of Bilingual Education  
 READ 3305 Foundations of Literacy  
 SOSE 3306 Culture of Urban Schools  
 ETC 3301 Educational Technology (Prerequisites: CS 1305 or CIS 1301, or demonstrated competencies)  
 MATH 3321 Math Concepts I (Prerequisites: MATH 1301 or MATH 1310, admission to Teacher Education)  
 MATH 3322 Math Concepts II (Prerequisites: MATH 1301 or MATH 1310, or admission to Teacher Education)  
 SOSE 3320 Assessment and Evaluation of Children

### Academic Major and Non-Field-based Courses

These courses are preliminary requirements for the degree and are in addition to the core curriculum. These courses fulfill the Academic Ma-

for Requirements and include other courses that are not field-based for students in the Early Childhood–Fourth Grade Bilingual Generalist certification program.

Select 9 SCH of Spanish from among the following: (depending upon placement)

SPAN 2311 Spanish for Native Speakers

and

SPAN 2312 Spanish II for Native Speakers

or

SPAN 2301 Intermediate Spanish I (Prerequisite: SPAN 1402, SPAN 1412 or equivalent)

and

SPAN 2302 Intermediate Spanish II (Prerequisite: SPAN 2301 or equivalent)

and

SPAN 3301 Advanced Spanish Grammar and Composition (Prerequisite: SPAN 2302 or placement by examination)

Select 3 SCH from the two ENG courses below:

ENG 3305 Essay Writing (Prerequisite: 3 hours of literature)

ENG 3318 Studies in English Grammar (Prerequisite: 3 hours of literature)

NS 3310 Physical Science Studies (Prerequisite: Admission to Teacher Education program)

NS 3312 Life Science Studies (Prerequisite: Admission to Teacher Education program)

PED 3304 Aesthetic and Physical Development of Children (Prerequisite: Admission to Teacher Education program)

PED 3314 Children's Literature in Spanish (Prerequisite: Admission to Teacher Education program)

READ 3306 Language and Literacy Development (Prerequisite: Admission to Teacher Education program and READ 3305)

### Education Component

The Professional Development courses require concurrent enrollment in specific field-based blocks of courses. Fifteen clock hours per week are required for Blocks I and II. Block III represents a full-semester, full-day student teaching experience. In order to successfully complete each block, students must demonstrate mastery of the content by passing a comprehensive Block Exam at the end of Blocks I and II. Admission to these blocks is approved by the advisor/coordinator of the Urban Education Department.

### Block I

(Prerequisites: admission to Teacher Education, ECH 2312, READ 3305. Additional Prerequisite and/or Concurrent Enrollment: SOSE 3306, ETC 3301)

BED 3301 Understanding the Second Language Learner

READ 3317 Language Arts Instruction for Bilingual/ESL

READ 4306 Literacy Curriculum, Methods, and Assessment in the Bilingual/ESL Classroom 2-4

### Block II

(Prerequisites: Block I, Passing Score on Block I Exam, MATH 3321, and MATH 3322)

BED 4301 Teaching Language Arts and Reading in Spanish

BED 4311 Integrating Curriculum in a Bilingual/ESL Classroom

READ 3308 Literacy Curriculum, Methods, and Assessment in Spanish EC-2

### Block III

(Prerequisites: Block II, Passing Score on Block II Exam)

EED 4303 Student Teaching in the Bilingual/ESL Classroom

EED 4304 Student Teaching in the Early Childhood Classroom

SOSE 4303 Current Issues in Urban Teaching

**Total: 126 SCH**

## Fourth–Eighth Grade Elementary Generalist (122 SCH)

### Common Core Requirements

See listing under Common Core Requirements in this Catalog.

### Preparatory Requirements and Non-Field-based Courses for the Educational Component (Interdisciplinary Blocks I, II, and III)

These courses are requirements for the degree and are in addition to the core curriculum. These courses fulfill the Preparatory Requirements and include other courses that are not field-based for students in the 4-8 Elementary Generalist certification program.

READ 3305 Foundations of Literacy

SOSE 3306 Culture of Urban Schools

ETC 3301 Educational Technology (Prerequisites: CS 1305 or CIS 1301, or demonstrated competencies)

MATH 3321 Math Concepts I (Prerequisites: MATH 1301 or MATH 1310, admission to teacher education)

MATH 3322 Math Concepts II (Prerequisites: MATH 1301 or MATH 1310, admission to teacher education)

SOSE 3320 Assessment and Evaluation of Children

### Academic Major and Non-Field-based Courses

These courses are preliminary requirements for the degree and are in addition to the core curriculum. These courses fulfill the Academic Major Requirements and include other courses that are not field-based for students in the Fourth–Eighth Grade Elementary Generalist certification program.

PED 3303 Effective Teaching Strategies in Environmental Science Education

PED 3302 Teaching Middle School Mathematics

READ 3307 Language Arts Instruction (Prerequisites: READ 3305, admission to Teacher Education)

READ 3309 Reading in the Content Areas 4-12 (Prerequisites: READ 3305, admission to Teacher Education)

NS 3310/3312 Physical Science Studies or Life Science Studies (any course) (Prerequisite: admission to Teacher Education)

NS 3311 Earth and Environmental Science Studies (Prerequisite: Admission to Teacher Education)

SOC/BEH (any one of the following courses)

ECON 1301 (Prerequisite ENG 1301)

GEOG 1302

HIST 2303 (Prerequisite: Enrollment in or completion of ENG 1301)

POLS 3309 (Prerequisites: POLS 2303, 2304, and junior standing)

SOC 3304 (Prerequisites: SOC 1303 and junior standing)

SPAN 140, 1402, or CLEP Test (0-8 SCH depending upon placement)

HIST 3316 (Prerequisite: junior standing or consent of instructor)

ENG (any one of the following courses)

ENG 3302 (Prerequisite: 3 hours of literature)

ENG 3305 (Prerequisite: 3 hours of literature)

ENG 3320 (Prerequisites: ENG 1302 and junior standing)

ENG 3355 (Prerequisite: 3 hours of literature)

## Education Component

The Professional Development courses require concurrent enrollment in specific field-based blocks of courses. Fifteen clock hours per week are required for Blocks I and II. Block III represents a full-semester, full-day student teaching experience. In order to successfully complete each block, students must demonstrate mastery of the content by passing a comprehensive Block Exam at the end of Blocks I and II. Admission to these blocks is approved by the advisor/coordinator of the Urban Education Department.

### Block I

(Prerequisites: admission to Teacher Education, READ 3305. Additional prerequisite and/or concurrent enrollment: SOSE 3306, ETC 3301)

EED 3316 Understanding the Adolescent Learner and Environment  
EED 3311 Teaching Social Studies in the Elementary Classroom  
READ 3304 Reading Curriculum, Methods, and Assessment 4-8

### Block II

(Prerequisites: Block I, Passing Score on Block I Exam, MATH 3321, and MATH 3322)

EED 3312 Effective Teaching Strategies in Mathematics Education  
EED 3315 Effective Teaching Strategies in Science Education  
READ 4304 Diagnostic Instruction of Reading 4-8

### Block III

(Prerequisites: Block II, Passing Score on Block II Exam)

EED 4301 Student Teaching Elementary  
EED 4302 Student Teaching Middle School Classroom  
SOSE 4303 Issues in Urban Teaching

**Total: 122 SCH**

## Fourth–Eighth Grade Bilingual Generalist (138 SCH)

Please check with the Department of Urban Education about availability of the program before pursuing this degree.

### Common Core Requirements

See listing under Common Core Requirements in this Catalog. Students who have not yet completed their history requirement in the core are urged to fulfill 3 SCH of the requirement by taking HIST 2309 (Ethnic Minorities in American History). In fulfillment of the Behavioral Science requirement, PSY 1303 (Introduction to Psychology) is recommended.

### Preparatory Requirements and Non-Field-based Courses

These courses are preliminary requirements for the degree and are in addition to the core curriculum. These courses fulfill the Preparatory Requirements and include other courses that are no field-based for students in the 4-8 Grade Bilingual Generalist program.

GEOG 1302 World Geography

Select 3 SCH from the following two courses:

HIST 2303 Texas History (Prerequisite or Concurrent Enrollment: ENG 1301)

POLS 3309 Texas Politics (Prerequisites: POLS 2303, and junior standing) POLS 2304

Select 3 SCH from the following two courses:

ECON 2301 Principles of Economics I (Prerequisite: MATH 1301 or MATH 1310)

ECON 2302 Principles of Economics II (Prerequisite: MATH 1301 or MATH 1310)

Select 9 SCH from the following Spanish courses:

SPAN 1401 Elementary Spanish I

or

SPAN 2311 Spanish I for Native Speakers

SPAN 1402 Elementary Spanish II

or

SPAN 2312 Spanish II for Native Speakers

SPAN 2301 Intermediate Spanish I (Prerequisite: SPAN 1402, SPAN 1412 or equivalent)

SPAN 2302 Intermediate Spanish II (Prerequisite: SPAN 2301 or equivalent)

SPAN 3301 Advanced Spanish Grammar and Composition (Prerequisite: SPAN 2302 or placement by examination)

SPAN 4310 Spanish Linguistics (Prerequisite: SPAN 3301 or Approval of Chair)

### Academic Major and Non-Field-Based courses

BED 3311 Foundations of Bilingual/ESL Education (Prerequisite: admission to Teacher Education)

Select 3 SCH from the following:

ENG 3319 Introduction to the Study of Language

ENG 3320 History of the English Language

Select 3 SCH from the following:

ENG 3322 Mexican-American Literature (Prerequisite: 3 SCH of literature)

ENG 3353 Social Class and Literature (Prerequisite: 3 SCH of literature)

Select 3 SCH from the following:

ENG 3318 Advanced English Grammar for Writers (Prerequisite: ENG 1302 and junior standing)

ENG 3305 Essay Writing (Prerequisite: ENG 1302 and junior standing)

ETC 3301 Educational Technology (Prerequisite: CS 1305 or CIS 1301, or demonstrated competencies)

Select 3 SCH from the following:

HIST 2303 Texas History (Prerequisite or Concurrent Enrollment: ENG 1301)

POLS 3309 Texas Politics (Prerequisites: POLS 2303, POLS 2304 and junior standing)

HIST 3316 World History Since 1500 AD (Prerequisite: Junior standing)

MATH 3321 Math Concepts I (Prerequisites: MATH 1301, admission to Teacher Education)

MATH 3322 Math Concepts II (Prerequisites: MATH 1301, admission to Teacher Education)

NS 3310 Physical Science Studies (Prerequisite: admission to Teacher Education)

NS 3311 Earth and Environmental Science Studies (Prerequisite: admission to Teacher Education)

NS 3312 Life Science Studies (Prerequisite: admission to Teacher Education)

PED 3314 Children's Literature in Spanish (Prerequisite: admission to Teacher Education)

READ 3305 Foundations of Literacy Development and Instruction EC-12

READ 3307 Language Arts Instruction (Prerequisite: READ 3305 and admission to Teacher Education)

READ 3309 Teaching Reading in the Content Area 4-8 (Prerequisite: READ 3305)

SOSE 3424 Culture of the Urban School (Prerequisite: Introductory course in social sciences)

### Professional Development and Field-based Courses

The Professional Development courses require concurrent enrollment in specific field-based blocks of courses. Fifteen clock-hours per week are required for Blocks I and II. Block III represents a full-semester, full-day student teaching experience. In order to successfully complete each block, students must demonstrate mastery of the content by passing a comprehensive Block Exam at the end of Blocks I and II. Admission to these blocks is approved by the advisor/coordinator of the Urban Education Department.

#### Block I

(Prerequisites: admission to Teacher Education, READ 3305. Additional prerequisite and/or concurrent enrollment: SOSE 3306, ETC 3301)

EED 3311 Teaching Social Studies in the Elementary Classroom

EED 3316 Understanding the Adolescent Learner and Environment

READ 3312 Reading Curriculum, Methods, and Assessment in ESL 4-8

#### Block II

(Prerequisites: Block I, Passing Score on Block I Exam, MATH 3321, and MATH 3322)

EED 3312 Effective Teaching Strategies in Mathematics Education

EED 3315 Effective Teaching Strategies in Science Education

READ 4307 Diagnostic Instruction of Reading in the ESL Classroom 4-8

#### Block III

(Prerequisites: Block II, Passing Score on Block II Exam)

EED 4302 Student Teaching in the Middle-School Classroom

EED 4303 Student Teaching in the Bilingual/ESL Classroom

SOSE 4303 Current Issues in Urban Teaching

**Total: 138 SCH**

### Fourth–Eighth Grade Language Arts-Social Studies Specialist (132-137 SCH)

Please check with the Department of Urban Education about availability of the program before pursuing this degree.

#### Common Core Requirements

See listing under Common Core Requirements in this Catalog. Students who have not yet completed their history requirement in the core are urged to fulfill 3 SCH of the requirement by taking HIST 2309 (Ethnic Minorities in American History). In fulfillment of the Social/Behavioral Science requirement, PSY 1303 (Introduction to Psychology) or SOC 1303 (Principles of Sociology) is strongly recommended.

#### Preparatory Requirements and Non-Field-based Courses

These courses are preliminary requirements for the degree and are in

addition to the core curriculum. These courses fulfill the Preparatory Requirements and include other courses that are no field-based for students in the 4-8 grade Language Arts-Social Studies program.

Select 3 SCH from the following:

ECON 2301 Principles of Economics I (Prerequisites: MATH 1301 or MATH 1310)

ECON 2302 Principles of Economics II (Prerequisites: MATH 1301 or MATH 1310)

GEOG 1302 World Geography

Select 3 SCH from the following:

HIST 2303 Texas History (Prerequisite or Concurrent Enrollment: ENG 1301)

HIST 3312 Readings in Texas History (Prerequisites: Junior standing and 3 SCH in history)

POLS 3309 Texas Politics (Prerequisites: POLS 2303, POLS 2304, junior standing)

POLS 3302 Public Policy Analysis (Prerequisites: POLS 2303, POLS 2304, junior standing)

Select 3 SCH from the following:

SOC 1303 Principles of Sociology (Prerequisite or Concurrent Enrollment: ENG 1301)

PSY 1303 General Psychology (Prerequisite or Concurrent Enrollment: ENG 1301)

#### Academic Major and Non-Field-based Courses

These courses are preliminary requirements for the degree and are in addition to the core curriculum. These courses fulfill the Academic Major Requirements and other courses that are not field-based for students in the Fourth–Eighth Grade Language Arts/Social Studies Specialist program.

ENG 3351 Children's Literature (Prerequisite: 3 SCH of literature)

ENG 3355 Young Adult Literature

ENG 3318 Advanced English Grammar for Writers (Prerequisite: ENG 1302, junior standing)

ENG 3305 Essay Writing (Prerequisite: ENG 1302, junior standing)

ENG 3306 Introduction to Literary Theory (Prerequisite: 3 SCH of literature)

Select 3 SCH from the following:

ENG 3319 Introduction to the Study of Language (Prerequisite: ENG1302, junior standing)

ENG 3320 History of the English Language (Prerequisite: ENG 1302, junior standing)

ETC 3301 Educational Technology (Prerequisite: CS 1305 or CIS 1301, or demonstrated competencies)

HIST 3316 World History since 1500 A.D. (Prerequisite: Junior standing)

READ 3305 Foundations of Literacy Development and Instruction EC-12

READ 3309 Teaching Reading in the Content Area 4-8 (Prerequisite: READ 3305)

Select 3 SCH from the following:

SOC 4301 Political Sociology (Prerequisites: SOC 1303, 3 additional SCH in sociology, junior standing)

POLS 3310 American Legislatures (Prerequisites: POLS 2303, POLS 2304, junior standing)

POLS 4306 Women and Politics (Prerequisites: POLS 2303, POLS 2304, junior standing)

Select 3 SCH from the following:

SOC 3304 Minorities in America (Prerequisites: SOC 1303, junior standing)

SOC 3306 Social Inequality (Prerequisites: SOC 1303, junior standing)

SOC 4305 Urban Sociology (Prerequisites: SOC 1303, 3 additional SCH in sociology, junior standing)

SOSE 3306 Culture of the Urban School

SPAN 3–8 SCH (depending upon placement)

### Professional Development and Field-based Courses

The Professional Development courses require concurrent enrollment in specific field-based blocks of courses. Fifteen clock hours per week are required for Blocks I and II. Block III represents a full-semester, full-day student teaching experience. In order to successfully complete each block, students must demonstrate mastery of the content by passing a comprehensive Block Exam at the end of Blocks I and II. Admission to these blocks is approved by the advisor/coordinator of the Urban Education Department.

#### Block I

(Prerequisites: admission to Teacher Education, READ 3305. Additional prerequisite and/or concurrent enrollment: SOSE 3306, ETC 3301)

EED 3316 Understanding the Adolescent Learner and Environment

READ 3327 Language Arts Instruction 4-8

READ 3304 Reading Curriculum, Methods, and Assessment 4-8

#### Block II

(Prerequisites: Block I, Passing Score on Block I Exam. Additional prerequisite or concurrent enrollment: SOSE 3320)

EED 3311 Teaching Social Studies in Elementary Classroom

EED 4320 Advanced Processes for Teaching Writing in the Middle Grades

READ 4304 Diagnostic Instruction of Reading 4-8

#### Block III

(Prerequisites: Block II, Passing Score on Block II Exam)

EED 4301 Student Teaching in the Elementary Classroom

EED 4302 Student Teaching in the Middle School Classroom

SOSE 4303 Current Issues in Urban Teaching

**Total: 132-137 SCH**

## Secondary Education

Students seeking secondary certification (grades 8-12) will select from the following:

Bachelor of Science with Life-Earth Science Certification

Bachelor of Science with Physical Science Certification

Bachelor of Science with Science Composite Certification

Bachelor of Science in Social Sciences with Composite Social Studies Certification

Bachelor of Arts in English with English Language Art Certification

Bachelor of Science with Mathematics Certification

Bachelor of Science with Computer Information Systems Certification\*

Bachelor of Science with Business Certification\*

Bachelor of Arts with History Certification

\*State certification examinations are pending. In order to determine certification requirements for the areas above, please contact your content area department.

To obtain certification to teach in grades 8-12, students must also take course work in the area of Professional Development. These are:

### Support Courses: (9 hours):

ETC 3301 Educational Technology

READ 3309 Teaching Reading in the Content Areas

SOSE 3306 Culture of the Urban School

### Professional Development Sequence (27 hours)

Courses in the professional development sequence must be taken as a block of courses. These blocks will be offered at various times to accommodate student schedules. Blocks I and II require 15 clock-hours weekly for a semester (6 of which are internships in public schools), and Block III represents a full-semester, full-day student teaching experience. In order to successfully complete each block, students must demonstrate mastery of the content by passing a comprehensive Block Exam after Block I and Block II. Block I and II students who are not teachers-of-record must spend at least 6 hours per week with a mentor in a public school classroom under the supervision of UHD faculty. Admission to these blocks is by approval of the advisor/coordinator of the Urban Education Department. Summer blocks are open only to teachers-of-record. Approval for admission to summer blocks must be obtained in the Urban Education Advising Office.

#### Block I

SED 3301 Understanding the Learner in the Secondary School

SED 3305 Professional Roles and Responsibilities in the Urban Secondary School

SED 3312 Organizing and Managing the Classroom Environment in the Secondary School

#### Block II

SED 3302 Enhancing Student Achievement in the Secondary School

SOSE 3321 Assessment and Evaluation in the Classroom

READ 4321 Reading across the Curriculum for Grades 8-12

#### Block III

SOSE 4303 Current Issues in Urban Teaching

SED 4301 Student Teaching in the Secondary School

SED 4302 Student Teaching in the Secondary School

## Master of Arts in Teaching

Majors in Elementary Education (EC-4, 4-8), Bilingual Education, Secondary Education, and Curriculum & Instruction. (See the Graduate Academic Programs section of this catalog)

## Sciences and Technology

### COLLEGE OF SCIENCES AND TECHNOLOGY

**George Pincus**, PhD, PE, Dean

**Kenneth Oberhoff**, PhD, Associate Dean

Room 723-North, 713-221-8019

The College of Sciences and Technology provides intellectual discipline and academic experiences essential to a sound education. It offers degrees to prepare students to enter professional schools, technical and scientific careers, graduate study and research. The college offers undergraduate courses and programs in the Biological and Physical Sciences, Mathematical and Computer Sciences, and Engineering Technology. The degree programs offer opportunities for specialization as well as breadth.

The College of Sciences and Technology places the highest emphasis on quality instruction throughout its programs. Bringing the leading edge of science and technology into the classroom is a major goal that the faculty accomplishes by remaining current and active in their fields of specialization. The recently formed UHD Scholars Academy is designed to encourage more students to pursue and complete undergraduate degree programs in computer science, engineering/engineering technology, mathematics, and the natural sciences.

The College of Sciences and Technology also offers its students rare opportunities for undergraduate-level research. Resident research centers are: the Center for Applied Polymer Science Research, created in 1994 to provide undergraduate students at UHD with the opportunity to participate directly in basic and applied polymer research projects that are of academic and industrial significance, and the Center for Computational Sciences and Advanced Distributed Simulation, whose mission is to formally assemble a human resource base in the field, perform research that supports funded activities, develop software and investigate new technologies which respond to funding agency needs. Summer research assistantships are available for qualified students.

### UHD Scholars Academy

**Vicky Estrera**, PhD, Coordinator

Room 725-North, 713 221-8471

The Scholars Academy is an exciting and innovative program at UHD designed for students who want to major in Computer Science, Mathematics, Engineering/Engineering Technology, and all areas of Natural Science. This competitive program is funded by the National Science Foundation, NASA, Office of Naval Research, UHD, US Army Research Office and the US Department of Agriculture. Academy Scholarships vary from \$2,500 to \$5,000 per academic year with additional summer stipends available for research participation. Students applying for admission to the Academy must be graduates of a college-preparatory high school curriculum; have a minimum GPA of 3.0 in mathematics and science; have minimum SAT Math and Verbal scores of 450 each or THEA math, reading and writing component scores of 250 each; and be enrolled as full-time students majoring in one of the degree programs in the College of Sciences and Technology.

### Programs of Study

The College offers degree programs leading to:

Bachelor of Science with majors in:

- Applied Mathematics
- Biological and Physical Sciences
- Biology
- Biotechnology
- Chemistry
- Computer Science
- Industrial Chemistry
- Microbiology
- Quantitative Methods

Bachelor of Science in Engineering Technology with majors in:

- Control and Instrumentation Electronics Design\*
- Safety and Fire
- Process and Piping Design\*
- Structural Analysis and Design\*

\*Accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (111 Market Place, Suite 1050, Baltimore, MD 21202, Phone: 4210-374-7700, Email: accreditation@abet.org, <http://www.abet.org>)

### General Degree Requirements

#### General Education Requirements

All students seeking a bachelor's degree at the University of Houston-Downtown must complete the general education requirements (see pages 24), including the common core courses, application courses, enhancement courses and the Writing Proficiency Examination. Fulfillment of general education requirements may vary depending on the degree.

#### Prerequisites

Registration for any course offered by the College of Sciences and Technology that has a course prerequisite must be authorized by an advisor. Students may be dropped from any class for which they lack a prerequisite or a co-requisite. A course that is a prerequisite or co-requisite for another course may not be dropped unless the student drops both courses.

#### Transfer Credits

The department chair in consultation with department faculty will determine the applicability of transfer credits into specific degree programs.

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## Computer and Mathematical Sciences Department

**Kenneth Oberhoff**, PhD, Chair  
Room 705-South, 713-221-8012

### Faculty

Professors:	Aló, Barnes, de Korvin, London, Rodriguez, Sirisaengtaksin, Turski, Xie
Associate Professors:	Becerra, Berrached, DeLaViña, Hodgess, Oberhoff, Simeonov, Vobach, Waller, Yoon
Assistant Professors:	Anderson, Chan, Chen, Lin, Pepper, Redl, Tecarro, Yuan, Zafiris
Lecturers:	Baker, Gad, Leveille, Nadler-Blumberg, Nakamura, Nguyen, Rosenthal-Simmons, Solomon
Emeriti:	Freeman

Academic Areas: Computer science, mathematics, statistics

## Programs of Study

### Bachelor of Science with majors in:

- Computer Science
- Applied Mathematics
- Quantitative Methods

The degree programs in the Department of Computer and Mathematical Sciences provide students with an education responsive to the expanding uses of mathematical and computer techniques in business, government and industry. They are designed to permit students to select courses suited to a variety of interests and career goals. In achieving these objectives, advising plays an important role and consequently each student is assigned an advisor to assist with the student's schedule and career planning. The departmental Academic Screening Committee periodically evaluates academic progress by departmental majors, and students are advised appropriately.

Undergraduate training in the mathematical sciences has undergone substantial change during the past decade. This change has been driven by advances and developments in the computer field and the expanding use of computers in business, government and industry. Growing demands exist for professional applied mathematical scientists. These individuals should have a solid background in basic mathematics, an understanding of advanced programming languages as well as advanced software techniques, and a mastery of important techniques in applied mathematics such as operations research and statistics. Virtually all industrial, business and governmental environments need individuals with these qualifications.

Those whose interests lie in the administrative or managerial sciences are especially valuable in market forecasting, computer-based accounting systems, industrial control, management training programs and long-range planning decisions. Those with an interest in statistics are valuable to firms that deal with large amounts of data, such as banking and insurance companies, which need personnel to develop and maintain the associated software.

## General Requirements for Graduation

The Department of Computer and Mathematical Sciences requires all candidates pursuing degrees in that department to have a grade of "C" or better in all Computer and Mathematical Sciences course work. Transfer grades of "D" are not accepted by the department.

Students are responsible for meeting the requirements for graduation. Therefore, students should become familiar with the requirements listed in this Catalog and their degree plan and should refer to them each time they plan their semester program of study.

The last 25% (32 hours) of the semester credit hours of course work toward the degree must be taken at the University of Houston-Downtown. A minimum of 18 semester hours of upper-level credit in CMS courses must be completed at UHD. Students who wish to take courses at another college or university, including any other campus of the University of Houston System, and apply the credits earned toward their degree must request approval through the department that administers their program before taking the course. Courses taken without such approval may not be counted toward the fulfillment of the degree requirements.

## Bachelor of Science

### Majors in Applied Mathematics, Computer Science, Quantitative Methods

**Ken Oberhoff**, PhD, Coordinator  
Room 705-South, 713-221-8012

The Computer and Mathematical Sciences degree programs are structured to develop written and oral communication skills, to provide broad-based studies in the mathematical sciences, and to provide a selection of advanced course work in computer science, applied mathematics and/or statistics.

One of the key aspects of the program is the Senior Seminar during which students are exposed to the world community as it relates to the major. In addition, students prepare a project proposal for their possible practicum. As a result of their performance in this course, students are invited to participate in the Senior Project or are assigned an appropriate writing course. The writing course requires prerequisites of MATH/CS 4294, COMM 1304, ENG 3302 and department approval.

All degree candidates must have a 2.0 GPA average and a grade of "C" or better in all Computer and Mathematical Sciences course work. Transfer grades of "D" are not accepted by the department. Any course substitutions or waivers must be approved by the department chair and dean.

Students who complete the requirements of the University College are accepted for advising into the Department of Computer and Mathematical Sciences after they complete MATH 1301 College Algebra with a grade of "C" or better.

To declare a major in the department, students must satisfy: TSI complete or exempt; 30 hours with 6 hours or more at UHD, or 60 transfer hours; "C" or better in MATH 1301; "D" or better in ENG 1302; and GPA of 2.0 or better. Policies regarding the degree programs are

printed on the program sheets distributed by the department. In compliance with the accrediting principles of the American Assembly of Collegiate Schools of Business, the business content of non-business programs is limited to no more than 25 percent of the hours prescribed for graduation.

## Applied Mathematics Major (128 hours)

The curriculum is structured to prepare the student to develop and use analytical skills, to master mathematical techniques required in related fields of applications, and to enter the employment market with relevant and proficient mathematical tools for areas such as industrial mathematics, applied statistics, or computer analysis and programming for various types of applications. The degree requires a minimum of 128 semester credit hours.

### General Education and Core Requirements (see page 24)

Additional General Education Requirements: Students majoring in applied mathematics are also required to take ENG 3302, COMM 1304. Eight hours of lab sciences are required and must be in the same natural science and be approved by the department: MATH 2305 satisfies the analytical skills requirement of the General Education program. The writing skills requirement may be met by taking ENG 3302 and one of the following W courses: MATH 4395; MATH 4304; MATH 4312; MATH 4301; MATH 4315.

### Computer Science Requirement (7 hours)

CS 1410  
CS 2310

### Mathematical Sciences Requirements (44 hours)

MATH 2305, 2307, 2401, 2402, 2403, 3301, 3302, 3306, 3307, 3308, 4294, and 4395 (or approved W course). Six hours of additional upper-level senior mathematical sciences courses selected from MATH 3311, 4301, 4302, 4304, 4305, 4315.

### Minor (18 approved hours minimum)

Any university-approved minor will satisfy this requirement.

**Electives** (18 hours to complete a minimum of 128 hours total)

## Computer Science Major (128 hours)

The Computer Science program in the Department of Computer and Mathematical Sciences at UH-Downtown offers students a strong foundation in the fundamental concepts of computer science combined with sound practical training relevant to the common applications of computing in business and industry. The Bachelor of Science degree provides preparation for all career paths in computer science and information technology, including database systems, scientific computing and simulation, graphics, artificial intelligence, software engineering, and networking and telecommunications. By emphasizing broad-based studies including mathematics and science requirements, the student's choice of an approved university minor, and sustained development of writing and speaking proficiency, the degree furnishes students with the problem solving and communication skills that are in high demand in today's job market and graduate schools. Possessing many areas of expertise, the computer science faculty shares UHD's commitment to quality teaching in a challenging yet personal and supportive learning environment. This commitment helps our majors compete successfully for positions involving the use and support of current computer applica-

tions, as well as for positions designing and building the computer applications of tomorrow.

### General Education and Core Requirements (see page 24)

Additional general education requirements for students majoring in Computer Science are ENG 3302 and COMM 1304. Eight hours of lab sciences are required and must be in the same natural science and be approved by the department. MATH 2305 satisfies the analytical skills requirement of the General Education program. The writing skills requirement may be met by taking ENG 3302 and one of the following W courses: CS 4395; CS 4306; CS 4318; CS 4301; CS 4328; CS 4320; CS 4325.

### Mathematics Requirements (20 hours)

MATH 2305, 2307, 2401, 2402, 3301, and 3302.

### Computer Science Requirements (44 hours)

CS 1410, 2310, 3304, 3306, 3401, 3402, 4294, 4303, 4315, and 4395 (or approved W course). In addition, 12 approved hours of upper-level Computer Science courses must be taken.

### Science Requirement (4 hours)

Four hours of science in addition to the general education requirements above. These hours may be counted toward the minor requirements.

### Minor (18 approved hours minimum)

Any approved university minor will satisfy this requirement.

**Electives** (sufficient hours to complete a minimum of 128 hours total)

## Quantitative Methods Major (128 hours)

The curriculum in Quantitative Methods is structured to allow students to be employed in areas requiring the tools of discrete mathematics and statistics. The advent of high-speed computers and technological advances being made in this area has encouraged the development of, and has resulted in, important advances that constitute significant statistical tools for such areas as the life sciences, administrative/managerial sciences and the social/behavioral sciences.

### General Education and Core Requirements (see page 24)

Additional general education requirements for students majoring in quantitative methods are: ENG 3302; PHIL 3304; COMM 1304. Eight hours of lab sciences are required and must be in the same natural science and approved by the department. MATH 2305 satisfies the analytical skills requirement of the General Education program. The writing skills requirement may be met by taking ENG 3302 and one of the following: MATH 4395; STAT 4300; STAT 4303; STAT 4307; STAT 4309; STAT 4310.

### Mathematical Sciences Requirements (39 hours)

CS 1408 or CS 1410, MATH 1305, 1306, 2305, 2307, 4294, 4395 (or approved W course), STAT 3309, 3310, and four courses chosen from MATH 4306, 4311; STAT 4300, 4303, 4307, 4309, 4310. The sequence MATH 2401, MATH 2402, MATH 3302 may be substituted for MATH 1305, MATH 1306, STAT 3309, STAT 3310.

### Minor (18 hours minimum)

Any university-approved minor will satisfy this requirement.

**Electives** (27 hours to complete a minimum of 128 hours)

## Minor Programs

### Minor in Applied Mathematics (21 hours minimum)

MATH 2401  
MATH 2402  
MATH 2403  
MATH 2307

Six hours from:

MATH 3301  
MATH 3302  
MATH 3306  
MATH 3307  
MATH 3308  
MATH 4301  
MATH 4302  
MATH 4304  
MATH 4305

These six upper level hours must be completed at UHD.  
All hours counted toward the minor must be "C" or better.

### Minor in Applied Statistics (18 hours minimum)

The sequence of MATH 1305, MATH 1306, STAT 3309  
or

The sequence of MATH 2401, MATH 2402, MATH 3302

Nine hours from:

STAT 3310  
STAT 4300  
STAT 4303  
STAT 4306  
STAT 4307  
STAT 4309  
STAT 4310  
STAT 4311

Six of the upper level hours must be completed at UHD.  
All hours counted toward the minor must be "C" or better.

### Minor in Bioinformatics (21 hours minimum)

BIOL 3303/3103 MATH 3302

One course from:

BIOL 3302/3102  
BIOL 4303  
BIOL 4320  
BIOL 4330  
CHEM 4340/4140

At least two courses from:

CS/MATH 3308  
CS/MATH 4306  
CS 4328  
CS/MATH 4333  
CS/MATH 4399

At least two courses from:

MATH 3301  
MATH 4315  
MATH 4304  
STAT 4307

Students majoring in an area of the natural sciences, computer science or mathematics should choose courses in consultation with their academic advisor.

### Minor in Computer Science (19 hours minimum)

CS 1410

CS 2310

Six hours beyond CS 1305

Six hours of upper-level Computer Science. These six upper level hours must be completed at UHD.

All hours counted toward the minor must be "C" or better.

#### For all minors:

- No D accepted toward credit to minor
- At least 6 hours of upper-level course work in the minor must be completed at the University of Houston-Downtown

## Honors Program in the Computer and Mathematical Sciences

To enhance the educational opportunities and experiences of the academically talented students at UH-Downtown, the Department of Computer and Mathematical Sciences offers an Honors Program. The program is designed to challenge and motivate students to do more than the minimum required for a particular degree. Students who successfully complete this program will be designated as graduates of an Honors Program in the Department of Computer and Mathematical Sciences on their diploma and university transcript.

#### Admission Requirements:

- Application to the department's Honors Program Admission and Review Committee
- Completion of at least 60 semester credit hours of recognized university-level work
- An overall GPA of at least 3.0 with a GPA of 3.25 or better in CMS courses
- Completion of at least 16 semester credit hours in CMS courses, eight of which must have been taken at UH-Downtown.

#### Program Requirements:

- Satisfy the requirements for one of the department's Bachelor of Science degree programs
- Complete at least two honors designated courses in addition to three hours of credit in Senior Honor Thesis. The Senior Thesis will be done under the supervision of an approved member of UHD faculty and will be presented in both oral and written form to the CMS faculty.
- Maintain a minimum GPA of 3.25 in all CMS courses including the required honors courses.
- Maintain a GPA of 3.0 or better in all courses outside the CMS Department taken at UH-Downtown.

The department Honors Program Admissions and Review Committee must approve all honors designated courses and all projects proposed by students for their honors theses. Upper-level courses designated as Honors require at least 25 percent more in-depth study than that required of students taking the course without honors credit. The additional course requirements will vary depending on the course instructor.

## Mathematics Certification Program

In addition to the degree program, the CMS Department offers in conjunction with the Urban Education Department, a bachelor of science in Applied Mathematics with mathematics certification.

## Pi Mu Epsilon

The Department of Computer and Mathematical Sciences is privileged to have a chapter of the prestigious honorary mathematics society Pi Mu Epsilon. The name of our chapter is Texas Nu. The mission of the society is to encourage and promote mathematics. Each year the Pi Mu Epsilon coordinators invite students who have shown exceptional abilities in the mathematical sciences to join the chapter. In addition, the Department of Computer and Mathematical Sciences is also privileged to have student chapters of the prestigious organizations: The Mathematical Association of America and the Association of Computing Machinery. Both chapters are very active.

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## Engineering Technology Department

**Alberto Gomez-Rivas**, PhD, PE, Chair  
Room 738 North, 713-221-8089

### Faculty

Professors: Gomez-Rivas, Pincus  
Associate Professors: Franz, Nandagopal, Feng  
Assistant Professors: Sheinberg

### Programs of Study

#### Bachelor of Science in Engineering Technology with majors in:

Control and Instrumentation Electronics Design Technology  
Safety and Fire Engineering Technology  
Process Piping Design Technology  
Structural Analysis and Design Technology

### Mission and Objectives

The Engineering Technology Department strives to provide high quality engineering technology degree programs and unique curricula for students from diverse social, educational, and ethnic backgrounds. The department is committed to maintaining an educational environment in which students can significantly enhance their academic standing as well as their skills in computing, problem-solving, communication, and teamwork. With a strong sense of professionalism, students are trained to become successful individuals who are socially responsible and professionally competitive.

The Engineering Technology curricula reflect the demands and requirements of industries and businesses in the greater Houston area. The close partnerships forged between the department and local industries ensure that our academic programs are dynamic and up-to-date. Such partnerships also benefit graduates when they seek employment.

Our academic programs include solid foundation courses in the basic sciences, mathematics, and applied engineering together with a strong emphasis in computer applications. Courses in PC applications in engineering and PC facilities management are included in the curricula of all Engineering Technology programs to promote the philosophy of productivity. Design-orient-ed semester projects embedded in technological courses give students ample opportunities to gain practical experience, and to prepare themselves to be productive engineering technologists after graduation.

The Department provides an innovative teaching and learning envi-

ronment. Classroom lecturing is typically combined with laboratory experiments and computer simulations. The degree programs aim to empower students with lifelong learning and continuous improvement capabilities. Members of the faculty are committed to providing extended support to students' learning activities both inside and outside the classroom. The faculty's open-door policy and flexible class scheduling accommodate the needs of working students. Our mentoring system ensures that each student receives individual consulting time. The existence within the Department of a number of student chapters of professional organizations promotes networking, career awareness and planning opportunities. Special scholarships are available to promote excellence in academics, service, and leadership.

### Honor Societies

Texas Zeta Chapter of Tau Alpha Pi, National Honor Society for Engineering Technologies

### Professional Organization

The Engineering Technology Department is the home of the Society of Piping Engineers and Designers (SPED).

### Facilities

The modern laboratory facilities in the Engineering Technology Department provide students with ample opportunities for hands-on practice. The laboratories are:

- Process Piping Laboratory
- Structures and Soil Mechanics Laboratory (sponsored by NSF)
- GPS-GIS Laboratory
- Electronics Laboratories
- Process Control Laboratory

These labs are equipped with materials, equipment, instruments, PCs and computer networks, and various up-to-date design and application software tools that meet industrial standards.

### Semester Projects

In order to fulfill the accreditation requirements of TAC of ABET, all courses in the Engineering Technology Department include semester projects with collaborative participation of all students working in teams. The projects include oral presentations, written reports, CADD drawings, and development of computer simulations. The purpose of the projects is to train students to work on real-industry problems in the team environment that they will encounter working in industry after graduation.

### Advising

For information about requirements for admission to Engineering Technology degree programs, declaration of major, transferability of courses, and requirements for graduation, please contact the department office in Room 738-North, or phone 713-221-8089.

The minimum conditions which must be met by students before being accepted in an Engineering Technology degree program are: passing all sections of the THEA test, completing 30 hours of course credits that are applicable to the Engineering Technology degree programs, and being in good academic standing. Engineering Technology faculty will recommend courses and provide course sequence guidelines to ensure that students make smooth progress toward completion of degree requirements. Faculty members also provide information regarding career opportunities and other development opportunities.

When a student is accepted into an Engineering Technology degree

program, the department prepares a computerized official degree plan and makes it available for review by the student. The student's degree plan serves as a basic advising document used by the department faculty. In order to facilitate advising during registration, students should bring an electronic copy of their degree plan.

### Requirements for Graduation

The requirements for graduation with an Engineering Technology major comply with the UHD policy on graduation requirements. In addition, the students should complete all the requirements listed for the specific degree program. It is the students' responsibility to become familiar with the requirements listed in this Catalog and in their degree plan, and the students should refer to them each time they plan their semester program of study.

### Courses of Instruction

All courses of instruction are offered at least once each academic year, including summer. Careful planning is required in order for a student to complete a specific degree plan within shortest period of time.

### Minor in Engineering Technology

The Engineering Technology minor is offered to provide specific engineering knowledge and skills to students pursuing degrees in other fields such as business, humanities, or the sciences, and also to enhance the employment prospects of students enrolled in non-technical majors. Laboratories associated with our courses give students hands-on skills in the use of up-to-date equipment, laboratory devices, and instruments. The minor can be customized to meet the needs of the student and to complement the student's academic background. Course requirements shall include 20 semester credit hours in Engineering Technology courses with a limit of 12 credit hours transferred from other institutions. Course grades in the Engineering Technology minor must be "C" or better. Credit for Field Experience cannot apply.

#### Sample Requirements

- Sample for students pursuing the BBA, major in Purchasing & Materials Management:  
ENGR 1401, ET 2401 or ENGR 1400, ENGR 1411 and ENGR 2431 or other courses chosen in consultation with Engineering Technology advisor.
- Sample program for students pursuing the Bachelor of Science, major in Computer Science:  
ENGR 1412, ENGR 2431, ENGR 2421 and ENGR 3435 and ENGR 3451 or other courses chosen in consultation with Engineering Technology advisor.

## Control and Instrumentation Electronics Design Technology (127 hours)

Accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering Technology

**Weining Feng**, PhD, Coordinator  
Room 708-North, 713-221-8591

The main focus of the Control and Instrumentation Electronics Design Technology degree program is the application of computer technology and modern electronics to industrial process control and instrumentation systems. As such, the program produces graduates who:

- have a sound foundation in the analysis, design, testing, and implementation of instrumentation and control systems;

- are proficient in applying their knowledge (in mathematics, sciences, and engineering), and standard tools, especially computer software and hardware tools, to technical problem solving;
- are all-around individuals with strong social skills, able to work in team environments, competent in communication and information presentation, and with a strong sense of professionalism;
- are committed to continuous improvement and lifelong learning.

Control and instrumentation specialists are among the most sought-after personnel in the Houston area due to the growing demand from process industries (petrochemical and oil refining), power companies, and energy industries. Control and instrumentation engineering technology has its basis in computer technology, electrical/electronics systems and communication systems. The broad technical background of control and instrumentation graduates opens up bright employment prospects, from process industries to telecommunications.

### General Education Core Requirements

ENGR 1400 PC Applications in Engineering  
ENG 1302 Composition II  
HIST 1305 US History to 1877  
HIST 1306 US History after 1877  
MATH 2401 Calculus I  
PHYS 1307/1107 General Physics I with Lab  
PHYS 1308/1108 General Physics II with Lab  
POLS 2303 US Government I  
POLS 2304 US Government II  
PSY 1303 General Psychology  
COMM 1304 Introduction to Speech Communication  
ENG 3302 Business and Technical Report Writing  
Fine Arts (three hours)  
Literature (three hours, sophomore level or above)

### Control and Instrumentation Electronics Design Technology Requirements

#### Lower Division

ENGR 1411 Electric Circuits with Lab  
ENGR 2410 Analysis of Engineering Networks  
ENGR 2421 Electronic Devices with Lab  
ENGR 2431 Digital Logic Design  
MATH 2402 Calculus II

#### Upper Division

ET 4323 Technology Seminar  
ET 3308 Materials Science  
ENGR 3409 PC Facilities Management with Lab  
EET 3432 Computer Architecture and Design with Lab  
ENGR 3404 Digital Signal Processing with Lab  
EET 3435 Fundamentals of Automation and Control  
EET 3451 Instruments and Transducers with Lab  
ET 4323 Technology Seminar  
EET 4335 Computer Networking  
ENGR 3406 Process Control Systems  
ENGR 3407 Industrial Robotics with Lab  
EET 3334 Electrical Power Systems  
ENGR 3302 Engineering Economics  
ENGR 3410 Process Modeling and Simulation  
ENGR 4328 CIED Senior Project

## Electives

Six (6) hours of electives selected in consultation with department advisors.

ENG 3302, ENGR 3410 and ET 4323 satisfy the W and S application course requirements of the General Education program.

## Safety and Fire Engineering Technology (129 hours)

**Edward R. Sheinberg**, MME, Coordinator  
Room 706-North, 713-221-8441

The main focus of the Safety and Fire Engineering Technology degree program is the application of engineering principles, including fire dynamics and fire codes, together with computer technology, to industrial safety, and the design of safe industrial facilities. As such, the program produces graduates who

- have a sound foundation in the analysis, design, testing, and implementation of fire protection systems and are proficient in applying their knowledge (in mathematics, sciences, and engineering) and standard tools, especially computer software and hardware tools, to technical problem solving;
- are all-around individuals with strong social skills, able to work in team environments, competent in communication and information presentation, and with a strong sense of professionalism;
- are committed to continuous improvement and lifelong learning.

Safety and fire specialists are among the most sought-after personnel in the Houston area due to the growing demand from process industries (petrochemical and oil refining), power companies, and the energy industry. Safety and Fire engineering technology has its basis in computer technology, thermodynamics, fluid mechanics, materials science and data communications. The broad technical background of safety and fire graduates opens up bright employment prospects, from process industries to the energy industry.

### General Education Core Requirements

ENGR 1400 PC Applications in Engineering  
ENG 1302 Composition II  
HIST 1305 US History to 1877  
HIST 1306 US History after 1877  
MATH 2401 Calculus I  
PHYS 1307/1107 General Physics I with Lab  
PHYS 1308/1108 General Physics II with Lab  
POLS 2303 US Government I  
POLS 2304 US Government II  
PSY 1303 General Psychology  
COMM 1304 Introduction to Speech Communication  
ENG 3302 Business and Technical Report Writing  
Fine Arts Fine Arts (three hours)  
Literature (three hours, sophomore level or above)

### Safety and Fire Engineering Technology Requirements

#### Lower Division

CHEM 1307/1107 General Chemistry I with Lab  
EET 1411 Electric Circuits with Lab  
ENGR 2409 Engineering Mechanics with Lab  
ENGR1402 Fire & Safety Hazard Recognition  
ENGR1403 Fire Suppression & Detection Systems

ENGR 1404 Automatic Fire Suppression Systems  
ENGR 1480 Occupational Safety Techniques  
ENGR 2407 Surveying with GIS-GPS  
ENGR 2410 Analysis of Engineering Networks

#### Upper Division

ET 3307 Applied Thermodynamics  
ET 3308 Materials Science  
ENGR 3311 Structural Analysis  
ENGR 3308 Fluid Mechanics I  
MGT 3301 Management of Organizations  
ENGR 3302 Engineering Economics  
ENGR 4370 Human Factors in Safety and Fire  
ENGR 4410 Industrial Hygiene Instrumentation  
ENGR 4420 Fire Dynamics  
ENGR 4450 Industrial Safety  
ENGR 4380 Security of Computing Systems  
ET 4323 Technology Seminar

#### Electives (9 hours)

ENG 3302 and ET 4323 satisfy the W and S application course requirements of the General Education Program.

## Process Piping Design Technology (126 hours)

Accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology

**N. S. Nandagopal**, MS, Coordinator  
Room 710-North, 221-8439

The main focus of the Process Piping Design degree program is the application of modern technology to design, layout, analysis, construction, operation, and maintenance of piping systems. As such, the program produces graduates who

- have a sound foundation in the analysis, design, construction, and operation of piping systems, including pipes, pumps, reactors and pressure vessels;
- are proficient in applying their knowledge (in mathematics, sciences, and engineering) and standard tools, especially computer software and hardware tools, to technical problem solving;
- are all-around individuals with strong social skills, able to work in team environments, competent in communication and information presentation, and with a strong sense of professionalism;
- are committed to continuous improvement and lifelong learning.

Process piping specialists are among the most sought-after personnel in the Houston area due to the growing demand from process industries (petrochemical and oil refineries), power companies, and energy industries. Process piping engineering technology has its basis in computer technology, materials science, thermodynamics, fluid flow, heat transfer, engineering mechanics, stress analysis, and plant layout. The broad technical background of process piping graduates opens up bright employment prospects in a variety of companies—chemical, petrochemical, off-shore, food, fabrication and testing. *The University of Houston-Downtown has the only Process Piping Design degree program in the United States.*

### General Education Core Requirements

ENGR 1400 PC Applications in Engineering

ENG 1302 Composition II  
 HIST 1305 US History to 1877  
 HIST 1306 US History after 1877  
 MATH 2401 Calculus I  
 PHYS 1307/1107 General Physics I with Lab  
 PHYS 1308/1108 General Physics II with Lab  
 POLS 2303 US Government I  
 POLS 2304 US Government II  
 PSY 1303 General Psychology  
 COMM 1304 Introduction to Speech Communication  
 ENG 3302 Business and Technical Report Writing  
 Literature (three hours)  
 Fine Arts (three hours)

### Process Piping Design Requirements

#### Lower Division

CHEM 1307/1107 General Chemistry I with Lab  
 ENGR 1401 Engineering Graphics I  
 EET 1411 Electric Circuits with Lab  
 ENGR 2409 Engineering Mechanics with Lab  
 ET 2401 Piping Drafting I  
 ET 2402 Piping Drafting II  
 MATH 2402 Calculus II

#### Upper Division

ENGR 3302 Engineering Economics  
 ENGR 3308 Fluid Mechanics I  
 ET 3401 Process Piping Design I  
 ET 3307 Applied Thermodynamics  
 ET 3308 Materials Science  
 ET 4301 Piping Models  
 ET 4315 Piping Stress Analysis  
 ET 4323 Technology Seminar  
 ET 4307 Fluid Mechanics II with Lab  
 ET 4311 Heat-Power Applications  
 ET 4313 Applied Heat Transfer  
 ENGR 4340 Senior Project in Piping Design

#### Electives (9 hours)

Nine (9) hours of career electives selected from the list approved by the department.

ENG 3302, ET 3401, and ET 4323 satisfy the W and S application course requirements of the General Education program.

## Structural Analysis and Design Technology (128 hours)

Accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology

**Alberto Gomez-Rivas**, PhD, Coordinator  
 Room 713-North, 713-221-8581

The main focus of our degree program is the application of computer technology, modern materials, and construction techniques to the design of structures. As such, the program produces graduates who

- have a sound foundation in the analysis, design, testing, and construction of civil structures (bridges, buildings, and communication towers);

- are proficient in applying their knowledge (in mathematics, sciences, and engineering) and standard tools, especially computer software and hardware tools, to technical problem solving;
- are all-around individuals with strong social skills, able to work in team environments, competent in communication and information presentation, and with a strong sense of professionalism;
- are committed to continuous improvement and lifelong learning.

Structural analysis specialists are among the most sought-after personnel in the Houston area due to the growing demand from construction industries, power companies, transportation systems and energy industries. Structural analysis and design technology has its basis in computer technology, construction systems, and materials science. The broad technical background of structural analysis graduates opens up bright employment prospects, from construction industries to telecommunications and transportation systems.

### General Education Core Requirements

ENGR 1400 PC Applications in Engineering  
 ENG 1302 Composition II  
 HIST 1305 US History to 1877  
 HIST 1306 US History after 1877  
 MATH 2401 Calculus I  
 PHYS 1307/1107 General Physics I with Lab  
 PHYS 1308/1108 General Physics II with Lab  
 POLS 2303 US Government I  
 POLS 2304 US Government II  
 COMM 1304 Introduction to Speech Communication  
 ENG 3302 Business and Technical Report Writing  
 PSY 1303 General Psychology  
 Fine Arts (three hours)  
 Literature (three hours, sophomore level or above)

### Structural Analysis and Design Requirements

#### Lower Division

CHEM 1307/1107 General Chemistry with Lab  
 EET 1401 Engineering Graphics I  
 ENGR 1411 Electric Circuits with Lab  
 ENGR 2304 Computer-Aided Drafting and Design I  
 ENGR 2409 Engineering Mechanics with lab  
 ENGR 2407 Surveying  
 MATH 2307 Linear Algebra

#### Upper Division

ENGR 3302 Engineering Economics  
 ENGR 3311 Structural Analysis I  
 ENGR 3312 Reinforced Concrete Design  
 ET 3320 Modern Concrete Technology  
 ET 3321 Soil Mechanics  
 ET 3325 3D Computer Modeling, Rendering and Animation  
 ET 3322 Finite Element Analysis of Structures  
 ET 4320 Prestressed Concrete  
 ET 4321 Structural Steel Design  
 ET 4322 Foundation Design  
 ET 4323 Technology Seminar  
 ET 4324 Senior Concrete Project  
 ET 4325 Senior Steel Project  
 ENGR 3308 Material Science  
 ENGR 3409 PC Facilities Management

### Electives (9 hours)

Nine hours of career electives selected from the list approved by the department.

ENGR 3311, ENG 3302, and ET 4323 satisfy the W and S application course requirements of the General Education program.

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## Natural Sciences Department

**Akif Uzman**, PhD, Chair

Room 813-North, 713-221-8015

### Faculty

Professors:	Capeheart, Merrill, Spears
Associate Professors:	Christmas, Flosi, Gulati, Lyons, McCullough, Montgomery, Morris-Smith, Uzman
Assistant Professors:	Aoki, Benavides, Grebowicz, Horton, Jiang, J. Johnson, Krochmal, Morano,
Lecturers:	Estrera, Garza, Hoge, K. Johnson
Emeriti:	Avenoso, Fefer, Hoffmann-Pinther, Price, Sherman, Umland

Academic Areas: biology, chemistry, geology, microbiology, physics

Pre-Professional Areas: dental hygiene, dentistry, medical technology, medicine, nutrition and dietetics, nursing, occupational therapy, optometry, pharmacy, physical therapy, physician's assistant, and veterinary medicine

Specialized Areas Environmental science and science education (see list of certification areas below).

### Programs of Study

#### Bachelor of Science with majors in:

Biology  
Biological and Physical Sciences  
Biotechnology  
Chemistry  
Industrial Chemistry  
Microbiology

The Department of Natural Sciences offers lower and upper-level courses in the academic and specialized areas listed above. In addition, it provides courses that serve a number of pre-professional areas. Students interested in biology may pursue the Bachelor of Science in Biology or Biotechnology. Students interested in chemistry may pursue the Bachelor of Science program in Chemistry or Industrial Chemistry. Students interested in microbiology may pursue the Bachelor of Science in Microbiology. Students interested in environmental science or science education may seek the Bachelor of Science degree in the Biological and Physical Sciences.

#### Affiliation Agreement between UHD and UTHSC at Houston Graduate School of Biomedical Sciences.

The University of Houston-Downtown and The University of Texas Health Science Center (UTHSC) at Houston Graduate School of Biomedical Sciences have a formal joint program designed to increase the number of students who pursue graduate degrees in the biomedical sciences. This exciting and successful program allows UHD science majors to earn undergraduate degree credit while pursuing advanced-

level research in participating laboratories of the Graduate School of Biomedical Sciences. In addition, this agreement fosters the exchange of faculty for seminars, guest lecturing and joint research projects.

### Declaring a Major and Advising

Students who wish to officially declare a major in an area of natural science and be accepted into a degree program in the Department of Natural Sciences should have passed all portions of THEA, have credit for 30 or more hours of university-level course work with a minimum grade point average of 2.0, and be cleared by University College (Room 655-South). All students accepted into the department will be assigned an advisor. The department's Health Professions Advisory Committee will coordinate the advising of students interested in a particular health professions area. Students who wish to declare a major in science or one of the health-related areas should go to the department office in Room 813-North.

### Drop Policy for Science Courses with Prerequisites/Co-requisites

Students must follow stated prerequisite/co-requisite listings for natural science courses. A student can drop a co-requisite course after mid-semester up to and including the last day to drop the course. The student would receive a W for the dropped course. The department will not allow graduation credit for a science course in which the student has not satisfactorily completed any listed co-requisite.

### General Requirements for Graduation

The Department of Natural Sciences has the following general requirements for all science degrees: (1) Students must have a minimum GPA of 2.0 in all science courses that could apply toward the degree; (2) The only transfer credit courses with grades of D that apply toward a degree are first-year non-mathematics and non-science courses; (3) No more than three credit hours with a grade of D in upper-level science courses may be applied toward the degree; (4) Students must have at least 18 credit hours of upper-level science from UH-Downtown with a minimum GPA of 2.0 to apply toward the degree; and (5) Credit for science courses that are more than 10 years old must be approved by the department before they can be applied toward a degree.

Students are responsible for meeting the requirements for graduation. Therefore, students should become familiar with the requirements listed in their degree plan and should refer to them each time they plan their semester program of study.

The last 25% of the semester credit hours of work toward the degree must be taken at the University of Houston-Downtown. Students who wish to take courses at another college or university, including any other campus of the UH System, and apply the credits earned toward their degrees must request approval through the Natural Sciences Department. Courses taken without such approval may not be counted toward the fulfillment of degree requirements.

### Requirements for Minors in Science

No upper-level courses with grades of D will be counted. No transfer credits with grades of D will be counted. Must have a minimum GPA of 2.0 in courses applied to the minor. Upper-level courses must be taken at UH-Downtown. Credit for directed studies, field experiences, honors thesis and undergraduate research cannot apply.

Bioinformatics:	25 hours: BIOL 3303/3103, MATH 3302 One course from BIOL 3302/3102, BIOL 4303, BIOL 4320, BIOL 4330, CHEM 4340/4140. At least two courses from CS/MATH 3308, CS/MATH 4306, CS 4328, CS/MATH 4333, CS/MATH 4399 At least two courses from MATH 3301, MATH 4315, MATH 4304, STAT 4307 Students majoring in an area of the natural sciences, computer science or mathematics should choose courses in consultation with their academic advisor.
Biology:	22 hours of biology with only eight hours at the lower level: must include a minimum of four three-contact hour laboratory courses.
Chemistry:	21 hours of chemistry: must include CHEM 1307/1107, 1308/1108, 3301/3201 and eight hours of upper-level chemistry.
Geology:	20 hours: must include GEOL 1305/1105, 1306/1106 and 12 hours of upper-level courses in geology.
Microbiology:	20 hours: must include BIOL 1301/1101, 1302/1102, MBIO 2305/2105 and eight hours of upper-level microbiology.
Physics:	20 hours: must include PHYS 2401/2101, 2402/2102 and three upper-level courses in physics.

## Science Certification Programs

**Jon Aoki**, EdD, Coordinator  
Room 724A-North, 713-221-8954

The Department of Natural Sciences, in cooperation with the Department of Urban Education, offers a full array of science certification programs for secondary-level education. These programs satisfy the requirements established by the Commission on Standards for the Teaching Professions of the state of Texas. Detailed curriculum guides are available for each program in Room 813-North.

### Option I Programs (single discipline with a supporting field)

Biology-Chemistry as supporting field  
Life-Earth Science-Chemistry as supporting field  
Physical Science-Biology as supporting field  
Chemistry-Mathematics as supporting field

### Option II Programs (two disciplines)

Biology and Chemistry  
Biology and Earth Science  
Biology and Physical Science  
Chemistry and Earth Science  
Chemistry and Physical Science  
Life-Earth Science and Physical Science

### Option III Program

Science (all disciplines).  
Requirements for all of the above programs may be completed under one of the degree programs available in the department.

## Honors Program in the Natural Sciences

**Jeff Flosi**, PhD, Coordinator  
Room 820-North, 713-221-8171

In order to enhance the educational opportunities and experiences of academically talented students at UH-Downtown, the Department of Natural Sciences offers an Honors Program in the Natural Sciences. The program is designed to challenge and motivate students to do more than the minimum required for a particular degree in science. Students who successfully complete this program will be designated as graduates of an Honors Program in the Department of Natural Sciences on their university transcript.

### Admission Requirements:

- Application to the department's Honors Program Admissions and Review Committee• Completion of at least 60 semester credit hours of recognized university-level work
- An overall GPA of at least 3.0 with a GPA of 3.25 or better in science courses
- Completion of at least 16 semester credit hours in science, eight of which must have been taken at UHD

### Program Requirements:

- Satisfy the requirements for one of the department's Bachelor of Science degree programs
- Complete at least two honors-designated courses in addition to six hours credit in BIOL, CHEM, GEOL, MBIO, or PHYS 4399 Senior Honors Thesis. The two honors courses may not be taken during the same semester. The senior thesis will be done under the supervision of an approved member of the UHD faculty or under a scientist at an affiliated research institution or laboratory and will be presented in both oral and written form to the natural sciences faculty
- Maintain a minimum GPA of 3.25 in all science courses including the required honors courses
- Maintain a GPA of 3.0 or better in all non-science courses taken at UH-Downtown

The departmental Honors Program Admissions and Review Committee must approve all honors designated courses and all projects proposed by students for their honors theses. Upper-level courses designated as Honors require at least 25 percent more in-depth study than that required of students taking the course without honors credit. The additional course requirements will vary depending on the course and instructor.

## Bachelor of Science

### Major in Biological and Physical Sciences

**Glen Merrill**, PhD, Coordinator  
Room 810-North, 713-221-8168

The Bachelor of Science in Biological and Physical Sciences provides both a broad-based curriculum in the liberal arts and a specific set of courses in the natural sciences designed to meet the personal and career goals and interests of the student. This degree is especially appropriate for students interested in multidisciplinary areas such as environmental science, earth/geological science, forensic science, life science, medical technology, public health, science education, and any

health-related program that requires a bachelor's degree for entry into a particular graduate program.

### **Course Requirements for the Biological and Physical Sciences Major (126 hours)**

The approved degree plan for this program will be determined by consultation between the student, his or her advisor, and the department chair. A minimum of 126 hours of university-level course work is required. A maximum of 66 hours from a junior or community college may be approved as credit toward this degree. All general requirements for graduation in the Department of Natural Sciences apply to this degree.

#### **General Education Requirements**

All common core requirements (math and science listed below) may be fulfilled by taking any of the courses listed as options on p. 24. The writing skills requirement is satisfied by the completion of two upper-level writing courses chosen from an approved list of courses available from the program coordinator or the departmental office. The nonverbal analytical skills requirement is satisfied by many of the required natural sciences courses.

The general education program's emphases on ethical and moral issues and the world community are addressed by taking one course in each area. A list of approved courses for these two requirements is available from the program coordinator or the departmental office.

#### **Lower-Level Science Requirements**

*(Some of the following courses may be taken to fulfill common core requirements)*

MATH 1404 CS 1408 or 1410 Seven of the following lecture/laboratory courses:

BIOL 1301/1101, 1302/1102

CHEM 1307/1107, 1308/1108

GEOL 1405, 1406

PHYS 1307/1107, 1308/1108

#### **Upper-Level Requirements**

Forty-four hours, of which at least 22 hours must be in the natural sciences (biology, chemistry, geology, microbiology and physics) with a minimum grade point average in natural sciences courses of 2.0 or better. At least 7-8 hours must be in 4000-level natural sciences lecture courses with at least one laboratory course. Field experience or thesis credit cannot be used to satisfy this requirement

#### **Electives**

Total of 16 hours, at any level, chosen with advisor approval.

NOTE: Excluding the hours listed under "Lower-Level Science Requirements," no more than 28 hours of natural sciences courses (biology, chemistry, geology, microbiology and physics) may be in a single discipline, and no more than 18 hours of the required upper-level science may be in a single discipline.

## **Bachelor of Science**

### **Major in Biology**

**John Capeheart**, PhD, Coordinator  
Room 808-North, 713-221-8176

The Bachelor of Science program provides both a broad-based cur-

riculum in the Liberal Arts and in the Natural Sciences and a set of courses specifically in Biology. It is designed to meet the personal and career goals and interests of the student. The program allows the student a certain amount of flexibility in tailoring a degree program to his/her unique needs, yet does so within the confines of a traditional major in biology. This degree is particularly appropriate for students interested in the following areas: dentistry, medicine and related fields that require post-graduate study, public health, graduate work in biological or biomedical sciences, and science education. The Natural Sciences Department offers other degree programs that serve similar student career objectives. Some are more broad-based; others are more narrowly focused.

### **Course Requirements for the Biology Major (133-136 hours)**

The approved degree plan for this program will be determined through consultation among the student, her/his advisor, and the chairperson of the department. A minimum of 133 hours of university-level work will be required. A maximum of 66 hours from junior or community colleges may be approved as credit toward this degree. All general requirements for graduation in the department and the university apply to this degree.

#### **General Education Requirements**

To fulfill the common core's speech requirement, COMM 1304, 3304, or 3306 are recommended. All common core requirements (math and science listed below) may be fulfilled by taking any of the courses listed as options on p. 24.

The writing skills requirement is satisfied by ENG 3302, 3325, 3326, 3329, or 4306. The nonverbal analytical skills requirement is satisfied by many of the required natural sciences courses. The general education program's emphases on ethical and moral issues and the world community are addressed by taking one course in each area. A list of approved courses for these two requirements is available from the program coordinator or the departmental office.

#### **Basic Mathematics and Science**

*(Some of the following courses may be taken to fulfill common core requirements)*

BIOL 1301/1101, 1302/1102 CHEM 1307/1107, 1308/1108 CS 1408 or 1410 MATH 1404, STAT 2300 or STAT 3311, MBIO 2305/2105 PHYS 1307/1107, 1308/1108

#### **Upper-Level Science**

BIOL 3303/3103

CHEM 3301/3201, 3302/3202, or 4304/4104

One of the following:

BIOL 4320, 4230, 4330, or 4390

One of the following:

BIOL 3310/3110, 3330/3130, 3340/3140 or 4390

Two of the following:

BIOL 3304/3104, 3305/3105, 3320/3120, 4303, 4310/4110, 4313/4113 or 4390

One of the following:

BIOL 3301, 4260, 4340, 4350, 4360 or 4390

#### **Approved Electives**

Total of 27 hours, of which at least eight hours must be at the upper-level.

# Bachelor of Science

## Major in Biotechnology

**Akif Uzman**, PhD, Coordinator  
Room 810-North, 713- 221-8015

This Bachelor of Science program provides a rigorous, broad-based curriculum in the Liberal Arts and in the Natural Sciences, and a set of courses specifically directed toward the field of Biotechnology. This interdisciplinary program provides both entry-level job skills in biotechnology and a strong academic background needed to pursue a master's or doctorate degree in Biotechnology, Biochemistry, Microbiology or Molecular Biology. This program will also satisfy course requirements for all major pre-professional degree programs in medicine, dentistry, pharmacy, optometry, and veterinary medicine.

### Course Requirements for the Biotechnology Major (130-133)

The approved degree plan for this program will be determined through consultation among the student, her/his advisor, and the chairperson of the Department of Natural Sciences. A minimum of 133 hours of university-level course work will be required. The Department of Natural Sciences has the following requirements for all science degrees: (1) Students must have a minimum GPA of 2.0 in all science courses that could apply toward the degree; (2) The only transfer credit courses with grades of D that apply toward a degree are first-year non-mathematics and non-science courses; (3) No more than three credit hours with a grade of D in upper-level science courses may be applied toward the degree; (4) Students must have at least 18 credit hours of upper-level science from UHD with a minimum GPA of 2.0 to apply toward the degree; and (5) Credit for science courses that are more than 10 years old must be approved by the department before they can be applied toward a degree. All general requirements for graduation in the department and the university apply to this degree.

### General Education Requirements

To fulfill the common core's speech requirement, COMM 1304, 3304 or 3306 are recommended. All common core requirements (math and science listed below) may be fulfilled by taking any of the courses listed as options on p. 24.

To fulfill the writing skills requirement, ENG 3302, 3325, 3326, 3329, or 4306 are recommended. The nonverbal analytical skills requirement is satisfied by many of the required math and natural sciences courses. The general education program's emphases on ethical and moral issues and the world community should be addressed through elective courses.

### Basic Mathematics and Science

*(Some of the following courses may be taken to fulfill common core requirements)*

BIOL 1301/1101, 1302/1102 CHEM 1307/1107, 1308/1108 CS 1408 or 1410 MATH 1404, 2401, STAT 2300 or STAT 3311 MBIO 2305/2105 8 additional hours of lower-level biology or physics

### Upper-Level Science

BIOL 3303/3103, 3330/3130 or 3340/3140, BIOL/MBIO 4210, BIOL 4230, 4220, 4330 CHEM 3301/3201, 4340/4140 MBIO 4310, 4320/4120

One of the following:

BIOL 4313/4113

BIOL 4325  
CHEM 3310/3110  
MBIO 3340

One of the following:

BIOL 4320  
CHEM 4342  
MBIO 3320

### Research or internship in Biotechnology (3-4 hours)

### Approved Electives (12 hours)

Must include Enhancement Courses as defined in the UHD Catalog

# Bachelor of Science

## Major in Chemistry

**Tyra Montgomery**, PhD, Coordinator  
Room 817-North, 713-221-8485

### Course Requirements for the Chemistry Major (130-132 hours)

The courses specified for this degree are consistent with the American Chemical Society's suggestions for a Bachelor of Science in Chemistry. This degree will provide students with the knowledge needed to pursue graduate studies in chemistry or related fields.

The program is divided into three principal areas. The first area contains a group of courses in the liberal arts that provide the student with a broad-based general education. The second area contains courses that provide a strong foundation in basic science, including courses in biology, chemistry, computer science, mathematics, and physics. The third area emphasizes the advanced methods, theories, and applications that are important to the world of chemistry. Some of the courses included in this area are organic chemistry, physical chemistry, instrumental analysis, and environmental chemistry. Students are required to participate in a directed studies research activity during the junior or senior year. All general requirements for graduation in the Department of Natural Sciences apply to this degree.

### General Education Requirements

To fulfill the common core's speech requirement, COMM 1304 or 3306 are recommended. All common core requirements (math and science listed below) may be fulfilled by taking any of the courses listed as options on p. 24.

The writing skills requirement is satisfied by ENG 3302, 3325, 3326, 3329, or 4306 and CHEM 3320.

The nonverbal analytical skills requirement is satisfied by many of the required math and natural sciences courses.

The enhancement course requirements should be addressed through elective courses.

### Basic Science and Mathematics

BIOL 1301/1101, 1302/1102 CHEM 1307/1107, 1308/1108 CS 1408 or 1410 MATH 1404, 2401, 2402, 2403 PHYS 1307/1107 and 1308/1108 or 2401/2101 and 2402/2102 STAT 2300 or STAT 3311

### Major Area of Emphasis

CHEM 3300, 3301/3201, 3302/3202, 3310/3110, 3320, 3330/3130, 3332/3132, 4310, 4340/4140, 4362/4162, and one other 4000-level

CHEM course or one 3000- or 4000level PHYS course.

### Electives

Seven to nine hours, which the degree coordinator must approve. Students are encouraged to use an appropriate field experience or undergraduate research course to satisfy part of this requirement.

## Bachelor of Science

### Major in Industrial Chemistry

**Tyra Montgomery**, PhD, Coordinator  
Room 817-North, 713-221-8485

The Bachelor of Science in Industrial Chemistry is a flexible, broad-based curriculum in the liberal arts and natural sciences that prepares the student for a wide variety of technical positions in the chemical and petroleum industries of the greater Houston area, which is considered to be the chemical capital of the world. Graduates of this program will be well prepared to enter the highly technical and demanding field of industrial chemistry.

#### Course Requirements for the Industrial Chemistry Major (130-132 hours)

The program is divided into three principal areas. The first area contains a group of courses in the liberal arts that provide the student with a broad-based general education. The second area contains courses that provide a strong foundation in basic science including courses in biology, chemistry, computer science, geology, mathematics and physics. The third area emphasizes the advanced methods, theories and applications that are important to the world of industrial chemistry. Some of the courses included in this area are organic chemistry, physical chemistry, instrumental analysis, and polymer chemistry. Students are encouraged to participate in an appropriate field experience or a directed studies research activity during their junior or senior year. All general requirements for graduation in the Department of Natural Sciences apply to this degree.

#### General Education Requirements

To fulfill the common core's speech requirement, COMM 1304 or 3306 are recommended. All common core requirements (math and science listed below) may be fulfilled by taking any of the courses listed as options on p. 24. To fulfill the social and behavioral sciences requirement, ECO 1301 is recommended.

ENG 3302, 3325, 3326, 3329, or 4306 satisfy the writing skills requirement. The nonverbal analytical skills requirement is satisfied by many of the required math and natural sciences courses. The enhancement course requirements should be addressed through elective courses.

#### Basic Mathematics and Science

BIOL 1301/1101, 1302/1102  
CHEM 1307/1107, 1308/1108  
CS 1408 or 1410  
GEOL 1405  
MATH 2401, 2402  
PHYS 1307/1107 & 1308/1108, or 2401/2101 & 2402/2102  
STAT 2300 or STAT 3311

### Major Area of Emphasis

CHEM 3301/3201, 3302/3202, 3310/3110, 3330/3130, 4310, 4340/4140, 4364

### Electives

Twenty-six hours, which the degree coordinator must approve. No more than seven hours of lower-level courses may be used unless they are part of a minor approved by the degree coordinator. No more than six hours may be undergraduate research and/or appropriate field experience.

## Bachelor of Science

### Major in Microbiology

**Poonam Gulati**, PhD, Coordinator  
Room 807-North, 713-221-8486

The Bachelor of Science degree in Microbiology will prepare the student to be a productive team member in a variety of settings. A graduate will be prepared for positions in microbially related industry, research and clinical laboratories in the health care industry. In addition to being qualified for immediate industrial employment, a student with this background can also continue with graduate studies in such areas as biochemistry, biotechnology, dentistry, medicine, microbiology, molecular biology and public health microbiology.

#### Course Requirements for the Microbiology Major (129-130 hours)

The program consists of three basic areas. The first area contains courses that provide the student with a broad-based general education. These courses are selected from English, fine arts, humanities and the social sciences. The second area contains courses that provide the student with a strong foundation in basic sciences, math and analytical reasoning skills. These basic courses include biology, chemistry, computer science, mathematics, microbiology and physics. The third area involves in-depth study in areas related to microbiology, including courses in industrial microbiology, immunology, pathogenic microbiology, biochemistry, and virology. All general requirements for graduation in the Department of Natural Sciences apply to this degree.

#### General Education Requirements

To fulfill the common core's speech requirement, COMM 1304 or 3306 are recommended. All common core requirements (math and science listed below) may be fulfilled by taking any of the courses listed as options on p. 24. The writing skills requirement is satisfied by ENG 3302, 3325, 3326, 3329, or 4306. The nonverbal analytical skills requirement is satisfied by many of the required natural sciences courses. The general education program's emphases on ethical and moral issues and the world community are addressed by taking one course in each area. A list of approved courses for these two requirements is available from the program coordinator or the departmental office.

#### Basic Mathematics and Science

*(Some of the following courses may be taken to fulfill common core requirements)*  
BIOL 1301/1101, 1302/1102 CHEM 1307/1107, 1308/1108 CS 1408 or 1410 MATH 1404, 2401 MBIO 2305/2105 PHYS 1307/1107, 1308/1108 STAT 2300 or STAT 3311

### Major Area of Emphasis

Choose fourteen hours of the following: MBIO 3320, 4310, 4340/4140 MBIO/BIOL 3350/3150, 4230, 4313/4113 or choose fourteen hours of the following: BIOL 4220, 4310/4110, 4330 CHEM 3310/3110, 4342.

### Electives

8-9 hours, of which six hours may be satisfied by appropriate field experience.

## Pre-Professional Areas

The Department of Natural Sciences offers lower and upper-level courses in the academic and specialized areas described above. In addition, it provides courses that serve a number of pre-professional areas. Students in pre-dentistry, pre-medicine and pre-veterinary medicine who plan to earn a bachelor's degree prior to entering the respective professional school may choose to follow one of the degree programs offered by the department. The pre-clinical course requirements for students interested in clinical laboratory science, dental hygiene, nursing, nutrition and dietetics, occupational therapy, optometry, pharmacy, physical therapy, physician's assistant and dentistry, medicine and veterinary medicine are described below. Since entrance requirements vary widely and are subject to frequent changes, close consultation with an assigned advisor is recommended.

### Clinical Laboratory Science/Medical Technology

Students who plan to become registered medical technologists must complete one year of clinical training during the fourth or fifth year of study. Prior to entering the clinical program they should complete the following courses: BIOL 1301/1101, 1302/1102, 3420; CHEM 1307/1107, 1308/1108, 3301/3201, 3310/3110, and 4340/4140; ENG 1301, 1302, and six hours of sophomore English; POLS 2303, 2304; HIST 1305, 1306; six hours of mathematics; MBIO 2305/2105, 4320/4120; PHYS 1307/1107, 1308/1108; suggested electives include BIOL 3303/3103, 3305/3105. The BS program in Biological and Physical Sciences is recommended for students interested in Medical Technology or Clinical Laboratory Science. UHD is affiliated with the School of Medical Technology at the Methodist Hospital of Houston.

### Dental Hygiene

Students applying to schools of dental hygiene to pursue the Bachelor of Science in Dental Hygiene are required to complete at least 62 semester hours prior to their admission. Courses generally required include: BIOL 1301/1101, 1302/1102; CHEM 1305/1105; ENG 1301/1302, and 6 hours of sophomore English; POLS 2303, 2304; 3 hours of mathematics; HIST 1305, 1306; PSY 1303; SOC 1303; COMM 1304.

### Medical Records Administration/Health Information Management Program

To qualify for the Medical Record Administration designation, a bachelor's degree and completion of an accredited Medical Record Administration are required. There are three accredited MRA programs at the baccalaureate level in the State of Texas. The general requirements for the program in the State of Texas are: BIOL 1303/1103, 1304/1104; ENG 1301, 1302 and three hours of Sophomore English, POLS 2303, 2304; HIST 1305, 1305; MBIO 1305/1105; three hours each of business, mathematics, computer science and speech; and up to 21 hours, which must include biology and other courses depending on the institution. Check with your advisor for the specific requirements for a given institution.

## Nursing

Students who intend to pursue a bachelor of science degree in nursing are required to complete at least 60 semester hours prior to entering a school of nursing. Courses generally required include: ANTH 2302; BIOL 1303/1103, 1304/1104; CHEM 1305/1105, ENG 1301, 1302; POLS 2303, 2304; HIST 1305, 1306; STAT 2300 or SOS 3312; MBIO 1305/1105; PHIL 1301; PSY 1303, 3307; SOC 1303.

## Nutrition and Dietetics

Students applying to schools of nutrition and dietetics to pursue the bachelor of science degree during their junior and senior year are required to complete at least 60 semester hours prior to their admission. UH-Downtown and the University of Texas School of Allied Health Sciences have a cooperative program for a Bachelor of Science in Nutrition and Dietetics. Lower-level courses required include: BIOL 1303/1103, 1304/1104; CHEM 1307/1107, 1308/1108, 3301/3201; ECO 2301 or 2302; ENG 1301, 1302 and 3 hours of sophomore English; POLS 2303, 2304; PSY 1303; SOC 1303. Recommended electives include courses in physics, statistics, speech and additional courses in social sciences, biology and mathematics.

## Occupational Therapy

Prior to admission to a clinical program in occupational therapy, students are required to complete a minimum of 60 semester hours. Courses generally required include: BIOL 1301/1101, 1302/1102, 1303/1103, or 3304/3104, 1304/1104 or 3305/3105; CHEM 1307/1107, ENG 1301, 1302, plus zero-six hours of literature; POLS 2303, 2304; HIST 1305, 1306; zero-six hours of mathematics; PHYS 1307/1107; six hours of psychology, three-six hours of sociology and zero-three hours of speech. TWU requires a baccalaureate degree for transfer students.

## Optometry

Students applying to the UH College of Optometry to pursue the bachelor of science and doctor of optometry degrees are required to complete at least 90 semester hours prior to their admission. Students may apply for admission while completing their pre-optometry course work. A baccalaureate degree is recommended prior to optometry studies. Courses required to enter the University of Houston College of Optometry include: BIOL 1301/1101, 1302/1102, 1303/1103, 1304/1104; CHEM 1307/1107, 1308/1108, 3301/3201 and 4340; ENG 1301, 1302, and 6 hours of sophomore English; POLS 2303, 2304; HIST 1305, 1306; MATH 1404, 2401; MBIO 2305/2105; PHYS 1307/1107, 1308/1108; PSY 1303; SOS 3312 or STAT 2300; electives: six hours from art, drama, history, literature, music and philosophy.

## Pharmacy

The schools of Pharmacy in the State of Texas are now instituting the Doctor of Pharmacy (PharmD) as the entry level degree for the field of pharmacy. For admission to the program at the University of Houston College of Pharmacy the courses listed below must be successfully completed or in progress. The courses listed also meet all but one or two of the minor requirements for admission to the colleges of pharmacy at the University of Texas at Austin, Texas Southern University, and Texas Tech University.

BIOL 1301/1101, 1302/1102; CHEM 1307/1107, 1308/1108, 3301/3201, 3302/3202; ENG 1301, 1302 and six hours of sophomore English; POLS 2303, 2304, HIST 1305, 1306; MATH 1306; MBIO 2305/2105; PHYS 1307/1107, PSY 1303, PSY 2302 or SOC 1303,

STAT 2300; Six hours of Cultural Heritage electives which meet the requirements of the UH core curriculum. Suggested electives are BIOL 3305/1105 and CHEM 4340/4140/COMM 1304, 3304 or 3306.

## Physical Therapy

Most physical therapy programs recommend a Bachelor of Science degree prior to admission. Courses required include: BIOL 1301/1101, 1302/1102, 3305/3105, 3320/3120; CHEM 1307/1107, 1308/1108; COMM 1304; ENG 1301, 1302; POLS 2303, 2304; HIST 1305, 1306; MATH 1301; PHYS 1307/1107, 1308/1108; PSY 1303, 2310; SOC 1303; STAT 2300. The BS program in Biological and Physical Sciences is recommended for students interested in Physical Therapy.

## Physician's Assistant

Prior to admission to a program leading to professional certification as a physician's assistant, students must complete a minimum of 90 hours. Many students who enter these programs have a four-year degree. Some programs require a degree prior to admission. Students should consult with their advisor for the requirements of the program(s) they are interested in. Courses generally required are: BIOL 1301/1101, 1302/1102 and 1303/1103, 1304/1104; CHEM 1307/1107, 1308/1108, ENG 1301, 1302, three hours of literature; three hours of speech; POLS 2303, 2304; HIST 1305, 1306; MATH 1301; MBIO 2305/2105, STAT 2300; nine hours of behavioral and social sciences; eight hours of electives in health-related areas; and a computer literacy course.

## Dentistry and Medicine\*

A baccalaureate degree is strongly recommended for all pre-dental and pre-medical students since dental and medical colleges accept very few students without a degree. The courses required of most pre-dental and pre-medical students in Texas prior to admission include: BIOL 1301/1101, 1302/1102 and eight hours of advanced biology with lab, CHEM 1307/1107, 1308/1108, 3301/3201, 3302/3202, 4340; ENG 1301, 1302 and six hours of sophomore English (may include ENG 3302), MATH 2401 (except for dental students); PHYS 1307/1107, 1308/1108.

## Veterinary Medicine\*

A baccalaureate degree is recommended for all pre-veterinary medicine students. The following lists the minimum requirements for admission to the Texas A&M College of Veterinary Medicine: BIOL 1301/1101, 1302/1102, 3303/3103; CHEM 1307/1107, 1308/1108, 3301/3201, 4340/4140; MATH 2401 or STAT 2300; MBIO 2305/2105; PHYS 1307/1107, 1308/1108; COMM 1304; ENG 1301, 1302, 3302, three hours of literature, three hours of technical writing, and a three hour course in animal nutrition.

*\*After completion of 30 semester hours of university-level work and passing all sections of the TSI exam, the pre-dental, pre-medical and pre-veterinary major must contact the Health Professions Advisory Committee in order to be assigned a permanent faculty advisor. The advisor and other committee members will be responsible for advising the student, providing information about application procedures and professional entrance exams, and providing letters of evaluation.*

## Admission

### Graduate Admission Policies

Applicants wishing to pursue graduate-level work at UHD must hold a bachelor's degree from an institution accredited by an accrediting agency recognized by the US Department of Education and meet the minimum admissions criteria of the graduate program for which they wish to pursue a degree.

An applicant must be accepted into a specific graduate program at UHD to be admitted to the university as a graduate student.

#### International Applicants

International applicants whose undergraduate work was completed at a foreign university are eligible for admission if UHD determines that their academic preparation is equivalent to or higher than that of graduates of an accredited US institution.

Individuals who hold non-immigrant visas are classified as international students. Individuals who have applied for immigrant status, but who have not adjusted their status with the Immigration and Naturalization Service, also must follow procedures specified to obtain an I-20 immigration form.

International students and US citizens born outside the United States must provide original, valid immigration documents (I-551, I-688, I-94, passport or US citizenship certificate). International graduate students are also subject to the general provisions regarding undergraduate international student admission including providing a transcript evaluation by a certified evaluation service of all transcripts from colleges and universities outside the United States, a statement of financial support indicating who will be responsible for the applicant's educational and living expenses, a current TOEFL score of at least 550 or other evidence of English language proficiency as required by the program the applicant desires to enter, evidence of required health insurance, and any other documentation required to comply with policies and procedures of the United States Immigration and Naturalization Service .

### Graduate Admission Procedures

Applicants must submit all application materials to the Office of Admissions and pay the non-refundable \$25 application fee by the application deadline. The application fee for international students is \$60. The application and fee are valid for a period of one year. Application materials should be sent to:

University of Houston-Downtown  
Office of Admissions  
Coordinator of Graduate Admissions  
One Main Street, Suite S350  
Houston, TX 77002  
713-221-8522

Applicants must submit a completed application form and official copies of all previous college transcripts including previous graduate work. A transcript is considered official when it bears the institution's seal, is

signed by the issuing authority, and is sent directly by the issuing institution or delivered in a sealed envelope from the institution.

Additional application materials, such as standardized test scores, vary based on the specific graduate program. Please consult the website of the graduate program in which you are interested ([www.uhd.edu/admissions/application.htm](http://www.uhd.edu/admissions/application.htm)) or contact the Office of Admissions.

Application deadlines and enrollment procedures are printed in the Registration & Information Bulletin.

## Tuition and Fees

The amounts shown in this section are provided to better assist students in assessing the cost of enrolling at the University of Houston-Downtown. While this information is intended to be comprehensive, tuition and fees are subject to change without notice by action of the Texas Legislature and/or the Board of Regents of the University of Houston System. Students are responsible for any additional amounts due UHD, including changes to any fees and waivers, resulting from audits and corrections, such as registration assessing errors, changing from on-campus to off-campus courses or courses delivered via tape, television or online. For current information on tuition and fees, see the Registration & Information Bulletin for the semester in which enrollment is planned or inquire at the Cashier's Office.

### Distance Education Fees

Students enrolled in courses at off-campus sites or in courses delivered via tape, television or computer modem/online are subject to a distance education fee.

### Residency Status for Tuition Purposes

Residency status is determined in accordance with Rules and Regulations for Determining Residency Status, published by the Texas Higher Education Coordinating Board and pursuant to Title 3, Texas Education Code. Applicants provide residency information in the Application for Admission.

If the information provided is insufficient, UHD will classify the applicant as non-resident and request additional information. As a UHD student, you must establish both Texas residency and US residency in order to pay in-state tuition. If the student has been classified as a non-resident, the student may be required to show proof of either Texas or US residency or both. If you are a first time student at UHD or it is your first semester as a transfer student you must go to the Admissions Office to request a change in residency status along with all supporting documentation. If you have established any academic history at UHD then you must request a residency reclassification form and provide all supporting documentation to the Registrar's Office.

The burden of proof lies with the applicant that the residency requirements have been met for UHD to consider reclassification. Residency appeals must be submitted with all appropriate documentation by the Official Day of Record of the current semester. See University Academic Calendar on the Registration & Information Bulletin for dates.

## Auditing Courses

To audit a course is to enroll in a course on a noncredit basis. Audit students pay the regular tuition and all other applicable fees as set forth in the current Catalog. Senior citizens 65 years or over may audit free on a space-available basis. A change to credit status may not be made after the student has registered to audit a course. Changes from credit status to audit status in a course must be made prior to the end of the Official Day of Record. A Request for Audit form must be processed in the Registrar's Office by the Official Day of Record for the appropriate term. Students wishing to audit courses should contact the Registrar's Office for further details.

## Fees

All new students at the university are subject to a \$10 general property deposit fee. State law allows the university to collect this deposit to insure against loss, damage, and breakage in libraries and laboratories. The deposit is refundable, UPON REQUEST, only upon permanent withdrawal or graduation. Charges for any loss, damage or breakage caused by the student are deducted from the deposit. Refund request forms are available in the Cashier's Office. Any general property deposit for which a refund request has not been made for a period of four years from the date of last attendance shall be forfeited and become a part of the student deposit fund to be used exclusively for scholarships.

In addition to tuition, all students at the University of Houston-Downtown are subject to student services, general use, University Center, student record, international education and computer access fees (see chart below). Some courses and services also require additional fees:

Application for admission (nonrefundable).....	\$25
Late application for admission (nonrefundable) .....	\$75
Application for international admission (nonrefundable) .....	\$60
Late application for international admission (nonrefundable).....	\$100
Laboratory (per laboratory class) .....	Varies from \$10 to \$30
Distance ed: face-to-face or ITV at off-campus center..	\$25 per SCH
Distance ed: computer modem/online.....	\$50 per SCH
Advanced standing exam.....	\$15
Graduation application .....	\$50
Late registration (nonrefundable) .....	\$50
Returned check .....	\$20
Orientation fee.....	\$25
Field trip .....	Amount necessary to defray cost of trip
International student service fee .....	\$45
Student parking registration: long semester.....	\$50
Student parking registration: summer session .....	\$25
Course attempted 3rd time.....	\$65 per SCH

The university reserves the right to change tuition, other charges, and related requirements and regulations as necessitated by Board of Regents or legislative action.

International students pay out-of-state tuition and fees plus a \$45 international student service fee during long semesters. Student Health Insurance is also required for each semester. Students purchasing Health Insurance in the spring semester are covered thru the summer and need not purchase the insurance again for any summer semester. Students attending Summer sessions but who did NOT attend or pay for the Health Insurance in the Spring semester must purchase health insurance for the summer.

## Fall 2005 Graduate Tuition and Mandatory Fees

All fees subject to change without notice.

Hrs	Tuition		Mandatory Fees					
	Resident	Non Resident	Std Ctr	Std Svc	Int'l Educ	Inci-dental	Records Office	Library
20+	147.50/hr	388.50/hr	25	120	1	150	11	40
19	2802.50	7381.50	25	120	1	150	11	40
18	2655.00	6993.00	25	120	1	150	11	40
17	2507.50	6604.50	25	120	1	150	11	40
16	2360.00	6216.00	25	120	1	150	11	40
15	2212.50	5827.50	25	120	1	150	11	40
14	2065.00	5439.00	25	120	1	140	11	40
13	1917.50	5050.50	25	120	1	130	11	39
12	1770.00	4662.00	25	120	1	120	11	36
11	1622.50	4273.50	25	110	1	110	11	33
10	1475.00	3885.00	25	100	1	100	11	30
9	1327.50	3496.50	25	90	1	90	11	27
8	1180.00	3108.00	25	80	1	80	11	24
7	1032.50	2719.50	25	70	1	70	11	21
6	885.00	2331.00	25	60	1	60	11	18
5	737.50	1942.50	15	50	1	50	11	15
4	590.00	1554.00	15	40	1	40	11	12
3	442.50	1165.50	15	30	1	30	11	9
2	442.50	1092.00	15	20	1	20	11	6
1	442.50	1092.00	15	10	1	10	11	3

## Method of Payment

Students shall be provided with two alternative methods of payment of tuition and mandatory fees for each fall and spring semester for which they are enrolled.

- Full payment of all tuition and mandatory fees prior to the beginning of the semester, or
- Installment Plan - One-half payment of all tuition and fees plus a \$24 installment fee prior to the beginning of the semester, one-quarter payment prior to the start of the sixth class week, and the final one-quarter payment prior to the start of the eleventh class week. There will be a \$10 late fee added for each installment payment not received by the due date. Installment payments are also available online through Student e-Services.

Payment may be made by cash, check or credit card. Payment may be made in person, by mail, online (credit card only) or thru the payment drop box located in the hall next to the cashiers office on the third floor. Credit card payment (Visa, MasterCard or Discover) may be made over the web via UHD's *Student e-services* ([www.uhd.edu](http://www.uhd.edu)) or by fax to 713-226-5267. Please remember that mailed payments must be **received** by the posted payment deadlines to avoid having classes dropped or late fees assessed. UHD does **not** receive mail on Saturday, so payments must be received by Friday for Saturday deadlines.

Summer and minimesters require payment in full prior to the beginning of the semester. There are no installment options available for these semesters.

Health Insurance fees shall be paid prior to the beginning of the semester.

Most financial aid awards will be credited to your account automatically once processing is completed and you are registered for the same number of hours for which you are awarded. It is the student's responsibility to check their fee statement to assure that their funds have been posted to their account before the payment deadline. If the funds have not been posted, the student must make the payment or other arrangements with the cashier officer by the deadline to avoid losing their classes. Student fee statements can be viewed through UHD's *Student e-services* ([www.uhd.edu](http://www.uhd.edu)), the MY PAYMENT option.

Students receiving financial aid equal to, or in excess of, the total amount of tuition and fees prior to the beginning of the semester may not participate in the installment plan. The full payment of tuition and fees for the semester in which they are enrolled must be made upon issuance of that semester's financial aid funds before any excess amounts will be refunded.

Withdrawal from the university, for whatever reason, will not cancel the obligation to pay the full amount of the installment plan. If the amount of tuition and fees credited as a result of withdrawal is less than the remaining balance of an installment plan, the balance remaining is still the obligation of the student. If the credited amount is more than the balance of an installment plan, the remaining credit will be refunded to the student.

Any student who has elected to pay tuition and fees by installment, and who is delinquent in making payment by the final installment due date, is barred from registering at any institution in the University of Houston System until full payment, including delinquent charges, has been made. Each university maintains records and informs other institutions about the status of payments should the student attempt to register for courses or pursue a degree at any other component of the University of Houston System.

An additional default fee of \$50 is collected from any student who fails to make all installment payments by the end of the semester. This fee, in addition to all other amounts due, must be paid prior to the student's registering for courses during a subsequent semester.

## Financial Responsibility

Students are required to meet financial responsibilities to the university.

Students who write checks to the university on accounts with insufficient funds are assessed a \$20 service charge for each such check, regardless of the amount. If a check is returned as a result of bank error, the student must deal with the bank for reimbursement of the \$20 returned check charge paid to the university. If such a check is presented in payment of tuition and fees, the return of the check could also result in possible charges of late fees, and if the check is not redeemed within 10 days, the student may be dropped from all classes.

A student who does not meet financial responsibilities to the university may be subject to withdrawal from classes and may be referred to law enforcement authorities and/or the local credit bureau.

An official transcript shall not be given to or on behalf of a student who is in default on any payment due the university. The student will not be allowed to re-enroll at the university until all past due payments have been made, and a reinstatement charge may be required before enrollment is approved.

## Refunds

All refunds are made in accordance with the following rules and regulations:

### Concurrent Enrollment

Under the provisions of Section 54.062 of the Texas Education Code, the university will refund to students excess tuition paid as a result of being concurrently enrolled at more than one Texas public institution of higher education. Excess tuition applies for students taking only 1 or 2 semester credit hours at UH-Downtown. To qualify the student must:

- register at UH-Downtown after registering at the first institution;
- provide the university proof of being concurrently enrolled and paid at both institutions; and
- provide the university proof of the amount of tuition paid at the first institution.

All concurrent enrollment refund requests must be made in writing at the Business Affairs Office. The refund check will be mailed to the address on file in Enrollment Services.

### Complete Withdrawal

Students who officially withdraw from all university courses may be eligible for a refund of tuition and mandatory fees. Please refer to the current academic calendar for the refund schedule. No refund will be made to a student until full payment has been made on any outstanding balance. All 100% refunds incur a \$15 processing fee. Students who are withdrawing and who have received financial aid should consult the Office of Scholarships and Financial Aid.

### Partial Withdrawal

Students who officially drop some but not all of their courses within the first 12 class days of the fall or spring semester, or within the first four days of a summer session, are eligible for a 100% refund of tuition and fees for the dropped classes. After this period there is no refund for partial withdrawals. Refunds resulting from dropped classes will not be processed until after the ADD/DROP period has ended. Students who are withdrawing and who have received financial aid should consult the Office of Scholarships and Financial Aid.

No refund will be made to a student who has not met all financial obligations, including full payment of installment balances. Refunds will be mailed to the address on the student's record file. If a student received financial aid, the refund may be credited to the appropriate financial aid account. The Registration & Information Bulletin provides specific dates and deadlines.

## Scholarships and Financial Aid

The University of Houston-Downtown offers a variety of financial aid programs to assist undergraduate and graduate students in meeting educational costs. The programs include scholarships, grants, loans and part-time employment, which may be awarded in various combinations and amounts to meet individual student needs. Because funds are limited in many programs, it is important to begin the application process early and complete the necessary applications properly and on time. To receive priority consideration for Supplemental Equal Opportunity Grant and all state grant funds, all necessary applications must be on file in the Office of Scholarships and Financial Aid by April

1 of each year. Most federal and state aid is awarded on the basis of proven financial need rather than academic achievement. Most scholarships are awarded on the basis of academic achievement, talents and special skills rather than proven financial need.

## Estimated Costs

The following are estimated costs for attending UHD full time for the 2005-2006 academic year:

<b>Direct Costs</b>	Resident	Non-Resident
Tuition & Fees (9 hours)	\$3,118	\$7,672
Books and Supplies	\$1,020	\$1,020
<b>Indirect Costs</b>		
Living Expenses		
With Parents	\$4,016	\$4,016
Not with Parents	\$8,222	\$8,222
Transportation	\$3,140	\$3,140

## Financial Aid Programs

UH-Downtown participates in the following federal, state and institutional programs. Most programs have limited funds so early application is encouraged.

### Grants

**Texas Public Educational Grant.** This grant is funded by tuition revenues and is available to both Texas residents and non-residents. Students must demonstrate financial need to be eligible for this grant. Priority will be given to students who enroll at least half-time.

### Work-Study Programs

**Texas Work-Study and Federal College Work Study.** These programs are designed for students who enroll at least half-time who demonstrate financial need. Awards are earned as wages in on- and off-campus positions. Must be a US citizen or permanent resident for federal work-study or be classified as a Texas resident for Texas work-study. Students who have relatives working at UH-Downtown must get clearance from the Office of Scholarships and Financial Aid to show they are in compliance with the university's nepotism policy.

### Student Loans

**Federal Subsidized Stafford Loan.** A low-interest loan with interest subsidies while student is enrolled at least half-time. Must be a US citizen or permanent resident and be enrolled at least half-time to participate. Maximum loan amounts vary with grade level in college. Additional application and loan counseling required.

**Federal Unsubsidized Stafford Loan.** A low-interest loan not based on financial need. Students may defer interest payments while enrolled at least half-time. Must be a US citizen or permanent resident and be enrolled at least half-time to participate. Maximum loan amounts vary with grade level in college. Additional application and loan counseling required.

## Application Procedures

At a minimum, students should complete the Free Application for Federal Student Aid (FAFSA) and the UHD Financial Aid Application. Other forms or documentation may be required to determine eligibility for state and/or federal programs. When completing the FAFSA, students should list UH-Downtown's school code (003612) in Step Six. Students may request a financial aid application packet by calling 713-221-8041. Once a student has begun the application process, the Office of Scholarships and Financial Aid will notify the student of missing forms and/or documentation by mail. Students will also be mailed an award letter when their eligibility for aid has been finalized.

## Other Eligibility Requirements

### UHD Degree-Seeking Student Requirement

To be eligible for financial aid, students must be admitted as a degree-seeking student at UH-Downtown. Transient students (students taking classes to transfer toward a degree pursued at another institution) are not eligible for financial aid at UHD.

### Satisfactory Academic Progress Requirements

In order to receive financial aid, you must make progress toward your degree as defined by the Office of Scholarships and Financial Aid. There are three components to academic progress:

#### Grade Point Requirement

You must achieve and maintain at least a 2.0 cumulative grade point average on all course work attempted. Graduate students must achieve and maintain a cumulative GPA of 3.0.

#### Completion Requirement

You must complete at least 73% of all course work attempted.

#### Time Frame Requirement

You may attempt up to 170 hours without earning a degree. If you have earned your first bachelor's degree, you are allowed 150% of the hours remaining to complete your program. A complete copy of the Satisfactory Academic Progress Policy is available upon request. Please read this policy to see how your progress will be monitored. The Office of Scholarships and Financial Aid is required to review your entire academic record (regardless of the age of the record or whether or not aid was received) to determine if you are in compliance. If you are not in compliance, you will be notified in writing of your denial/suspension and the appropriate appeal procedure.

## Dropping Classes

Your final eligibility for aid will be based on the number of hours for which you are enrolled on the Official Day of Record listed in the Class Schedule. If you register and then drop class(es) prior to that date, your eligibility for aid will be RECALCULATED on your remaining hours as of the Official Day of Record. Since financial aid is released prior to the Official Day of Record, students who receive a financial aid payment based on more hours than those remaining as of the Official Day of Record may be responsible for repaying a portion of any financial aid received. Dropping classes may affect your eligibility for future aid. You should consult the Satisfactory Academic Progress Policy to determine if dropping classes will affect your eligibility for aid.

## Total Withdrawal from School

If you register and then totally withdraw from all classes, your eligibility for aid will be RECALCULATED based on the number of days you attended class. If you totally withdraw from all classes prior to the first class day, you must repay any and all financial aid received. If you withdraw on or after the first class day, you may have to repay a portion of any cash financial aid received. See Return of Title IV Funds below. If you totally withdraw, you should consult the definition of Satisfactory Academic Progress to determine if your withdrawal will affect your eligibility for future aid.

## Return of Title IV Funds

The Higher Education Amendments of 1998 changed the formula for calculating the amount of aid a student and school can retain when the student totally withdraws from all classes. Students who withdraw from all classes prior to completing 60% of the semester will have their eligibility for aid recalculated based on the percent of the semester completed. For example, a student who withdraws completing only 30% of the term will have "earned" only 30% of any Title IV aid received. The remaining 70% must be returned by the school and/or the student. The Office of Scholarships and Financial Aid encourages you to obtain a complete copy of this policy from the office and read it carefully. If you are thinking about withdrawing from all classes PRIOR to completing 60% of the semester, you should contact the Office of Scholarships and Financial Aid to see how your withdrawal will affect your financial aid.

## Academic Scholarships

Academic scholarships at UH-Downtown are intended to recognize and reward outstanding achievement and community involvement. Applicants for most scholarships, therefore, do not need to show evidence of financial need to apply. The application deadline for most UH-Downtown scholarships is April 1 of each academic year. However, the Office of Scholarships and Financial Aid may accept applications at other times during the year if scholarship funds are available. Interested students should contact the Office of Scholarships and Financial Aid as soon as they decide to apply for admission at UHD to find out what scholarships are available. Many academic departments at UHD also award scholarships. Students are encouraged to contact the department of their major to find out what departmental scholarships are available.

## Tuition and Fee Exemptions

### Hazlewood Act for Veterans

State law provides that a veteran who is a legal Texas resident is exempted from tuition and certain required fees, but not from deposits, if the following criteria are met. The veteran:

- has resided in Texas for a period of not less than 12 months prior to the date of registration;
- served in the armed forces or in certain auxiliary services for more than 180 days;

- was a bona fide legal Texas resident at the time of entering such service;
- was honorably discharged (except those who were discharged because of being over the age of 38 or because of personal request);
- has exhausted all veteran's educational benefits;
- is not eligible for federal grants, including federally sponsored grants provided for veterans by the US government; and
- is not be in default on any federal or state student loans.

To obtain this exemption, the veteran must submit an application with attached evidence to the Office of Scholarships and Financial Aid by the Official Day of Record of the term for which the veteran is applying for the Hazlewood benefits. Hazlewood applications must be renewed each year.

### Benefits for Children of Texas Veterans and Children of Disabled Firemen or Peace Officers

Exemption from payment of certain fees also extends to children of members of the armed forces who were killed in action or died while in the service and to the children of disabled firemen and peace officers where injury or death was sustained in the line of duty. Contact the Office of the Scholarships and Financial Aid for proper procedures.

## Academic Resources

### Library

The W.I. Dykes Library is located on the entire fifth floor of the One Main Street building, with additional periodical storage and offices on the sixth floor. It is entered from the Main Street elevators or stairwells. The library has holdings of more than 259,000 books, 37,000 bound periodical volumes, 148,000 microforms, and 1,700 current periodicals and serial subscriptions. The library also has a collection of more than 1,900 AV items, including compact discs and videos that are available for checkout or for listening and/or viewing in the library. Video, compact disc, and audio cassette players are installed for use in the library, if needed. The library has more than 70 computers available for accessing the library's online catalog, using the electronic databases for finding articles or citations, and for searching the Internet. The library's web site is [www.uhd.edu/library/](http://www.uhd.edu/library/).

The UHD Online Catalog lists the books and journals available in the W.I. Dykes Library and at most other University of Houston campus libraries. Books from other UH system libraries may be requested electronically by clicking the blue "request" button in the online library catalog. Access to the catalog and electronic databases from a home computer or from UHD computer labs supports research 24 hours per day. The library's electronic resources include databases that may be searched to identify articles on a topic. Search results can be printed, downloaded to a floppy disk, and/or emailed. Faculty, students and staff can connect to these electronic resources from any location with their e-services ID and PIN. The library network also provides access to the online catalogs of other libraries in the Houston area and to a wealth of Internet resources.

The reference collection in the library contains encyclopedias, dictionaries, almanacs, directories, and many other sources. The full text of

journal, magazine, and newspaper articles in electronic form can be found by using the library's full text databases which include Academic Search Premier, Business Source Premier, Criminal Justice Index, Encyclopedia Britannica, Houston Chronicle, JSTOR, Omnifile, NetLibrary, New York Times and Wall Street Journal. Many additional electronic resources for finding citations or information about a topic can be accessed through the library's web site as well. The library also houses the Texas Education Collection, including teacher editions of select Texas state-adopted textbooks for K-12. This collection is supplemented by holdings in juvenile books.

Reference librarians at the Information Desk offer individual assistance in utilizing the online catalog, print materials, or any of the electronic library resources. In addition, UHD students, staff, faculty and alumni can use the library's "Ask a Librarian" e-mail service to get help with research questions. Tours and classes may be scheduled for group instruction.

Coin and card-operated machines are maintained for photocopying of materials. The library has two computer workstations reserved for visually impaired students. Anyone with special physical or communication needs can ask for assistance from any library service desk or phone the library to schedule an appointment for special services. Study rooms are also available for groups of three or more students. If the W.I. Dykes Library does not own a book or journal article needed by a student, faculty, or staff member, then the library's Interlibrary Loan Department can borrow the material from another library within the country. Interlibrary Loan is primarily a free service. If there will be a charge, permission will be requested before UHD obtains material for you.

The library has additional services for UHD distance students. Just go to <http://www.uhd.edu/library/dised.html> on the library's web site, and you will have access to forms for requesting books and articles, reference assistance, and information on off - campus access to electronic databases.

A UHD identification card is used as the library card and must be presented when checking out materials. The library is open seven days a week during Fall and Spring semesters and Monday through Saturday during Summer semesters. Check with the library for intersession and holiday hours. For reference information call 713-221-8187; for circulation information call 713-221-8186.

## Academic Support Center

The Academic Support Center houses the Math Lab, Reading Center, and Writing Center. Each lab provides one-on-one tutoring with UHD faculty members and peer tutors. The ASC also has computing equipment with learning support software to help students develop mathematical, reading, writing, and THEA skills. The center is located in room 925-North of the One Main Street building and the hours of operation are structured to fit day, evening, and weekend students' schedules. The ASC is open to all currently enrolled UHD students and students may attend as often as they like. The center's web site is located at [www.uhd.edu/academic/support.htm](http://www.uhd.edu/academic/support.htm)

## Computing Services

The University of Houston-Downtown offers state-of-the-art computing equipment and software to its students, faculty, and staff. The 16,000-square-foot Academic Computing Lab houses more than 300 PCs and printers. This facility, which is available to any currently enrolled student, has five electronic classrooms, and special devices to aid disabled students. Academic Computing teaches short courses, develops

documentation and provides group and individual consulting to its constituents.

Special purpose labs are available to students. The Department of Engineering Technology maintains several computer labs for engineering applications. The Department of Computer and Mathematical Sciences has four computer classrooms of PCs for instruction in computer science, mathematics, and statistics. The Department of Natural Sciences has a Science Learning Center that contains two state-of-the-art electronic classrooms, and a Science and Technology Demonstration Laboratory. The College of Business has a classroom for teaching word processing, keyboarding, and computer information systems. The Academic Support Center offers learning support software for individual work in developing reading, writing and mathematical skills. There are over 20 specialized departmental computing labs service subject specific needs.

## Student e-Services

UH-Downtown offers a variety of student e-services on the web that allow students to go online rather than stand in line to perform administrative and academic functions that have traditionally required face to face interaction on campus. UHD's student e-services functions as a one-stop student portal. In addition to providing access to GatorMail (see below) and a range of general information, such as the course schedule and the university catalog, many student-specific functions are available. Students may apply for admission, determine their financial aid status, determine their eligibility for registration, register for classes if they meet certain requirements, view their grades, update their address and other directory information, and obtain information about their computer account.

## GatorMail

All enrolled students are issued a GatorMail email account. Students can obtain their GatorMail username and password via Student e-services ([www.uhd.edu/eservices](http://www.uhd.edu/eservices)). UHD assigns student email accounts as a means of communication between faculty, staff, and students. Students should check their email on a frequent and consistent basis in order to stay current with University-related communications

## Technology Teaching and Learning Center

The Technology Teaching and Learning Center (TTLC) assists faculty to develop and implement interactive teaching and learning technologies that increase the effectiveness of their pedagogy. Offering a wide range of programs, tools, and activities, the TTLC houses five electronic classrooms, a training/teleconference room, an instructional television studio, control booth and editing suite, a faculty development area, a multimedia production lab, an emerging technologies showcase, and an instructional technology library.

The TTLC Group provides web and instructional design services, training, consultation, and support for faculty who develop online courses at UHD. Students interested in taking online courses should visit the online orientation at:

[uhdonline.uhd.edu/uhdonline/orientation/checkitout.htm](http://uhdonline.uhd.edu/uhdonline/orientation/checkitout.htm)

## Multimedia Services/Instructional Television

Multimedia Services/Instructional Television provides instruction and presentation support and media production facilities for faculty, staff and students. Multimedia Services distributes and maintains presentation equipment in classrooms, lecture halls, the Special Events Center, and the Wilhelmina Cullen Robertson Auditorium. The staff assists clients in creating and producing audio, video, photographic, streaming

media and multimedia presentations. Facilities include the television studio, digital editing suites, and training rooms equipped with video-conference equipment.

The instructional television component of Multimedia Services oversees the transmission and operation of all interactive distance-learning classes that connect UHD to off-campus learning sites. They also provide videoconference and satellite downlink services for the university community. Multimedia Services is located within the TTLC in Suite 729-A.

## Academic Policies - Graduate

### Graduate Admission Procedure

Admission to graduate programs is competitive, incorporating a consideration of multiple factors like GPA, standardized test scores, etc. Decisions for admission are made by department graduate committees. Usually deadlines for admission are set by each department. For information on deadlines, please visit [www.uhd.edu/academic/gradprograms.htm](http://www.uhd.edu/academic/gradprograms.htm). Applicants are notified about their status of application and admissions by mail. Appeals of admission denials should be submitted to the appropriate Department Chair, and if necessary, to the College Dean.

### Courses and Course Credit

#### Course Load

A full-time graduate course load during the fall and spring terms is 9 semester credit hours or three courses. For students who are employed 40 hours per week, the recommended load is two courses, or six credit hours. Depending on the program, the regular load for one combined summer session (9 weeks) is 6-9 credit hours. Students who wish to enroll in more than the recommended course load must seek approval from the appropriate academic dean. For further information on graduate course load consult specific master's degree handbooks.

#### Schedule Changes

Schedule changes are made online, through telephone registration and in person and may require approval by an academic advisor. Instructions are found in each semester's Class Schedule.

#### Discontinued Classes

The university reserves the right to discontinue classes or otherwise alter the class schedule. Whenever possible, enrollment in an alternate course is completed through an administrative change form initiated by the department responsible for discontinuing the class.

#### Classification

Students admitted to a graduate program are classified as graduate students. Post-baccalaureate students enrolled in graduate courses are governed by undergraduate policies.

#### Class Attendance

Each department or instructor has policies on class attendance. Regular presence in class is strongly encouraged.

### Transfer Credit

#### Acceptance of Transfer Credit

Students must submit official transcripts from all colleges or universities attended as a part of the admission process. An evaluation will be performed upon acceptance into the university. Course work transferred or accepted for credit toward a graduate degree must represent collegiate course work relevant to the degree, with course content and level of instruction resulting in student competencies at least equivalent to those of students enrolled in the institution's own graduate degree program.

Six semester hours of graduate credit from another accredited institution may be transferred into a degree plan, subject to approval from the graduate degree coordinator. After being admitted into a UH-Downtown graduate program, students should obtain approval from their degree-granting college before taking any courses, with intent to transfer. Students may take up to 9 graduate hours with post-baccalaureate status. However, these courses are evaluated by the department admitting the student, may not be accepted into the specific degree program, and may be limited to 6 hours.

Transfer credit will not be granted for courses in which grades of C or lower have been earned. Students should direct questions concerning transfer credit to their graduate coordinator.

#### Evaluation of Transfer Credit

Transcripts will be evaluated for institutional transfer credit upon admission to a UH-Downtown graduate program.

#### Transferring Credits from Other Countries

Students applying for admission with college credits from other countries must submit an evaluated transcript from a credential evaluation service recognized by the university. Graduate coordinators will consider granting transfer credit based on the recommendations of the evaluating service.

Information and brochures from evaluating services are available at the Office of Admissions.

#### Auditing Courses

To audit a course is to enroll in a course on a noncredit basis. Students wishing to audit courses should contact the Registrar's Office. Students auditing courses pay regular tuition and all other applicable fees as set forth in this Catalog. A change to credit status may not be made after the student has registered to audit a course. Changes from credit status to audit status in a course must be made prior to the end of the Official Day of Record.

### Grading System and Standards

All students are expected to maintain high academic standards throughout their graduate programs. In general, graduate students may not make any more than a certain number of grades of C. Please consult your graduate handbook for additional information. In addition, grades of D or F are grounds for dismissal from the graduate program. All graduate students at UHD are subject to the following policies as well as any policies stated in the handbooks for each degree program. Links to the graduate programs can be found at <http://www.uhd.edu/academic/gradprograms.htm>.

## Academic Honesty

The Academic Honesty Code is embraced by all members of the University of Houston-Downtown academic community and is an essential element of the institution's academic credibility. The Honesty Code states "We will be honest in all our academic activities and will not tolerate dishonesty." The purpose of the Academic Honesty Policy is to deal with alleged violations of the Honesty Code in a fair and consistent manner. The policy is administered jointly by students and faculty. It is each student's responsibility to read and understand the Academic Honesty Policy. It may be found in the Student Handbook for each program.

## Grading System

The following grades are included in the calculation of grade point averages:

Grade*	Grade Points
A Superior .....	4.0
B Above Average .....	3.0
C Average .....	2.0
D Below Average .....	1.0
F Failure .....	0.0

\*Grade descriptions are subject to override by descriptions published in the handbooks for each graduate program.

The following grades are not included in the calculation of grade point averages:

Grade	
A* .....	Non-credit grade
B* .....	Non-credit grade
C* .....	Non-credit grade
I .....	Incomplete
IP .....	In Progress
Aud .....	Audit
S .....	Satisfactory (passing)
U .....	Unsatisfactory (not passing)
W .....	Withdraw

### I (Incomplete)

An incomplete grade is given only when an unforeseen emergency prevents a student from completing the course work and only with the instructor's approval. A grade of I will be changed to a passing grade if the missing work is completed satisfactorily by the deadline set by the instructor but no later than the end of the long semester immediately following the term in which the grade was received. An incomplete grade that is not removed by this deadline becomes an F.

Repetition of a course for which an incomplete grade was received does not affect resolution of the original grade.

An incomplete grade earned in a student's graduating semester is computed as an F in determining grade point average.

### IP (In Progress)

A grade of IP may be given in thesis and capstone courses. In the calculation of grade point average, a grade of IP is treated as a W. To receive credit for a course in which an IP was assigned, a student must register for the course again and earn a passing grade.

### S (Satisfactory)

The grade of S may be earned in thesis and certain other courses. Credit received with a grade of S is not part of the grade point average calculation.

### W (Withdrawal from Courses)

Students will not receive a grade if they withdraw from a course by the Official Day of Record.

Students automatically receive a grade of W for any course from which they withdraw after the Official Day of Record but before the end of Thursday of the 10th week during a long term and Thursday of the fourth week during a summer term.

Official Day of Record and withdrawal deadlines are published in the University Calendar found in the Class Schedule.

Class days are defined as days on which the university has one or more classes scheduled, not the days for which an individual student is scheduled for his/her particular classes.

Additional policies applicable to graduate students are published in the specific master's degree handbooks.

## Grade Point Average (GPA)

The grade point average is a measure of a student's academic achievement. Grade point averages are computed by multiplying the grade point value by the number of credit hours in each course, and then dividing the sum of all grade points obtained by the total number of hours attempted. The following formula represents the method of computing grade point average:

$$\frac{\text{Total Number of Grade Points}}{\text{Total Number of Semester Hours}} = \text{Grade Point Average}$$

The number of grade points earned for each course equals the hour credit value of the course multiplied by the points awarded for grades received. Grades of I, S, U, IP and grades marked with an asterisk (\*) in the table above are not counted in the calculation of the grade point average, except for graduation. Grades of I will be calculated as F grades in determining grade point average for graduation.

Graduate students must meet a graduation requirement of a minimum 3.0 grade point average.

## Appeal of Grades

Any grade which a student believes to be in error should be appealed, first to the instructor, then to the appropriate department chair, and finally to the appropriate dean. If an appeal is not made within one calendar year after the close of the semester in which the grade was received, the grade will be considered final and no appeal will be heard.

## Repeated Course Policy

The policies applicable to graduate students covering repeated courses are published in the specific degree program handbooks.

## Academic Probation and Suspension

In general, grades of D and F are grounds for suspension from the graduate program. Students whose GPA falls below 3.0 will be placed on academic probation and must continue to obtain a semester GPA of 3.0 or above while on probation. Failure to do so will result in suspension. Please note that policies applicable to graduate students

covering academic probation and suspension are published in the specific degree program handbooks.

## Student Records

### Transcripts

Requests for official or student copies of transcripts are made to the Registrar's Office. Requests for UHD transcripts may be made online or by mail. All requested transcripts will be processed within 2 business days during the semester and within 3 business days during peak registration and grade processing periods. Please note that business days exclude University holidays and/or weekends

Any official transcripts submitted to UHD from other institutions become the property of UHD. If you have any questions or have not received your transcript, please contact the Registrar's Office.

### Release of Student Records

UHD has a policy in conformity with the Family Educational Rights and Privacy Act (FERPA) covering the release of student records.

Student rights include the following:

1. Students have the right to inspect and review their education records within 45 days of the day the university receives the request.
2. Students have the right to request amendment of their education records that they believe are inaccurate or misleading.
3. Students have the right to consent to the disclosure of personally identifiable information in their education records, except to the extent that FERPA authorizes disclosure without consent.
4. Students have the right to file a complaint with the US Department of Education concerning alleged failures by the university to comply with the requirements of FERPA.

### Directory Information

At its discretion UHD may provide directory information to the general public without student consent. Directory information is defined by FERPA as follows:

- name
- address
- telephone number
- e-mail address
- date and place of birth
- dates of attendance
- most recent previous education institution attended
- major and minor fields of study
- degree/awards received
- participation in officially recognized activities

Students may request that directory information be withheld from the public by contacting the Registrar's Office at any time during the semester. Such requests must be made in writing and will remain in place until the student directs the office in writing that it is to be removed.

### Disclosure of Education Records

In accordance with FERPA and at its discretion, UHD will disclose information from a student's education records without the written consent of the student to school officials who have a legitimate educational

or administrative interest in the records. A school official is defined as a person employed by the university in an administrative, supervisory, academic, or support staff position (including the university's police department and health care staff); a person or company with whom the university has contracted (such as an attorney, auditor, or collection agent); a person serving on the Board of Regents; or a person assisting another school official in performing his or her official duties.

### Procedure for Inspecting Education Records

A student has the right to inspect his or her education records and challenge the contents. To review records, a student must make a request in writing to the Registrar's Office. The request must identify the record or records he or she wishes to inspect.

### Procedure for Amending Education Records

If a student believes the information in his or her education record contains information that is inaccurate, misleading, or in violation of the student's rights of privacy, the student should submit a written request for amendment to the registrar. The request should clearly identify and correct the inaccuracy. The university will notify the student within a reasonable time regarding the request. If the request for amendment is denied the student has the right to a hearing. This procedure does not govern grade appeals.

### Change of Name and Address

Any change in name or address must be reported to the Registrar's Office and to the Financial Aid Office if applicable. Addresses may also be changed online at [www.uhd.edu](http://www.uhd.edu). Name changes must be supported by legal documentation.

### Graduation under a Specific Catalog

A student usually graduates under the degree provisions of the Catalog in effect at the time of his or her first completed term of enrollment, where enrollment is defined as registration for and completion of at least one course. Students have the option of graduating under the Catalog in effect at the time of their major declaration or any subsequent Catalog. If degree requirements change during the time of the student's enrollment, the student may be required to meet the new degree requirements if the number of hours the student must take has not increased.

Exceptions:

- No Catalog more than 10 years old may be used (unless specified otherwise in the student handbook for the student's graduate degree program).
- Students who interrupt their program for more than two consecutive long semesters for reasons other than military service shall be governed by the Catalog in effect at the time of reentry to the university.
- Students whose enrollment is interrupted by military service must re-enroll within one year from date of separation from the service and no more than five years from the beginning of military service in order to remain under the provisions of the Catalog in effect at the time of original enrollment at the university.
- Students forced to withdraw for adequate cause before completion of their degree may upon readmission petition to graduate under the Catalog in effect at the time of original enrollment.
- Students who change their major shall be governed by the Catalog in effect at the time of the change.

## Application for Graduation

Any student who plans to graduate from the University of Houston-Downtown must file an application for graduation with the degree-granting college and with Enrollment Services. Deadlines for filing applications and paying fees are announced in the calendar published in each Class Schedule. A graduation fee is required at the time of filing the application. If the student does not complete the requirements for the degree, application procedures must be repeated.

## Commencement Exercises

Only students who complete all degree requirements and file an application for graduation with the degree-granting college may participate in the commencement exercises. The final decision on eligibility for graduation and participation in commencement exercises rests with the appropriate academic dean.

Students participating in commencement must wear academic regalia. Arrangements for obtaining the appropriate academic regalia may be made through the university bookstore. Deadlines for ordering and paying for regalia are announced for each commencement.

## Student Services and Enrollment Management

The University of Houston-Downtown's Division of Student Services and Enrollment Management, under the direction of the Vice President, offers a wide variety of services, programs and activities designed to augment the academic experience of students.

The division includes the Office of Student Services and Enrollment Management, Admissions, Registrar, Career Services, Student Health Services, Scholarships and Financial Aid, Student Activities & Events, Sports & Fitness, and Testing Services.

## Office of Student Services and Enrollment Management

Suite 390-South, 713-221-8100

The Office of Student Services and Enrollment Management serves as a resource to students by distributing information, assisting with problem resolution and interpreting university policies, rules and procedures. This office is also responsible for carrying out the university's student discipline policies. Among the information Student Services and Enrollment Management provides to students and the university community are the UHD Student Handbook, UHD Registration & Information Bulletin and the Campus Information Board.

## Office of Admissions

Room 350-South, 713-221-8522

The Office of Admissions provides information regarding the university to all prospective students and facilitates the admission process. The office is committed to providing quality service and assistance to students in all phases of the admissions process and to ensuring that their admission experience is a positive one.

## International Admissions

Within the Office of Admissions, the Office of International Admissions supports the academic and cultural experience of international students at the University of Houston-Downtown. The office processes admission applications, provides immigration counseling, and offers personal assistance whenever possible.

## Graduate Admissions

The office of Graduate Admissions accepts applications for all UHD graduate programs and provides program-specific requirements, entry dates and application deadlines.

## Transfer Center

The Transfer Center serves as the UHD entry point for transfer students who are interested in attending UHD. The center provides ready access to information that will help students make important decisions about completing their college career. The center also provides walk-in assistance and tours of the UHD campus.

## Registrar

Suite 330-North, 713-221-8999

The Registrar's Office maintains all student academic records including registrations and grades. The responsibility of this office is to provide valuable and reliable service and academic data to all UHD students, faculty, and staff as well as to state and federal agencies. The Registrar's Office issues transcripts and diplomas, and certifies loan deferments and Veterans' benefits. It also handles assigning classroom space. Students should contact this office in addition to the Financial Aid Office to officially notify the university of a name change when applicable.

## Veteran's Affairs

Veteran's Affairs assists veterans, reservists, guardsmen, and dependents of disabled or deceased veterans of the U.S. Armed Forces. Over 200 veterans are currently pursuing a degree at UH-Downtown. This area of the Registrar's Office ensures that proper paperwork is completed, certified, and filed with the Department of Veterans Affairs so that payment of education benefits can begin. Veterans Services does not, however, determine eligibility for benefits. Please visit UHD's VA representative to better answer any questions and or concerns.

## Scholarships and Financial Aid

Suite 330-North, 713-221-8999

The UHD Office of Scholarships and Financial Aid offers a variety of financial aid programs to assist undergraduate and graduate students in meeting educational costs. The programs include scholarships, grants, loans and work-study, which may be awarded in various combinations and amounts to meet individual student needs. Because funds are limited in many programs, it is important to begin the application process early and complete the necessary applications properly and on time. The priority deadline for Fall is April 1 of each year.

Most federal and state aid is awarded on the basis of proven financial need rather than academic achievement. Most scholarships are awarded on the basis of academic achievement, talents, and special skills rather than proven financial need.

## Career Services

Suite 370-North, 713-221-8980

On the cutting edge of electronic technology, Career Services offers support, information, and counseling to students and alumni who wish to explore their career options. This office helps students develop academic and extracurricular programs to support and enhance career options through such tools as interest inventories and temperament indicators, available both in the Career Services Resource Center and on the Internet. An online resume bank and job-listing site, eRecruiting, lends itself well to the proactive, self-directed job search of today. Information about labor market and salary trends and career options are also available. In addition, UHD's Field Experience Program offers qualified students the opportunity to integrate classroom learning with work experience, granting up to six semester credit hours to students working in their fields of study. Information regarding this program, as well as other services, is available in the Career Services office.

## Student Health Services

Suite 380-North, 713-221-8137

Student Health Services focuses on health promotion, disease prevention, and treatment of minor illnesses and injuries. Clinicians provide the same primary care found in most physicians' offices (including women's health) and offer referrals to specialists in the community when necessary. Routine laboratory services, pregnancy testing, and confidential HIV testing and counseling are provided. The pharmacy fills in-clinic prescriptions at low cost and offers some non-prescription medications for sale. Nurses provide counseling on a wide variety of health issues and offer special screenings and services throughout the year. Appointments are recommended for these services. In addition, educational brochures on a variety of health-related subjects are available as are applications for student health insurance.

## Student Assistance Program

Suite 390-North, 1-866-802-8553 toll-free 24 hrs.

The Student Assistance Program (SAP) is designed to help students maximize their health and effectiveness at home, school or work. Through this program, students receive confidential, personal support for a wide range of issues, from everyday concerns to serious problems.

All records, including medical information, referrals and evaluations, are kept confidential in accordance with federal and state laws.

Office Hours: Monday 7:30 am-2:00 pm; Tuesday 8:30 am-3:30 pm; Wednesday 1:00 pm-8:00 pm; Thursday 12:30 pm-7:00 pm; Friday-closed.

If assistance is needed when the office is closed, CALL TOLL-FREE (24 hrs) 1-866-802-8553; 1-866-216-9926 TDD or log on to [www.liveandworkwell.com](http://www.liveandworkwell.com), access code UHDSAP.

## Student Activities and Events

Suite 204-South, 713-221-8573

The Office of Student Activities & Events encourages and challenges students to become involved in non-academic components of campus life that enrich their campus experience, offer opportunities to develop

leadership and other skills and allow them to make friends from a variety of educational and cultural backgrounds. The Office of Student Activities & Events coordinates the functions of the Student Government Association, Campus Activities Board and a variety of clubs and organizations. Student Activities & Events is also responsible for Crossroads Festival, Cultural on the Bayou, New Student Orientation Program, One Main Event, UHD Activities Day, Project Leadership UHD and the Campus Information Center.

### Campus Information Center

The Campus Information Center, located in suite 355-North, serves as a resource to visitors to campus, providing information about UHD and the surrounding community. Students are encouraged to utilize the Center for information regarding their admissions and registration status, financial aid, or other questions about attending classes at UHD.

The Campus Information Center is open Monday-Thursday, 8 am-6 pm, Friday 8 am-5 pm and Saturday, 9 am-12 noon.

### Locker Rental

UHD offers a 12 x 35 x 18 combination locker on either the 2nd and 4th floor of the One Main Building. Lockers are rented at a cost of \$15 for the entire semester and can be renewed at the end of the semester.

### New Student Orientation

New Student Orientation introduces new students to the academic community at UH-Downtown. It is designed to meet the special needs of all students entering the university for the first time and to help make the new student's transition to the university a smooth and enjoyable one. New Student Orientation programs are offered for the summer, fall and spring semesters. Orientation also offers currently enrolled students the opportunity to develop their leadership skills and make new friends by becoming leaders in the program.

### Preventing the Abuse of Substances and Self (PASS)

PASS provides confidential services aimed at prevention of alcohol and drug abuse and other addiction-related behaviors. Free substance-abuse screening, individual counseling, group counseling, workshops, outreach, consultation and referral services are offered. The PASS counselor is a certified alcohol and drug abuse counselor and may be contacted in person or by calling the PASS confidential line at 713-221-8989. Interested students may join the PASS Peer Educators, a volunteer group devoted to fighting the war on drugs.

### Project Leadership UHD

Project Leadership UHD is a seminar-based, participatory program sponsored by the Office of Student Activities and Events in which UHD students are challenged to develop their strengths and skills as collaborative leaders. Project Leadership UHD features a core curriculum of required seminars, including the annual Student Leadership Conference, and a commitment to community service, and an elective curriculum of additional seminars. Students who complete the core curriculum will be awarded a Project Leadership UHD certificate at an awards ceremony to be held in the Spring.

### Student Government Association

The Student Government Association (SGA) is the representative body for all UHD students. SGA is responsible for nominating students to serve on university committees and for chairing the Council of Organi-

zations, which is the representative body for all clubs and organizations. SGA is involved in policy development activities through its participation in the shared governance process.

### **Student ID**

Your student ID card identifies you as a student of UHD and is required for various activities, services, and academic functions. You will need an ID to check out library books, make an appointment at the health center, use the student life center facilities or use the computer labs. Your UHD student ID will also allow you to borrow books from any library in the University of Houston System. There is no fee for your initial student ID; however, there is a small charge to have it replaced if lost or stolen. ID cards can be obtained from the Office of Student Activities & Events.

### **Student Organizations**

The varied personal and professional interests of UH-Downtown students are aptly reflected in the range of active clubs and organizations on campus. Professional organizations and departmental clubs provide opportunities for individuals with similar interest and goals to meet. There are also social clubs, cultural organizations and special interest groups. All clubs offer student educational opportunities as well as personal enjoyment.

### **Student Publications**

*The Dateline* is a student-run newspaper. With guidance from a faculty advisor and the Student Publications Advisory Committee appointed by the president, students are provided with a wide range of experience in journalism.

*The Bayou Review* is a literary journal, with biannual publication of poetry, essays, reviews, photos and drawings. The journal seeks to promote arts and humanities at UHD and to provide a forum for students who have an interest in creative writing.

### **Volunteer Center**

UHD's Volunteer Center promotes public service and organizes support for volunteer opportunities in the community. The UHD Volunteer Center also serves as a clearinghouse of volunteer opportunities for UHD student organizations, individual students, faculty and staff.

## **Sports and Fitness**

Student Life Center, 713-221-8225

Sports and Fitness provides members with programs and facilities that offer vigorous, fun-filled, health-promoting, physical activity conducive to wellness and personal development. Through a well-equipped recreational facility, fitness programs, intramural sports and sport clubs activities, members will be motivated to embrace a healthy life-style, which may ultimately enhance their quality of life.

### **Membership**

The programs and services of Sports and Fitness are open to all UHD students, faculty and staff at no additional fees. UHD Alumni Society members may purchase a Sports and Fitness Membership at an annual \$60.00 fee.

### **Jesse H. Jones Student Life Center**

The three-level, 30,000-square-foot Jesse H. Jones Student Life Center includes two ball courts equipped for basketball, volleyball, and badminton; a multipurpose studio designed for aerobics and martial

arts; and a fitness center with state-of-the-art weight equipment and cardiovascular units. Lockers and showers are available.

### **Fitness Programs**

Fitness programs are offered at various times throughout the week from certified instructors. Programs include: Aerobics, Karate, Tai Chi, Tae Kwon Do, Yoga, Hip Hop, and Latin Dance. Personal trainers are available to members for a nominal fee. The initial fitness assessment is free of charge.

### **Intramural Sports**

Intramural sports programs are designed to provide opportunities for UHD members to participate in organized sports activities. Individual and team sports are offered in over 15 different sports. Leagues are created for competitive and just-for-fun participants alike, and there are several activities where men and women team-up for co-recreational sports.

### **Sport Clubs**

Sport Clubs provide members with opportunities to share common interests and pursue active involvement and improvement in a sport or activity. Clubs are encouraged to represent the university at local, regional and national competitions.

## **Testing Services**

Suite 280-South, 713-221-8027

To support new and current students, Testing Services personnel administer UH-Downtown, state and national tests. Local prepared tests include the Writing Proficiency Examination and the foreign language (Spanish) placement examinations. Several national tests are provided by testing personnel, including the General Education Development (GED), College Level Examination Program (CLEP), Law School of Admission Test (LSAT), Medical College Admission Test (MCAT), Texas Higher Education Assessment (THEA), American College Testing Assessment (ACT) and the SAT I and II. Registration deadlines are about one month prior to test dates. Registration information and forms for most tests are contained in test bulletins available in Testing Services.

The ACCUPLACER/WritePlacer exam, one of the approved Texas Success Initiative (TSI) assessments recommended to new college freshmen, is offered by Testing Services to UHD students only.

## **General Information**

### **Student Parking**

Student parking is available at UH-Downtown in four different areas: the Daly Street Lot (North Main at Daly), the Shea Street Lot (North Main at Shea), the Naylor Street Lot (North Main at Naylor) and the Washington Street Lot (Washington at Travis and Washington at Louisiana). Shuttle bus service is available from the Daly Street Lot, providing service at regular intervals to the One Main Building. Students who park in any UH-Downtown parking lot are required to register their vehicles with the Parking Office and obtain a permit to display on the vehicle. The university reserves the right to control the availability of student parking areas to meet the demand for parking for special events. The parking fee is subject to change by the Board of Regents.

## Dining Facility

Dining facilities are located on the third floor of the Academic Building. Breakfast and lunch items are served Monday through Saturday. An evening meal is available Monday through Thursday after 4:00 pm during the Fall and Spring semesters. The food court offers home-cooked entrees with vegetables and rolls or cornbread, fish, chicken and vegetable wraps, rotisserie chicken, Italian foods, sandwiches, a grill, pre-packaged salads, a Taco Bell and a variety of desserts.

## Bookstore

The upper level (third floor) of the university bookstore is located near the Main Street entrance of the One Main Building. It offers school supplies, clothing, insignia items, and snacks. The lower level (second floor) houses new and used textbooks and offers postal services including purchasing stamps, mailing letters in the US, and shipping packages in the US via metered mail, certified mail, return receipt and other special shipping options.

## O'Kane Gallery

The Harry W. O'Kane Gallery, established in 1970, was made possible by gifts from Harry W. O'Kane, Mary W. Bingman, and the Humphreys Foundation. Gallery Director, Mark Cervenka, and the O'Kane Gallery Committee annually select five to six exhibitions of artworks by emerging, established, and historical artists, that meet the diverse interests of the students, faculty, and staff of the University of Houston-Downtown and the downtown Houston community. Exhibitions in all media provide educational support to various university courses and to nearby schools, while the gallery, itself, functions as a site for university forums, meetings, and receptions. Exhibitions are free and open to the public. For hours and information call 713-221-8042.

## O'Kane Theatre

The Harry W. O'Kane Theatre, established in 1970, was made possible by gifts from Harry W. O'Kane, Mary W. Bingman, and the Humphreys Foundation. UH-Downtown presents one theatrical production each long semester in this intimate 90-seat facility. Participation is open to students, faculty, staff and alumni.

## Weekend College, Distance Learning, And Off-Campus Programs

To meet the needs of its busy students, UHD strives to offer courses at locations, in formats and at times that insure broad flexibility for students to pursue their degrees. Courses are available online via the internet and through tape purchase programs. The Weekend College provides opportunities for students who can only take courses on the weekend. And for students who live or work in the suburban Houston areas, UHD offers programs at UHS at Sugar Land, UHS at Cinco Ranch, and The University Center in The Woodlands. Courses taken off-campus may apply to any UHD degree program in which they are ordinarily accepted. Students enjoy the ability to tailor their schedule to meet individual needs by taking courses at multiple locations or using multiple formats.

Students taking off-campus courses (online, tape purchase, instructional television or at one of the off-campus locations) may be assessed an additional fee. Specific details about these fees can be found on p. 6 of this Catalog, and are also available on the UHD website ([www.uhd.edu](http://www.uhd.edu)) and in the *Class Schedule*.

## Weekend College

The Weekend College gives students the opportunity to complete their college degree by taking classes on Friday evenings or Saturdays. Students have a choice of two degree programs, the Bachelor of Business Administration with major in General Business or Purchasing and Supply Management and the Bachelor of Science in Interdisciplinary Studies.

Course offerings in the Weekend College are scheduled to help a student who already has 60 hours of credit to complete a degree program. Although there is a strong upper-level course focus, some freshman- and sophomore-level courses are also offered.

## Off-Campus Programs

### Online Courses

[www.uhdonline.uhd.edu](http://www.uhdonline.uhd.edu)

The rapid expansion of access to the Internet has created new opportunities for meeting UHD students' educational needs. UHD offers a growing selection of courses delivered over the web in support of degree programs. The courses are organized to provide students with a variety of activities designed to enhance the educational experience while providing the student with flexibility in taking the course. Students generally work within defined time frames for completion of course modules, and they often have the opportunity to interact directly in real-time with fellow students and their professor through chats and bulletin board discussions.

### Telecourses

To give students more flexibility in arranging their schedules, UHD offers a selection of telecourses, presented in a series of video segments and accompanied by specially prepared academic materials. Students may check out tapes from the UHD library. Some telecourses are also broadcast on the Houston Access station. Registration may be done by phone or in person, just as for any other UHD course. Students enrolled in a telecourse may be required to attend an orientation session.

### UHS at Sugar Land

[www.sugarland.uh.edu](http://www.sugarland.uh.edu)  
14000 University Blvd.  
Sugar Land, Texas 77479  
281-275-3300

William O'Neill, UHD Coordinator  
281-275-3323  
email: [O'Neill@uhd.edu](mailto:O'Neill@uhd.edu)

In April 1996, the Texas Higher Education Coordinating Board granted approval to the University of Houston System to form a partnership among the four UH System universities (University of Houston, UH-Downtown, UH-Clear Lake, and UH-Victoria), Houston Community College System, and Wharton County Junior College to begin offering course work leading to 29 bachelor's and master's degrees.

The two community college partners offer lower-division courses; the UH System universities offer junior, senior, and master's courses. Courses leading to a degree may be offered by faculty from more than one university, but students register with the university that awards the degree they are pursuing. Instruction is delivered in several forms: live on-site; interactive TV on-site; video tape on-site; videotape purchased for home viewing; KUHT-TV Channel 8 at home; and online.

Degrees offered by UH-Downtown include the Bachelor of Business Administration with majors in General Business, Accounting, Finance, Management and Marketing; the Bachelor of Arts in Interdisciplinary Studies with elementary certification; the Bachelor of Science with majors in Computer Science, Criminal Justice, and Interdisciplinary Studies; and the Master of Science with major in Criminal Justice.

### **The University Center in The Woodlands**

[www.tuc.edu](http://www.tuc.edu)

The University Center  
3232 College Park Drive  
The Woodlands, Texas 77381  
936-273-7510

Louis Evans, UHD Coordinator  
936-273-7519

The University Center in The Woodlands is a partnership of six universities including the University of Houston-Downtown and the University of Houston, and the North Harris Montgomery Community College District. Degrees offered by UHD include the Bachelor of Science in Interdisciplinary Studies, the Bachelor of Business Administration in Marketing, the Bachelor of Business Administration in Finance, and the Bachelor of Business Administration in Computer Information Systems.

Students complete lower-level course work at one of the five colleges of the North Harris Montgomery Community College District. UHD offers the junior and senior courses leading to the degree. As at UHS-Sugar Land, instruction is delivered in several forms: live onsite; interactive TV on-site; video tape on-site; video tape purchased for home viewing; KUHT-TV Channel 8 at home; and online.

### **UHS at Cinco Ranch**

[www.cincoranch.uh.edu](http://www.cincoranch.uh.edu)  
4242 South Mason Road  
Katy, Texas 77450  
832-842-2800

The newest addition to off-campus locations is the University of Houston System at Cinco Ranch in West Houston. UHS-CR is similar in organization to UHS at Sugar Land. It is a partnership of the four UH System universities (University of Houston, UH-Downtown, UH-Clear Lake, and UH-Victoria) and Houston Community College System.

Degrees offered by UHD include the Bachelor of Business Administration with majors in General Business, Accounting, Finance, Management, and Marketing; and the Bachelor of Science in Interdisciplinary Studies. Students complete the lower level requirements for the undergraduate degree at one of the HCC System campuses. UHD provides the junior and senior level courses required by the degree on-site at the Cinco Ranch location. As at the UHS Sugar Land and The University Center, instruction is delivered in several forms: live on-site; inter-

active TV on-site; video tape on-site; video tape purchased for home viewing; KUHT-TV Channel 8 at home; and online.

## **Continuing Education and Professional Development**

Continuing education and training are provided through three units: the Applied Business and Technology Center, the English Language Institute and the Criminal Justice Training Division (see description in the Criminal Justice Department's section of this Catalog).

### **Applied Business and Technology Center**

Room 606-South, 713-221-8032

The Applied Business and Technology Center (ABTC) is dedicated to responding to the needs of business and industry. With continuing changes in technology, jobs can become obsolete almost overnight. The many changes that are emerging in the workplace make lifelong education a necessity, not a luxury.

- Hands-on training courses range from entry to advanced levels. The ABTC is an Authorized Premier Autodesk training center offering classes related to AutoCad and 3D Studio Max, Microsoft Authorized Academic Training Program partner offering training classes required to become a Microsoft Certified Systems Engineer (MCSE), and Oracle Academic Initiative partner offering training programs related to Oracle database. In addition, hands-on training is provided on MicroStation, several programming languages and various business applications.
- The center has an extensive consulting service that customizes courses to meet special industry requirements. Area corporations and agencies often contract with the center to provide their training needs in business and technology. In addition, national and foreign corporations often contract with the center to deliver services throughout the United States and abroad.

### **English Language Institute**

Room 606 South, 713-221-8047

The English Language Institute (ELI) at the University of Houston-Downtown is a noncredit English language program for international students, permanent residents and US citizens who wish to improve their English language proficiency. The ELI is a member of the American Association of Intensive English Programs (AAIEP) and NAFSA: Association of International Educators. Its instructors are trained and experienced professionals in the delivery of post-secondary English language instruction. The student population is international in makeup and ranges from 80-150 students per session. Most students have graduated from high school or hold bachelor's degrees. Two programs are offered at the ELI --an Intensive English program that focuses on academic preparation with a conversational component, and a Business English program that offers English language and business-oriented cultural preparation for the business world. In addition, the ELI develops individual English language learning programs for companies and organizations both here and abroad.

The ELI's Intensive English program is a seven-level program that emphasizes preparation for university academic studies through course

work in listening, speaking, reading, writing and grammar. Each session offers 130 hours of class instruction and 130 hours of voluntary laboratory study. The program is supported by a computer laboratory with the latest English as a Second Language software and by a SONY language laboratory. Academic content and materials help initiate students into academic study and language usage. Although the ELI does offer an afternoon Test of English as a Foreign Language (TOEFL) preparation course for an extra fee, ELI graduates who pass the exit test may attend UHD academic classes without a TOEFL score. In addition, ELI graduates receive three hours of UHD elective credit toward their degree.

The ELI Business English program is a four-level program designed for trainees with at least an intermediate proficiency in English. Trainees study the idiomatic language of business, the language of business meetings, the language and method of business presentations, cross-cultural communication, and business writing. Each session offers 145 hours of class instruction, 20 hours of required laboratory, and 95 hours of voluntary laboratory study. The program is supported by a computer laboratory with the latest Business English software, by a SONY language laboratory, and by a video library of international business scenarios.

Cultural and social activities are an important aspect of the ELI program. Students and trainees from other countries are given the opportunity to explore U.S. culture while learning English and are given opportunities to practice their English with native speakers.

## Special Programs

### Study Abroad Programs

The University of Houston-Downtown is affiliated with the American Institute for Foreign Study, which offers year-long and semester-long programs in Argentina, Australia, Austria, the Czech Republic, England, France, Italy, Russia, Spain, and South Africa. UH-Downtown students may also be eligible to participate in selected study-abroad programs offered through other universities. There are other foreign travel options for students who are not interested in going abroad for a full term of foreign study. Faculty-led trips to foreign countries are occasionally offered in conjunction with various academic classes taught at UHD. Recent faculty-led programs have visited Taiwan, Paris, China, and London.

All currently enrolled UH-Downtown students planning to take part in a UHD sponsored or approved study abroad program are eligible to apply for financial support from the International Education Student Fee Fund. A limited number of grants up to \$2,000 may be available to help supplement the cost of a study abroad program. Information on study abroad programs, scholarships and grants is available in the Provost's Office, Room 950-South.

### Office of Disability Services

Room 409-South, 713-226-5227

The Office of Disability Services meets the special needs of students with disabilities in the university. These services are designed to assist students and instructors with placement testing; priority registration and scheduling; academic advising and counseling; and testing accommodation, including taped and enlarged tests, and proctored, ex-

tended-time testing. In addition, staff members advise instructors on classroom accommodations, arrange tutoring services, and serve as liaison between students with disabilities and faculty and/or community agencies.

Section 504 of the Rehabilitation Act of 1973 stipulates that students with disabilities must be accommodated so that they may achieve at the level of which they are capable. Detailed information may be found in the *Disabled Requirements Handbook* of the Federal Programs Advisory Service, US Department of Education. Additional information is available in the Office of Disability Services.

## Humanities and Social Sciences

### COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

**Susan K. Ahern**, PhD, Dean  
**Robert L. Jarrett**, PhD, Associate Dean  
 Room 1015-South, 713-221-8009

UH-Downtown's College of Humanities and Social Sciences offers the Master of Science in Professional Writing and Technical Communication. It also offers graduate courses in support of the Master of Arts in Teaching degree offered by the Department of Urban Education.

#### Department of English

**William Gilbert**, PhD, Chair  
 Room 1045-South, 713-221-8013

##### Faculty

Professors:	Birchak, Dressman, Harned, L. Thomas
Associate Professors:	Ahern, Cheng-Levine, Chiaviello, Creighton, Cunningham, Dahlberg, Farris, Gilbert, Jarrett, Jennings, Moosally, Pavletich, Sullivan, T. Thomas
Assistant Professors:	Blight, Davidson, Garcia, Goleman, Jackson, M. Johnson, Kannenberg, Kintzele, Laity, Schmertz, Shea, Turner, Walker
Instructors:	Kendall-Roundtree
Lecturers:	Canetti-Rios, Coblenz, Corrigan, Fadely, Kuzmick, Rubin-Trimble, C. Smith
Emeriti:	Bartholomew, Franks, Levy

### Master of Science

#### Major in Professional Writing and Technical Communication

**Molly K. Johnson**, PhD, Coordinator  
 Room 1045-South, 713-221-8013

The Master of Science in Professional Writing and Technical Communication, an outgrowth of our well-established undergraduate program in Professional Writing, will provide graduates with writing, design, and management skills based on rhetorical principles. Students will gain publication and production skills, study project management and the ethical and global implications of professional communication, participate in research, conduct audience analyses and usability tests, and create web sites and on-line help.

This program is valuable for a range of candidates:

- Professional writers seeking promotion to managerial positions or interested in teaching technical writing in high schools or community colleges
- Science and technology, public relations, or corporate training professionals with the goal of expanding employment options
- Undergraduates interested in an applied master's level degree, either to increase their employability or to pursue a doctoral degree in technical communication

##### Program Objectives

Students graduating with an MS in Professional Writing and Technical Communication will demonstrate professional-level skills or knowledge in the following areas:

*Document production:* writing, editing, and delivering documents in the various print and electronic genres of professional communication.

*Rhetorical analysis:* identifying, assessing, and articulating the theoretical principles that underlie rhetorical choices in professional writing. Students will demonstrate these skills in the analysis, design, and production of professional communication documents.

*Ethical and global awareness:* analyzing the ethical and global implications of professional communication.

*Research methodologies:* conducting research in technical and professional communication, including audience analysis and usability testing.

##### Admission

Admission is competitive and selective. Applicants must demonstrate that they possess the abilities, interests, and qualities necessary to successfully complete the program and the potential to contribute to the fields of professional writing or technical communication. Applicants seeking admission will provide the following application materials for review by the Graduate Curriculum Committee:

- Official transcript showing a baccalaureate degree from an accredited university
- Official transcripts showing GPA from all colleges or universities previously attended. (As admission to the degree program is competitive, candidates with a cumulative GPA of 3.0 or higher will be preferred.)
- Graduate Record Exam (GRE) scores
- Personal application statement and resume
- Academic or professional writing sample (1-3 documents totaling 2500 words or more)
- Three letters of recommendation and recommendation forms from individuals acquainted with the applicant's work and academic potential.
- Test of English as a Foreign Language scores if graduate of a university in which English is not the native language (minimum score of 550 with section scores of 50 or higher).

The Graduate Curriculum Committee will not review a candidate's application until the file contains all of the items listed above.

### Admission Process

The Graduate Curriculum Committee will evaluate applications using a matrix based on GPA, GRE score, relevant course work or experience, recommendations, and other written materials in the applicant's file. The Graduate Curriculum Committee will use the results of this evaluation to determine if an applicant is admitted. The Graduate Coordinator will notify students, in writing, of the committee's decision.

### Degree Requirements

The Master of Science in Professional Writing and Technical Communication requires a minimum of thirty-six semester hours that include a choice of thesis or capstone project. All students must complete successfully a graduation portfolio and an oral defense of the portfolio.

12 hours	Required Core Courses
18 hours	Elective Courses
6 hours	Thesis or Capstone Project
<hr/>	
36 hours	Required

### Thesis or Capstone Project Options

Students will choose either the Thesis or Capstone Project option.

*Thesis option:* Candidates opting for the thesis must complete 3 hours of thesis, 3 hours of directed research practicum, and oral defenses of the thesis and graduation portfolio.

*Capstone Project option:* Candidates opting for the capstone project must complete 3 hours of capstone project, either 3 hours of directed research practicum or an internship, and oral defenses of the capstone project and graduation portfolio.

### Minimum Grade Point Average

Students must maintain a minimum grade point average of 3.0. Grades of C or lower do not count toward graduation, and two course grades of C or lower are cause for dismissal from the program .

### Transfer

Students may transfer no more than six semester hours of graduate work; transferred coursework must be at B level or above.

### Curriculum

#### Required Core Courses (12 hours)

ENG 5304 Proseminar in Professional & Technical Communication  
ENG 5317 Rhetorical Theory & Criticism  
ENG 5330 Visual Design  
ENG 5340 Project Management

#### Thesis or Capstone Project Options (6 hours)

Thesis:

ENG 6390 Directed Research  
ENG 6391 Thesis

or

Capstone Project:

ENG 6390 Directed Research or 6380 Internship  
ENG 6392 Capstone Project

#### Elective Courses (18 hours)

ENG 5322 Advanced Editing  
ENG 5325 Advanced Medical Writing  
ENG 6303 Public Relations and Media Management

ENG 6310 Intercultural and World Communication  
ENG 6312 Ethical and Legal Dimensions of Communication  
ENG 6318 Stylistics & Editing  
ENG 6322 Instructional Design  
ENG 6324 Writing in the Professions  
ENG 6328 Hypermedia Theory & Design  
ENG 6360 Special Topics in Technical and Professional Communication

The following graduate courses may accepted as electives towards the degree, at the discretion of the Graduate Coordinator:

ENG 6301 Composition Pedagogy  
ENG 6319 Language Development and Variation: Implications for Educators  
CJ 6320 Research Design and Methods  
CJ 6321 Quantitative Analysis in Criminal Justice  
MATH 5305 Advanced Business Statistics  
ENG 4322 Editing, Rewriting, and Copyreading  
ENG 3325 Medical Writing

A maximum of six (6) undergraduate hours may be accepted as degree electives, at the discretion of the Graduate Coordinator.

## Public Service

### COLLEGE OF PUBLIC SERVICE

**Beth Pelz**, PhD, Dean

**Anjoo Sikka**, PhD, Associate Dean

Suite 400, 101 Commerce Street, 713-221-8194

The College of Public Service offers the Master of Arts in Teaching, the Master of Science in Criminal Justice, and the Master of Security Management.

### Department of Criminal Justice

**Beth McConnell**, PhD, Chair

101 Commerce Street, 713-221-8943

#### Faculty

Professors: McShane, Williams  
Associate Professors: Belbot, Engram, McConnell, Pelz, Snell, Wang  
Assistant Professors: Guarrero, Hsieh, Jakovich, Kellar, Snell, Walsh  
Lecturers: Hill, Karson

### Master of Science

#### Major in Criminal Justice

**Clete Snell**, PhD, Coordinator

Suite 340, 101 Commerce Street, 713-221-8943

The degree is designed to prepare graduate students to provide leadership, critical thinking and knowledge in the areas of criminological theory, program evaluation and criminal justice administration. The curriculum provides for the development of skills in criminal justice plan-

ning, implementation, and evaluation in order to ensure that the management and administration of the criminal justice system is effective, efficient, and responsive to the needs of the community.

- The degree is particularly beneficial for students already working in a criminal justice occupation and who wish to:
- increase their professional knowledge and skills or obtain employment in a criminal justice agency
- teach at the community college level
- pursue a doctoral degree.

### Admission Requirements

Admission is competitive and selective, and is designed to identify applicants who have the ability, interest, and qualities necessary to successfully complete the program, and the potential to contribute to the field of criminal justice. To be eligible for admission, an applicant will be required to present the following:

#### *Mandatory Admission Requirements*

- Baccalaureate degree conferred by a regionally-accredited institution.
- Official transcripts, submitted to the Office of Admissions, of all academic work previously undertaken.
- Choice of three standardized tests, submit one: Graduate Record Examination (GRE) general scores; Miller Analogies Test (MAT); Graduate Management Admission Test (GMAT). Scores must be provided by the testing authority. Test scores are not required if the applicant has already completed a graduate degree.
- Three letters of recommendation from individuals acquainted with your academic work and academic potential.
- A letter describing why the applicant desires this particular degree.
- For graduates of universities where English is not the native language: minimum TOEFL scores of 550 with section scores of 50 or higher.

#### *Preferences:*

- \*Major or minor in criminal justice or a related field from accredited university. Otherwise, additional preparatory course work will be needed.
- \*Undergraduate GPA of 3.0, or higher, on a 4-point scale for the final 60 semester hours of study.
- \*Evidence of scores in the higher percentiles on any of the acceptable standardized tests.
- \*Letter should demonstrate strong writing skills, commitment to completing the degree, and strong rationale for wanting this specific degree.
- \*Letters of recommendation from faculty sufficiently acquainted with the student to be able to comment on the potential to successfully complete a graduate program and providing evidence of excellent critical thought, motivation, study and writing skills, and strong overall faculty recommendation.
- Completion of a previous master's degree in any field, from an accredited institution.
- Authoring of publication(s), technical, professional or academic.
- Research experience.
- Grant-writing experience.

\*Primary attention is paid to these preferences.

Any student accepted into the MS program may be required to take remedial course work in Criminal Justice. Applicants who have earned a graduate degree in a field other than criminal justice at an accredited institution, and who meet all other admission requirements, are not re-

quired to submit GRE, GMAT or MAT scores. However, they are required to submit all graduate transcripts.

### Degree Requirements

The degree requires a minimum of 36 semester hours for either thesis or non-thesis options. Thirty of these hours must be taken at UH-Downtown. Both thesis and non-thesis options require completion of the following core for a total of 18 hours.

- CJ 6310 Issues in Criminal Justice
- CJ 6320 Research Design and Methods
- CJ 6321 Quantitative Analysis in Criminal Justice
- CJ 6330 Advanced Criminology
- CJ 6340 Administration in Criminal Justice
- CJ 6350 Policy Analysis and Program Evaluation

A minimum GPA of 3.0 for all course work is required.

### Thesis Option

In addition to the core, thesis option candidates are required to complete 12 hours of electives, 3 hours of Thesis I, and continuous enrollment in Thesis II until completion of the thesis.

### Non-Thesis Option

In addition to the core, non-thesis option candidates are required to complete 12 hours of electives and the following two courses (6 hours):

- CJ 6323 Communications & Technology in Criminal Justice
- CJ 6371 CJ Skills Assessment

Non-thesis option candidates will be required to take and pass a comprehensive examination, encompassing materials covered in all six core curriculum courses. The purpose of this examination is to provide a structured situation in which the candidate can demonstrate proficiency in various areas of study.

### Transfer of Graduate Credits

A maximum of six units of equivalent graduate course work may be transferred from other accredited universities. A minimum grade of B is required in any such courses. Transfer credit is granted by petition to, and approval by, the Graduate Committee. It is the student's responsibility to initiate the petition and justify the acceptance of the courses. The Graduate Committee will determine whether the courses are equivalent. Please keep in mind that transfer credit is by permission only and is not a right of the student.

## Master of Security Management

**Clete Snell**, PhD, Coordinator

Suite 340, 101 Commerce Street, 713-221-8943

The degree is designed to meet the needs of the security community by producing graduates who can perform evaluation research, engage in policy analysis, exhibit strong communication skills and apply security management skills to the business environment. Employers are increasingly seeking applicants with advanced education in these professional skills. This reflects the evolving nature of the corporate, industrial and retail security fields as they react to the current demands of homeland security in the private sector. The MSM Program of the University of Houston-Downtown is committed to meeting these needs.

To this end the program intends to:

- Prepare students with law enforcement backgrounds to operate within the security and business environment

- Prepare students with business backgrounds to operate within the specialized security environment
- Create a conduit between private and public security to address issues common to both specialties
- Provide students with an analytical academic environment within which he or she can apply the most recent information, techniques and practices
- Provide professional enrichment opportunities for current and future security professionals to enhance their skills
- Provide management skills necessary to supervise programs and personnel in the security environment

### Admission Requirements

Admission is competitive and selective, and is designed to identify applicants who have the ability, interest, and qualities necessary to complete the program, and the potential to contribute to the field of security management.

#### *Mandatory Admission Requirements*

To be eligible for admission, an applicant will be required to present the following:

- Baccalaureate degree conferred by a regionally-accredited institution
- Official transcripts, submitted to the Office of Admissions, of all academic work previously undertaken
- Choice of three standardized tests, submit one: Graduate Record Examination (GRE) general scores; Miller Analogies Test (MAT); Graduate Management Admission Test (GMAT). Scores must be provided by the testing authority. Not required if the applicant has already completed a graduate degree.
- Three letters of recommendation from individuals acquainted with your academic work and academic potential.
- A letter describing why the applicant desires this particular degree.
- For graduates of universities where English is not the native language: minimum TOEFL scores of 550 with section scores of 50 or higher.

#### *Preferences:*

- \*Major or minor in criminal justice, business, or related field from accredited university. Otherwise, additional preparatory course work will be needed
- \*Undergraduate GPA of 3.0, or higher, on a 4-point scale for the final 60 semester hours of study • \*Evidence of scores in the higher percentiles on any of the acceptable standardized tests
- \*Letter should demonstrate strong writing skills, expressed desire to work in the security field at the management level and/or assist in developing security policy within a governmental environment, commitment to completing the degree, and strong rationale for wanting this specific degree
- \*Letters of recommendation from faculty sufficiently acquainted with the student to be able to comment on the potential to successfully complete a graduate program and providing evidence of excellent critical thought, motivation, study and writing skills, and strong overall faculty recommendation
- One or more years of paid work experience in a supervisory capacity within a security setting (private security or law enforcement)
- Completion of a previous master's degree in any field, from an accredited institution
- Authoring of publication(s), either technical, professional or academic
- Research experience
- Grant-writing experience

\*Primary attention is paid to these preferences.

### Degree Requirements

The degree requires 36 semester hours. Of these hours, 30 are required classroom courses. The remaining 6 hours are comprised of a practicum and directed project experience with a professional specialization in Physical Security or Security Investigations. An additional professional seminar attendance requirement exists.

**Prerequisite background:** Students should have an academic background in either Criminal Justice or Business Administration. Other academic and professional preparation will be considered if program faculty deems it appropriate to the degree. Failing that, students must be willing to prepare themselves with the minimum of an undergraduate course in security management.

**Course work** (10 courses, 30 hours):

#### *Communication Area* (2 courses, 6 hours)

CJ 6315 Integrated Communication for the Security Manager  
CJ 6323 Communications and Technology

#### *Analytical Area* (3 courses, 9 hours)

CJ 6320 Research Methods and Design  
CJ 6350 Policy Analysis & Program Evaluation  
MATH 5309 Business Statistics  
or  
CJ 6321 Quantitative Analysis in Criminal Justice

#### *Free Elective* (1 course, 3 hours)

Any graduate level course in the CJ curriculum

#### *Security Specialization Area* (4 courses, 12 hours)

CJ 5360 Security and Crisis Management: Theories and Practices  
CJ 5362 Risk Analysis and Abatement  
CJ 6363 Business Aspects for the Security Manager  
CJ 6364 Legal Aspects for the Security Manager

#### *Professional Specialization Practicum and Project* (1 course, 6 hours):

Choose one:

CJ 6680 Physical Security Specialization  
CJ 6681 Security Investigation Specialization

Students must enroll in one of the above courses in order to declare a professional specialization. These courses are intended to provide the student with an analytical academic environment within which he or she can apply the most recent information, techniques and practices to likely scenarios in a designated security specialty field. A written product is required with a public presentation of the results. Students will work with a committee of two UHD faculty members and one security professional who will guide the student's research and analysis in the specialty area. The committee will guide the student in developing a professional presentation that incorporates a problem analysis, a comprehensive literature review, and the knowledge gained in the professional seminar hours (see below) and practicum. A successful defense of the project is necessary to pass the requirement.

#### *Professional Seminar Requirement*

Students must attend a mandatory minimum of 36 real-time hours of professional seminar presentation covering the domains, tasks and knowledge statements for physical security or security investigation published by the American Society of Industrial Security, International.

Graduation is dependent upon successful completion of all course work with a minimum graduate grade point average of 3.0, completion of professional seminar requirement and successful defense of the professional specialization project.

### Transfer of Graduate Credits

A maximum of six units of equivalent graduate course work may be transferred from other accredited universities. A minimum grade of B is required in any such courses. Transfer credit is granted by petition to, and approval by, the Graduate Committee. It is the student's responsibility to initiate the petition and justify the acceptance of the courses. The Graduate Committee will determine whether the courses are equivalent. Please keep in mind that transfer credit is by permission only and is not a right of the student.

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## Department of Urban Education

**Myrna Cohen**, EdD, Chair

Suite 440, 101 Commerce Street, 713-221-8943

### Faculty

Associate Professors: Bhattacharjee, Chen, Cmajdalka, Cohen, Garcia, Hood, R. Johnson, Mullinnix, Nath, Sikka, Thielemann

Assistant Professors: Bedard, Dutcher, Godine, Kortz, Mahoney, McIntosh, Pedrana, Van Horn, Villarreal

Instructor: Paige

## Master of Arts in Teaching

Leigh Van Horn, EdD, Coordinator

Suite 440, 101 Commerce Street, 713-221-2759

Majors in Elementary Education (with certification), Bilingual Education (with certification), Secondary Education (with certification), and Curriculum and Instruction.

The Master of Arts in Teaching, with majors in Elementary Education, Bilingual Education, Secondary Education, and Curriculum and Instruction, is designed to support existing teachers, and to prepare future teachers to teach in urban classrooms. The emphasis on urban teaching makes this degree truly unique. To meet the special needs of children in urban classrooms, students completing the MAT degree will demonstrate competency in the following areas of knowledge:

- Characteristics and needs of learners in multicultural settings
- Effective teaching practices that enhance student achievement for all students regardless of socioeconomic status, ethnicity, or language spoken
- Factors related to the development of effective teaching environments in urban classrooms
- Classroom-based research methodology to support best instructional practices
- Enriched understanding of academic content areas of language arts, social studies, mathematics, or the natural sciences

Admission into the MAT program requires that the applicant:

- Possess a baccalaureate degree from an accredited university and a GPA of 2.5
- Be a teacher of record in an urban classroom
- Obtain acceptable scores on a matrix based on GRE scores (General test) and GPA

- Obtain an acceptable score on the Test of English as a Foreign Language if they are graduates of universities in which English is not the native language

### Degree Requirements

The MAT degree program requires a minimum of 39 semester credit hours. For degree completion, at least 33 hours must be completed at UH-Downtown with a grade point average of 3.0. In addition, students must successfully complete a directed studies project (MAT 6390) with approval of the faculty advisor and the graduate committee.

Students seeking the MAT degree should select one of the following four options:

- Elementary Education (Certification Track) (39 graduate hours)
- Bilingual Education (Certification Track) (39 graduate hours)
- Secondary Education (Certification Track) (42 graduate hours)
- Curriculum & Instruction (for Certified Teachers only) (39 graduate hours)

Students seeking certification in conjunction with the MAT will be recommended for certification based upon satisfactory performance in the classroom, on the Examination for the Texas Examination of Educator Standards, and upon recommendation of the Graduate Studies Coordinator.

### Core requirements (15 hours)

All MAT students will take the following courses:

- MAT 6315 Introduction to Educational Research
- MAT 6316 Advanced Methods for the Culturally Diverse Classroom
- MAT 6317 Classroom-Based Research
- MAT 6318 Technology Application for Curriculum Development and Instruction
- MAT 6390 Directed Study in Urban Teaching

### Electives (12 hours)

Students (except MAT-Secondary students) will select three semester hours from:

- MAT 5320 Introduction to Educational Statistics,
- MAT 6319 Teaching the Language Minority Child
- MAT 6321 Teaching Children's Literature in Spanish
- MAT 6322 Readings in Critical Pedagogy

Depending on their teaching area, students will select nine semester hours from one of the following strands:

### Language Arts Strand

- ENG 6306 Methods of Reading and Writing about Literature
- ENG 6319 Language Development and Variation: Implications for Educators
- ENG 6307 Advanced Shakespeare
- ENG 6330 Composition Pedagogy
- COMM 6301 Speech Communication for the Elementary/Middle School Teacher
- COMM 6302 Speech Communication for the Secondary School Teacher

### Mathematics Strand

- MATH 6301 Geometry for Elementary School Teachers
- MATH 6302 Mathematical Structures for Elementary Teachers
- MATH 6304 Combinatorics and Probability for Elementary Teachers
- MATH 6311 Geometry for Secondary School Teachers

MATH 6312 Analysis for Secondary School Teachers  
MATH 6318 Special Topics for Secondary School Teachers

**Natural Sciences Strand**

BIOL 6301 Selected Topics in Advanced Biology  
CHEM 6301 Selected Topics in Advanced Chemistry  
GEOL 6331 Selected Topics in Advanced Geology and Physics  
NS 6301 Selected Topics in Earth and Environmental Science  
NS 6311 Selected Topics in Life Science  
NS 6321 Selected Topics in Physical Science

**Social Studies Strand**

GEOG 6301 World Cultural Geography  
HIST 6301 Seminar in Modern European History  
HIST 6302 Seminar in US History  
HIST 6303 Seminar in Texas History  
POLS 6301 American Government and Politics  
POLS 6302 Elements of Politics  
ECO 5331 Economic Processes

**MAT students will take the following courses, depending upon their major:**

*MAT with Major in Elementary Education (with initial teacher certification)*

MAT 6301 Science Methods for the Elementary/Middle School  
MAT 6302 Mathematics Methods for Elementary/Middle School Teachers  
MAT 6303 Diagnostic Testing of Reading  
MAT 6381 Internship in Urban Classrooms

*MAT with Major in Bilingual Education (with initial teacher certification)*

MAT 6304 Language Arts/Reading Methods in Spanish  
MAT 6305 Integrated Curriculum–Bilingual  
MAT 6306 Reading Diagnosis in Bilingual Classroom  
MAT 6381 Internship in Urban Classrooms

*MAT with Major in Secondary Education (with initial teacher certification)*

MAT 5301 Understanding the Middle and High School Learner  
MAT 5302 Curriculum, Instruction, and Evaluation in Secondary Schools  
MAT 5305 Professional Roles and Responsibilities for Secondary Teachers  
MAT 5312 Managing the Secondary Environment for Student Success  
MAT 5321 Literacy in Middle and Secondary Schools  
MAT 6381 Internship in Urban Classrooms

*MAT with Major in Curriculum and Instruction*

MAT 6310 Reading in a Multicultural Classroom  
MAT 6311 Advanced Study of Developmental Psychology and Diversity  
MAT 6312 Foundations of Curriculum and Instruction for Culturally Diverse Settings  
MAT 6380 Practicum for Urban Teachers

## Texas Common Course Numbering System Cross-Reference List

<b>TCCNS Course Number</b>	<b>UHD Course Number</b>	<b>TCCNS Course Number</b>	<b>UHD Course Number</b>	<b>TCCNS Course Number</b>	<b>UHD Course Number</b>
ACCT 2301	ACC 2301	CRIJ 2313	CJ 2303	MATH 2412	MATH 1404
ACCT 2302	ACC 2302	CRIJ 2328	CJ 2301	MATH 2413	MATH 2401
ANTH 2302	ANTH 2302	DRAM 1310	DRA 1301	MATH 2414	MATH 2402
ANTH 2351	ANTH 2301	DRAM 1330	DRA 1305	MATH 2415	MATH 2403
ARTS 1301	ART 1310	DRAM 1351	DRA 1303	MUSI 1311	MUS 1304
ARTS 1303	ART 1301	DRAM 1352	DRA 1304	PHIL 1301	PHIL 1301
ARTS 1304	ART 1302	ECON 2301	ECO 2301	PHIL 2316	PHIL 2301
ARTS 1311	ART 1303	ECON 2302	ECO 2302	PHIL 2317	PHIL 2302
ARTS 1312	ART 1304	ENGL 1301	ENG 1301	PHYS 1101	PHYS 1107
ARTS 1316	ART 1305	ENGL 1302	ENG 1302	PHYS 1102	PHYS 1108
ARTS 1317	ART 1306	ENGL 2322	ENG 2313	PHYS 1301	PHYS 1307
ARTS 2316	ART 2303	ENGL 2323	ENG 2314	PHYS 1302	PHYS 1308
ARTS 2317	ART 2304	ENGL 2327	ENG 2311	PHYS 2125	PHYS 2101
BIOL 1106	BIOL 1101	ENGL 2328	ENG 2312	PHYS 2126	PHYS 2102
BIOL 1107	BIOL 1102	ENGL 2332	ENG 2301	PHYS 2425	PHYS 2401
BIOL 1307	BIOL 1302	ENGL 2333	ENG 2302	PHYS 2426	PHYS 2402
BIOL 1322	BIOL 2306	ENGR 1407	ENGR 2407	PSYC 2301	PSY 1303
BIOL 2101	BIOL 1103	FREN 1411	FREN 1401	PSYC 2306	SOS 2308
BIOL 2102	BIOL 1104	FREN 1412	FREN 1402	PSYC 2314	PSY 2310
BIOL 2120	MBIO 1105	FREN 2311	FREN 2301	PSYC 2315	PSY 2306
BIOL 2121	MBIO 2105	FREN 2312	FREN 2302	PSYC 2319	PSY 2302
BIOL 2301	BIOL 1303	GEOG 1303	GEOG 1302	REAL 1301	FIN 2301
BIOL 2302	BIOL 1304	GOVT 2301	POLS 2303	SOCI 1301	SOC 1303
BIOL 2306	BIOL 1301	GOVT 2302	POLS 2304	SOCI 1306	SOC 2302
BIOL 2320	MBIO 1305	HIST 1301	HIST 1305	SOCI 2326	PSY 2302
BIOL 2321	MBIO 2305	HIST 1302	HIST 1306	SOCW 2361	SOC 2306
CHEM 1111	CHEM 1107	HIST 2301	HIST 2303	SPAN 1300	SPAN 1305
CHEM 1112	CHEM 1108	HUMA 2319	HIST 2309	SPAN 1411	SPAN 1401
CHEM 1305	CHEM 1305	MATH 1314	MATH 1301	SPAN 1412	SPAN 1402
CHEM 1311	CHEM 1307	MATH 1316	MATH 1302	SPAN 2311	SPAN 2301
CHEM 1312	CHEM 1308	MATH 1324	MATH 1305	SPAN 2312	SPAN 2302
COMM 1307	COMM 1302	MATH 1325	MATH 1306	SPAN 2313	SPAN 2311
COSC 1301	CIS 1301	MATH 1332	MATH 1310	SPAN 2315	SPAN 2312
COSC 2330	CS 2310	MATH 1342	MATH 2300	SPCH 1311	COMM 1304
CRIJ 1301	CJ 1301	MATH 2305	MATH 2305	SPCH 1342	COMM 1301
CRIJ 1306	CJ 2302	MATH 2318	MATH 2307		

## Course Credit and Numbering System

Progress toward the completion of academic work is measured in terms of semester credit hours. One semester credit hour is normally equivalent to one hour of class work, or from one to six hours of laboratory work per week for a semester.

All courses are identified by discipline and number. The first digit of a course number indicates the academic level. Courses in the 1000 series are generally for freshmen, 2000 for sophomores, 3000 for juniors and 4000 for seniors. The 5000 and 6000 series courses are graduate courses. Undergraduates are not allowed to enroll in graduate courses without permission of the academic department which offers the courses. The second digit indicates the number of semester credit hours that the course carries. The third and fourth digits specify a particular course within its discipline.

The three numbers in parentheses after each course title indicate the number of semester credit hours, the number of class hours per week, and the number of additional laboratory or activity hours per week.

## The Texas Common Course Numbering System

The University of Houston-Downtown is a participant in the Texas Common Course Numbering System (TCCNS). This system ensures that if a student takes a course bearing a common course number at another college or university, UH-Downtown will accept the course in transfer as equivalent to the corresponding UH-Downtown course.

Common course numbers have a four-letter prefix followed by a four-digit number. The four-letter prefix identifies the subject area. For example, ENGL is the common prefix for English courses, and COSC is the common prefix for computer science courses. The four-digit number following the prefix identifies a specific course with the subject area.

Each digit in the four-digit sequence gives additional information about the course. The first digit identifies the course as either freshman level (1) or sophomore level (2). The second digit identifies the number of credit hours students earn upon completing the course. The final two digits indicate the sequence in which courses are generally taken. Thus, French I (FREN 1311) is taken before French II (FREN 1312).

In this Catalog, for courses corresponding to those in the TCCNS, the common course number is indicated in parentheses at the end of the course description. The page to the left lists all UH-Downtown courses for which a common course number exists.

More information about the Texas Common Course Numbering System is available from the Office of Admissions (Room 326-South; 713-221-8533).

## ACC (Accounting)

### 2301 Financial Accounting (3-3-0)

*Prerequisite: MATH 1301.*

The financial accounting course is fundamental to the business curriculum and to success in the business world beyond college. The purpose of the course is to (1) give students a grasp of accounting terminology, (2) help students learn the process of gathering, classifying and reporting financial information on financial statements, and (3) provide analytical skills necessary to understand the importance of financial statements in economic decision making. (ACCT 2301)

### 2302 Managerial Accounting (3-3-0)

*Prerequisite: ACC 2301.*

The managerial accounting course is fundamental to the business curriculum. The purpose of the course is to provide an understanding of the role of accounting information in the business decision-making process. The course is taught from the perspective of the users of accounting information. The major emphasis is on *what* the accounting information is, *why* it is important, and *how* it is used by economic decision makers. (ACCT 2302)

### 3300 Intermediate Accounting I (3-3-0)

*Prerequisite: Completion of the common core plus 18 additional hours and a grade of C or better in ACC 2301 and ACC 2302.*

Development of a comprehensive analysis of financial accounting topics involved in preparing, interpreting and using financial statements that comply with generally accepted accounting principles. Designed to help students understand and apply the conceptual framework of financial reporting, asset measurement and revenue recognition.

### 3301 Intermediate Accounting II (3-3-0)

*Prerequisite: Completion of the common core plus 18 additional hours and a grade of C or better in ACC 3300.*

Continuation of Intermediate Accounting I. This course furthers the development of analytical skills necessary for the measuring and reporting of assets, liabilities and equity. Accounting principles underlying the preparation of financial statements are studied in depth.

### 3302 Intermediate Accounting III (3-3-0)

*Prerequisite: Completion of the common core plus 18 additional hours and a grade of C or better in ACC 3301.*

Continuation of Intermediate Accounting II. This course focuses on understanding and solving some of the more complex topics of financial accounting and their impacts on users. Topics include leases, pensions and corporate income taxes. Additional special topics will be included.

**3303 Cost Accounting (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours, a grade of C or better in ACC 2302, and junior standing.*

This course builds on the managerial accounting course. The purpose of the course is to provide a thorough treatment of traditional and contemporary approaches to cost accounting, cost management and cost control.

**3304 Accounting Information Systems (3-3-0)**

*Prerequisite: ACC 3300.*

Study of accounting systems as information and control systems. Financial information needs, control methods and efficiency measures. Computer applications.

**3305 Governmental and Not-for-Profit Accounting (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours and ACC 2302.*

Focus on accounting procedures of governmental agencies. Primary emphasis is on fund accounting for governmental agencies. Fund accounting coverage of certain not-for-profit entities is also addressed.

**3307 Oil and Gas Accounting (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours and ACC 2302.*

Accounting systems and procedures generally applicable to the oil and gas industry. The Texas State Board of Public Accountancy does not accept this course as satisfying the accounting course requirements to sit for the Certified Public Accountant exam in Texas. However, the course is accepted as a business course elective and for meeting the 150 hour requirement.

**3323 International Accounting (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours and ACC 2302.*

An overview of international financial accounting standards, current problems of international operations and multinational corporations. It also provides comparative analysis of accounting principles and practices outside the United States. The Texas State Board of Public Accountancy does not accept this course as satisfying the accounting course requirements to sit for the Certified Public Accountant exam in Texas. However, the course is accepted as a business course elective and for meeting the 150 hour requirement.

**3399 Directed Study in Accounting**

*Prerequisite: Formal approval by department chair and dean.*

Selected topics in accounting; intensive individual study under the guidance of a member of the accounting faculty.

**4301 Individual Income Taxation (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours and ACC 2302.*

Determination of income and statutory deductions to arrive at net taxable income. In addition, the determination of tax liability and various tax credits are discussed. The Internal Revenue Code, various income tax acts and problems of the preparation of individual income tax returns are studied as they relate to current laws.

**4302 Corporation Taxation (3-3-0)**

*Prerequisite: ACC 4301.*

Study of income tax acts as they relate to corporations and partnerships. Methods of tax research are integrated into each of the topics studied.

**4303 Advanced Accounting (3-3-0)**

*Prerequisite: A grade of C or better in ACC 3302.*

Business combinations, home office and branches, and partnerships, with concentration on accounting and reporting for purchase acquisitions using the equity method.

**4304 Auditing (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours, ACC 3301, STAT 3309 or equivalent.*

Introduction to auditing as it relates to the accounting profession. Studies emphasize generally accepted auditing standards; the acquisition, evaluation and documentation of audit evidences; professional responsibilities; and auditors' reports and opinions.

**4306 Ethical Accounting Practices (3-3-0)**

*Prerequisite: ACC 3301; ACC 3304; & enrollment in, or completion of, BA 3300.*

This course is designed to satisfy the ethics requirement of the Texas State Board of Public Accountancy for eligibility to take the CPA exam. Provides the foundation, rationale, methodology and practice in ethical reasoning as these are applied in the accounting profession. Covers core ethical values related to business and accounting practice including issues of integrity, objectivity and independence. Builds upon the six-week ethics component in BA 3300.

**4307 Accounting Analysis for Decision Making (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours, ACC 3303, and STAT 3309 or equivalent.*

This course builds on the managerial accounting and cost accounting courses. The purpose of the course is to provide a contemporary conceptual framework for the study of analytical techniques for supporting tactical and strategic business decisions.

**4309 EDP Audit and Controls (3-3-0)**

*(Cross-listed as CIS 4309. Credit may not be earned for both.)*

*Prerequisite: Completion of the common core plus 18 additional hours, ACC 2302 and CIS 1301.*

Introduction to the fundamentals of auditing computer-based information systems. Emphasis for this course is on the concepts and techniques used in automated information systems audits. Exposure to risk assessment, business impact analysis, and disaster recovery analysis is provided as these topics relate to the varying requirements of business entities and of the business community.

**4321 Financial Reporting Theory (3-3-0)**

*Prerequisite: A grade of C or better in ACC 3302.*

Theoretical structures and rationale underlying financial reporting standards. Critical evaluation of Financial Accounting Standards.

**4322 Estate, Gifts and Trust Taxation (3-3-0)**

*Prerequisite: ACC 4301.*

Statutory and case law approach to federal taxation of estates, gifts and trusts. Emphasizes use of Internal Revenue Code and regulations and includes tax planning and research.

**4325 Tax Research Methodology (3-3-0)**

*Prerequisite: ACC 4301 and ACC 4302.*

This course focuses on fundamentals of federal tax research. The emphasis will be on methodology and sources of tax research, tax analysis and use of the computer in tax practice/research.

**4380 Field Experience in Accounting**

For more information and qualifications see Field Experience in the College of Business section of this catalog and/or the department chair for your declared major.

## ADM (Administrative Management)

**1301 Keyboarding Applications (3-3-0)**

Introductory course designed to develop basic concepts and touch keyboarding and calculator skills on the personal computer using alphabetic and numeric keys. Students also learn standard formatting skills required to prepare business letters, reports, tables and memoranda.

**2303 Information Processing I (3-3-0)**

*Prerequisite: ADM 1301 or departmental approval.*

Provides an integrated perspective on the problems in today's information systems environment, concentrating on contemporary design methodologies and considerations unique to users. Topics include strategic role of information processing, management of change related to emerging types of information technology, project planning, and task definition. Course work includes lectures, readings, case analyses and discussion, electronic meeting technology, hands-on computer assignments and a team project.

**3301 Records Management (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours and completion of, or enrollment in, BA 3300.*

Principles of the creation, use, retention, protection/preservation, storage, retrieval of business records regardless of media or format.

**3302 Supervision of Personnel (3-3-0)**

*Prerequisite: MGT 3301 or departmental approval and completion of, or enrollment in, BA 3300.*

Motivational techniques, productivity measurements, strategies and issues related to supervising office productivity. Issues addressed include working with vendors, personal aspects of supervision, effective colleague relations including office politics, reorganizing office systems and defining office productivity.

**3303 Equal Opportunity Management (3-3-0)**

*(Cross-listed as MGT 3307. Credit may not be earned for both.)*

*Prerequisite: MGT 3301 or departmental approval and completion of, or enrollment in, BA 3300.*

Focuses on managerial issues affected by the rights of the workforce. Issues include harassment and discrimination based

on such factors as race, ethnicity, gender, physically challenged and sexual orientation.

**3304 Information Processing II (3-3-0)**

*Prerequisite: ADM 2303 or departmental approval and completion of, or enrollment in, BA 3300.*

The course builds on topics introduced in Information Processing I, and introduces students to advanced topics in desktop publishing, presentation software, conversion and use of ASCII files, hypertext document preparation, and Web Page design. Semester projects include the production of a presentation using software and the development of a personal web page.

**3308 Business Ethics (3-3-0)**

*(Cross-listed as BA 3308. Credit may not be earned for both.)*

*Prerequisite: Completion of the common core plus 18 additional hours and completion of, or enrollment in, BA 3300.*

A theoretical examination of the bases for moral business decisions, raising of the moral recognition level and blending of theory with practice.

**3309 Management of the Virtual Workplace (3-3-0)**

*(Cross-listed as CIS 3319. Credit may not be earned for both.)*

*Prerequisite: Completion of the common core plus 18 additional hours and completion of, or enrollment in, BA 3300.*

Management of the virtual workplace encompassing telecommuters, entrepreneurs and virtual office workers. Covers integration of the use of e-mail, computerized meetings, virtual office design, web page development, and other forms of telecommunications, as it becomes available. Simulations conducted via Internet with other on-line participation.

**3399 Directed Study in Administrative Management**

*Prerequisite: Approval of the department chair and dean.*

Selected topics in administrative management. Intensive individual study under the guidance of an administrative management faculty member.

**4301 Business Communications (3-3-0)**

*Prerequisite: BA 3300, completion of the common core plus 18 additional hours and a declared business major.*

Analysis of the communications process as it relates to business functions. Principles of communication are applied to the communication process for verbal and non-verbal communication between individuals and within groups. Emerging forms of communication such as telecommunications, e-mail and software presentation systems, as well as traditional forms of written business communication, are studied. In addition to developing strategies for oral presentations and written research, students enhance listening skills and critique oral and written communication.

**4302 Supervisory Problems (3-3-0)**

*Prerequisite: BA 3300, ADM 3302 or departmental approval.*

A case study course investigating supervisory problems in business, government and industry.

**4303 Administrative Management (3-3-0)**

*Prerequisite: BA 3300 and ADM 3301.*

Capstone course focusing on problems faced by administrative

managers while pursuing organizational objectives. Course work seeks to develop and/or enhance organizational skills.

**4305 Information Processing Management (3-3-0)**

*Prerequisite: BA 3300 and ADM 3301.*

Organizational concepts of managing information. Development of business reports related to records management via integration of word processing, spread sheet and data processing software. Investigation of appropriate interfacing methods and the impact of new technology on the organization.

**4311 Seminar in Administrative Management (3-3-0)**

*Prerequisite: ADM 4303 and senior standing.*

Emerging topics in administrative management.

**4380 Field Experience in Administrative Management**

For more information and qualifications see Field Experience in the College of Business section of this catalog and/or the department chair for your declared major.

**4390 Selected Topics in ADM (3-3-0)**

*Prerequisite: Approval of department chair.*

Intensive study of one or more major topics in administrative management, especially with respect to a new or emerging area.

## ANTH (Anthropology)

**2301 Physical Anthropology (3-3-0)**

*Prerequisite: Credit or enrollment in ENG 1301.*

Humans as physical beings, through the study of evolution, ancestry, prehistory and genetics. (ANTH 2351)

**2302 Cultural Anthropology (3-3-0)**

*Prerequisite: Credit or enrollment in ENG 1301.*

An introduction to the study of humans as cultural beings. The nature of culture and the economic, social and political impact of cultural changes. Institutions of primitive people are compared with those of urban societies. (ANTH 2302)

**3313 Health, Medicine, and Culture (3-3-0)**

*Prerequisite: ANTH 2301, ANTH 2302 or permission of the instructor.*

This course will examine the anthropology of health including the concepts of illness, medicine, aging, and the role of the healer from a cross-cultural perspective. Topics will primarily focus on the interaction of culture and biology in relation to causes of disease, treatment of disease, and the attitudes of the population.

**4390 Special Topics in Anthropology (3-3-0)**

*Prerequisite: 3 hours in anthropology or permission of the instructor.*

Selected topics in anthropology. Topics may vary from semester to semester and may be repeated for credit.

## ART (Art)

**1301 History of Art: Paleolithic to Renaissance (3-3-0)**

*Prerequisite: Credit or enrollment in ENG 1301.*

An introduction to monuments of art from prehistoric times to c. 1500 AD. The course analyzes the variety of contexts and circumstances under which works of art were created, and explores both the similarities and differences between artistic periods. (ARTS 1303)

**1302 History of Art: Renaissance to Present (3-3-0)**

*Prerequisite: Credit or enrollment in ENG 1301.*

An introduction to monuments of art from the late Renaissance to contemporary times. The course analyzes the variety of contexts and circumstances under which works of art were created, and explores both the similarities and differences between artistic periods. (ARTS 1304)

**1303 Design and Materials (3-3-3)**

*Laboratory fee required.*

Analysis of fundamental principles and elements in two- and three-dimensional design. Work with various materials and colors in relation to space and movement. (ARTS 1311)

**1304 Design Color and Structure (3-3-3)**

*Prerequisite: ART 1303 or equivalent.*

*Laboratory fee required.*

A continuation of the study of fundamental principles and elements in two- and three-dimensional design. (ARTS 1312)

**1305 Drawing I (3-3-3)**

*Laboratory fee required.*

Representation drawing with a consideration of perspective, light and shade; practice using charcoal, pencil, conte, pen and wash. (ARTS 1316)

**1306 Drawing II (3-3-3)**

*Prerequisite: ART 1305 or equivalent.*

*Laboratory fee required.*

A continuation of representation drawing, with a consideration of perspective, light and shade; practice using charcoal, pencil, conte, pen and wash. (ARTS 1317)

**1310 Art Appreciation (3-3-0)**

An introduction to the visual arts. The visual elements of artworks are defined and students are introduced to the vocabulary, principles and techniques of art in different periods and cultural settings. Includes individual art projects and tours. (ARTS 1301)

**2301 Figure Drawing (3-3-3)**

*Laboratory fee required.*

Introduces students to figure drawing and develops skill in perceiving the human figure as form and volume in live models and mannequins. Various media and techniques are used.

**2303 Painting I (3-3-3)**

*Laboratory fee required.*

Application of methods and techniques of still-life painting, correlation of media and approaches to mixed media. (ARTS 2316)

- 2304 Painting II (3-3-3)**  
Prerequisite: ART 2303 or equivalent.  
Laboratory fee required.  
Continuation of ART 2303. (ARTS 2317)
- 2305 Film Appreciation (3-3-0)**  
(Cross-listed as COMM 2305. Credit may not be earned for both.)  
Prerequisite: ENG 1302.  
An overview of film as a communication and esthetic medium. Films are studied for their artistic and cultural significance, and for the communication strategies they use. Topics include film genres, sound and graphics, imagery, symbolism, cultural contexts for film, and film criticism.
- 2306 Watercolor Painting I (3-3-3)**  
Prerequisite: ART 2303 or permission of instructor.  
This course will explore the basic techniques and materials used in watercolor painting. Emphasis on transparent application, flat brush, graded wash, dry brush, wet on wet techniques and paper preparations.
- 2307 Watercolor Painting II (3-3-3)**  
Prerequisite: ART 2306.  
This course will explore the advanced techniques and materials used in watercolor painting. Emphasis on transparent application, flat brush, graded wash, dry brush, wet on wet techniques and paper preparations.
- 3301 Major Developments in the History of Art (3-3-0)**  
(Cross-listed as HUM 3312.)  
A study of important historical events in the development of the theory and practice of the visual arts. May be repeated for credit when topic changes.
- 3302 History of Modern Art (3-3-0)**  
(Cross-listed as HUM 3324. Credit may not be earned for both.)  
Prerequisite: ENG 1301 and 3 hours of art history or art appreciation.  
A survey of world art from the Revolutionary Period (late 18th century) to contemporary times, including such artistic movements as Neoclassicism, Romanticism, Impressionism, Cubism, Surrealism and Pop Art.
- 3305 Computer Graphics (3-3-0)**  
Prerequisite: ART 1303 or permission of instructor  
Students learn about the extensive scope of computer graphics by applying basic principles in art and design. Students will develop skills in symmetry and pattern, as they solve fundamental design problems and create images with drawing software.
- 3306 Art and Religion - Origins (3-3-0)**  
(Cross-listed as HUM 3305. Credit may not be earned for both.)  
Prerequisite: 3 hours of art history or art appreciation.  
Survey of the religious arts and architecture of the ancient world and their underlying beliefs and practices. Examines the early art and architecture of the world religions. All works are presented in historical sequence, concluding with the period known in the West as the Renaissance.

- 3307 Art and Religion - Developments (3-3-0)**  
(Cross-listed as HUM 3307. Credit may not be earned for both.)  
Prerequisite: 3 hours of art history or art appreciation.  
Survey of the religious arts and architecture of the developing modern world from the 17th century to the present. The main focus is on religious art in Buddhism, Christianity and Islam, but the course also examines the impact of these religions on modern secular and religious movements.
- 3315 Film Analysis (3-3-0)**  
(Cross-listed as COMM 3317. Credit may not be earned for both.)  
Prerequisite: ART 2305 or COMM 2305.  
This course applies the history and terminology from ART/COMM 2305 (Art Appreciation) to the analysis and critique of films representative of various movements and genres.
- 4390 Selected Topics in Studio Art (3-3-3)**  
Prerequisite: An art course at the 2000-level and junior standing.  
Explores a range of studio media from printmaking to advanced painting. Topics in relief printing include woodcut, linocut, monoprint and collograph. Topics in painting include traditional and nontraditional methods of medium and structural investigations. Emphasis on technique and creativity to expand students' imagery and visual vocabulary. May be repeated for credit when the topic varies.

## AS (American Studies)

- 1301 The American Experience (3-3-0)**  
A broad introduction to the social and intellectual currents which define American culture of the 20th century. The course will foster the development of critical and analytical skills appropriate to the study of culture.

## BA (Business Administration)

- 3300 Business Cornerstone (3-3-0)**  
Prerequisite: Sophomore standing.  
An introductory course for all majors. Topics include critical thinking, ethics, diversity, teams, research methods, and international issues. The critical thinking component introduces the concepts and techniques of critical thinking. The ethics component introduces the basic ethical concepts, principles, and techniques of moral reasoning needed in business. The diversity component develops an understanding of the cultural demographic and regulatory aspects of a diverse population of customers and employees. The teams component focuses on the importance and role of teams in business. The research methods component introduces the concepts of primary and secondary sources of information for business research. The international issues component introduces the global aspects of business.
- 3301 Legal Environment of Business (3-3-0)**  
Prerequisite: Completion of the common core plus 18 additional hours, POLS 2303, POLS 2304 and completion of, or

enrollment in, BA 3300. BA 3300 may be waived upon completion of HUM 3310 or CJ 3300.

An introduction to business law, with special emphasis on the legal and ethical environment of business, both domestic and international. Topics include a description of the American legal system, crimes, torts, contracts, agency and legal liability, business organizations, and governmental regulations.

**3302 Commercial Law (3-3-0)**

*Prerequisite: BA 3301 and completion of, or enrollment in, BA 3300.*

A continuation of BA 3301, including laws governing sales, credit transactions, bankruptcy, negotiable instruments, corporations, partnerships and property. The emphasis of this course is commercial law and business.

**3303 Global Environmental Issues in Business (3-3-0)**

*Prerequisite: BA 3301 or instructor approval and completion of, or enrollment in, BA 3300.*

Contemporary domestic and international environmental issues with emphasis on the legal framework within which these issues are addressed to provide an understanding of the associated business risks relating to these issues. Applicable federal and state regulations, their enforcement and effects on business will be covered. Consequences of noncompliance such as civil and criminal prosecution and tort liability will also be studied.

**3304 International Business Law (3-3-0)**

*Prerequisite: BA 3301 or instructor approval and completion of, or enrollment in, BA 3300.*

An introduction to diverse legal influences which affect international business transactions. Topics include: international law and organizations, bilateral and multilateral trade agreements, governmental policies, competition, property rights, contracts relating to import/ export, and dispute resolution.

**3305 Entrepreneurship (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours.*

This course teaches students what will be involved in launching and operating a new venture. Using a combination of experiential exercises and case studies, students develop a hands-on understanding of the difficulties associated with launching new ventures.

**3308 Business Ethics (3-3-0)**

*(Cross-listed as ADM 3308. Credit may not be earned for both.)*

*Prerequisite: Completion of the common core plus 18 additional hours and completion of, or enrollment in, BA 3300.*

A theoretical examination of the bases for moral business decisions, raising of the moral recognition level and blending of theory with practice.

**3309 Real Estate Law (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours and completion of, or enrollment in, BA 3300.*

A study of the application of the law in real estate interests, conveyance of title, contracts of sale, title searches, types of ownership, liens and mortgages, insurance, leases and taxation of property owners.

**3315 Diversity and the Law (3-3-0)**

*Prerequisite: BA 3301 and completion of, or enrollment in, BA 3300.*

Organizations must deal with diversity and related legal issues in a variety of environments, external as well as internal, which are highly regulated and surround diversity in numerous different contexts involving employers, employees, customers, the courts, and local, state, and federal agencies. Emphasis will be placed upon organizational compliance with applicable legal constraints by creating an atmosphere of understanding of and appreciation for diversity.

**3320 International Business (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours or instructor approval and completion of, or enrollment in, BA 3300.*

Broad approach to the basic principles of business globalization. Emphasis is placed on the business enterprise as it conducts its commercial activity in environments that are different in their economic, political, legal, social and cultural aspects from the firm's corresponding domestic environment.

**3340 Entrepreneurial Revenue (3-3-0)**

*Prerequisite: BA 3305 or MGT 4303.*

Teaches students about the dynamics of marketing entrepreneurial products and services. Students will learn the effects of pricing and marketing strategies on the growing enterprise.

**3341 Entrepreneurial Costs and Budgeting (3-3-0)**

*Prerequisite: BA 3305 or MGT 4303.*

Teaches students how to manage the costs of bringing new products and services to market. Provides students with knowledge, tools, and insights to help understand and control the obvious costs associated with new ventures as well as the hidden costs that can eat away at a venture's profits.

**3342 Entrepreneurial Capitalization and Funding (3-3-0)**

*Prerequisite: BA 3305 or MGT 4303.*

Capital is the lifeblood of all new ventures. This course introduces students to the many sources of capital available to new ventures and provides them with insights on how to gain access to capital.

**3399 Directed Study in Business Administration (3-3-0)**

*Prerequisite: Approval from department chair and dean.*

Selected topics in business administration; intensive individual study under the guidance of a member of the business faculty.

**4302 Business Strategy (3-3-0)**

*Prerequisite: BA 3300 and must be a declared business major and have completed all required general education and business core courses. Successful completion of the Writing Proficiency Exam is required.*

The capstone course in business emphasizing planning and decision-making, formulating strategies and implementing plans for action. Comprehensive cases provide the opportunity to study proper interrelationships among production, operations, finance, accounting, marketing and the many other functions involved in managing a business enterprise.

**4305 Business Plan (3-3-0)**

*Prerequisite:* BA 3305 or MGT 4303; BA 3340, BA 334, BA 3342 .

The business plan is the road map for new ventures. It outlines the goals and objectives of the enterprise and describes how they will be achieved. It helps keep the venture on the path of growth and profitability, and provides a mechanism for communicating the firm's achievements and goals with external parties, including potential investors.

**4379 Implementing the Business Plan (3-3-0)**

*Prerequisite:* BA 3305 or MGT 4303; BA 3340, BA 3341m BA 3342.

This course teaches students what will be involved in launching and operating a new venture. Using a combination of experiential exercises and case studies, students will develop a "hands on" understanding of the difficulties associated with launching new ventures.

**4380 Field Experience in Business Administration**

For more information and qualifications see Field Experience in the College of Business section of this catalog and/or the department chair for your declared major.

**4390 Selected Topics in Business (3-3-0)**

*Prerequisite:* Approval of instructor or department chair.

Intensive study of one or more major topics in business. May be repeated for credit with departmental approval when topics vary.

**BED (Bilingual Education)****3301 Understanding the Second Language Learner (3-3-2)**

*Prerequisite:* Admission to Teacher Education program and concurrent enrollment in Interdisciplinary Block I.

Field-based course that provides an understanding of developmental, environmental, and cultural, factors that affect second language learners.

**3311 Foundations of Bilingual/ESL Education (3-3-0)**

*Prerequisite:* Admission to Teacher Education program and concurrent enrollment in Interdisciplinary Block I.

Field-based course that examines and applies the rationale, goals, and objectives of bilingual/ESL programs through interaction with urban students and teachers in a bilingual/ESL classroom.

**4301 Teaching Language Arts and Reading in Spanish (3-3-0)**

*Prerequisite:* Completion of Interdisciplinary Block I, a score of 75 or better on departmental examination and concurrent enrollment in Interdisciplinary Block II.

Field-based course that applies language arts and reading techniques in Spanish through interaction with urban students and teachers in a bilingual classroom.

**4311 Integrating Curriculum in a Bilingual/ESL Classroom (3-3-0)**

*Prerequisite:* Completion of Interdisciplinary Block I, a score of 75 or better on departmental examination and concurrent enrollment in Interdisciplinary Block II.

Field-based course that addresses bilingual/ESL methods and techniques for integration of various school subjects.

**BIOL (Biology)****1101 General Biology Laboratory I (1-0-3)**

*Prerequisite:* Credit or enrollment in BIOL 1301.

*Laboratory fee required:* \$12.

Appropriate exercises and experiments requiring scientific observations and analysis that illustrate some of the basic techniques, concepts and facts presented in BIOL 1301, with emphasis on plant biology. (BIOL 1106)

**1102 General Biology Laboratory II (1-0-3)**

*Prerequisite:* BIOL 1101 and credit or enrollment in BIOL 1302.

*Laboratory fee required:* \$12.

A continuation of BIOL 1101, with emphasis on animal biology. Animal dissection required. (BIOL 1107)

**1103 Human Anatomy and Physiology Laboratory I (1-0-3)**

*Prerequisite:* Credit or enrollment in BIOL 1303.

*Laboratory fee required:* \$12.

Laboratory course emphasizing some of the techniques and principles presented in BIOL 1303. Animal dissection required. (BIOL 2101)

**1104 Human Anatomy and Physiology Laboratory II (1-0-3)**

*Prerequisite:* BIOL 1103 and credit or enrollment in BIOL 1304.

*Laboratory fee required:* \$12.

A continuation of BIOL 1103. (BIOL 2102)

**1301 General Biology I (3-3-0)**

*Prerequisite:* Credit or enrollment in BIOL 1101, ENG 1301 and MATH 1301.

Topics include the scientific method, chemical and physical bases of life, cell structure and function, respiration, photosynthesis, cell division, heredity, regulation of genes, the diversity of life, and plant structure and function. BIOL 1301 and 1302 are courses designed for students who plan to take advanced level courses in biology and microbiology. Only one of the following courses may be applied toward a degree: BIOL 1301 or BIOL 1308. (BIOL 1306)

**1302 General Biology II (3-3-0)**

*Prerequisite:* BIOL 1101, BIOL 1301 and credit or enrollment in BIOL 1102.

Continuation of BIOL 1301. Topics include digestion, nervous and hormonal control, gas exchange, excretion, homeostasis, reproduction and development, animal behavior, evolution and the ecology of biological communities. (BIOL 1307)

**1303 Human Anatomy and Physiology I (3-3-0)**

*Prerequisite:* Credit or enrollment in BIOL 1103

Cells and tissues of the human body and its skeletal, muscular, integumentary, nervous and sensory systems. (BIOL 2301)

**1304 Human Anatomy and Physiology II (3-3-0)**

*Prerequisite:* BIOL 1303 and credit or enrollment in BIOL 1104.

Continuation of the study of the human body, with emphasis on the endocrine, circulatory, respiratory, digestive, excretory and reproductive systems. (BIOL 2302)

- 1310 Introduction to Biology I (3-2-2)**  
*Prerequisite: Credit or enrollment in ENG 1301.*  
*Laboratory fee required: \$12.*  
 Integrated lecture/laboratory course for non-science majors. This course will include a study of the scientific method, how it compares to other methods of inquiry, and the relationship between science and technology. Emphasis will be placed on the biology of the individual including composition of human cells, the organization of the human body, and the functions of its organ systems. Issues related to animal experimentation, genetic engineering, cloning, human reproduction, and contraception will be discussed. Laboratory activities will be experimental in nature, and include the use of a variety of instruments and techniques used by scientists to study biological phenomena.
- 1312 Introduction to Biology II (3-2-2)**  
*Prerequisite: BIOL 1310.*  
*Laboratory fee required: \$12.*  
 Integrated lecture/laboratory course for non-science majors. This course will expand the study of biology to the environment outside the human body. Major themes will include adaptation to environmental conditions and change, evolution, the diversity of life forms, how humans interact with and affect other organisms, overpopulation, and human alteration of the physical environment. Laboratory activities will be investigative in nature and relate to the lecture topics.
- 2306 Fundamentals of Nutrition (3-3-0)**  
*Prerequisite: BIOL 1303 or CHEM 1305 or their equivalents.*  
 Food, nutrients, and their digestion, absorption and metabolism in humans are studied. Regional and cultural diet patterns are discussed. Nutritional assessment procedures are performed. (BIOL 1322)
- 3102 General Ecology Laboratory (1-0-3)**  
*Prerequisite: Credit or enrollment in BIOL 3302*  
 Explore theoretical concepts and practical applications in ecology. Population dynamics will be investigated using computer simulations. Field sampling of local plant and animal populations will expose students to practical techniques of data collection and analysis.
- 3103 General Genetics Laboratory (1-0-3)**  
*Prerequisite: Credit or enrollment in BIOL 3303.*  
*Laboratory fee required: \$12.*  
 Laboratory topics designed to mimic classical genetic investigations. Experiments focus on the use of *Drosophila melanogaster*. Students conduct individual and group research projects.
- 3104 Vertebrate Embryology Laboratory (1-0-3)**  
*Prerequisite: Credit or enrollment in BIOL 3304.*  
*Laboratory fee required: \$12.*  
 Appropriate exercises and experiments that illustrate some of the basic concepts, experimental techniques and facts presented in BIOL 3304.
- 3105 Human Anatomy Laboratory (1-0-3)**  
*Prerequisite: Credit or enrollment in BIOL 3305.*  
 Appropriate exercises and activities that illustrate the techniques, concepts, and facts presented in BIOL 3305.
- 3110 Plant Identification Laboratory (1-0-3)**  
*Prerequisite: Credit or enrollment in BIOL 3310.*  
*Laboratory fee required: \$12.*  
 Emphasizes plant identification and naming of plants from selected families of plants. A collection of local native plants will be required with appropriate scientific naming including family, genus, and species.
- 3120 Human Physiology Laboratory (1-0-3)**  
*Prerequisite: Credit or enrollment in BIOL 3320.*  
*Laboratory fee required: \$12*  
 Appropriate exercises and experiments that illustrate techniques, facts, and concepts presented in BIOL 3320.
- 3130 Plant Biology Laboratory (1-0-3)**  
*Prerequisite: Credit or enrollment in BIOL 3330.*  
*Laboratory fee required: \$12.*  
 Laboratory investigations and experimental analysis regarding the biology of plants, including plant taxonomy, morphology, anatomy, reproductive biology, nutrient requirements, photobiology, hormonal regulation, ecology, plant tissue culture and applications.
- 3140 Biology of Fungi Laboratory (1-0-3)**  
*(Cross-listed as MBIO 3150. Credit may not be earned for both.)*  
*Prerequisite: Credit or enrollment in BIOL 3340.*  
*Laboratory fee required: \$12.*  
 A study of the principles and applications of techniques for isolation, culture, and identification of fungi; and a study of the characteristics of fungal growth, nutrition, metabolism and genetics.
- 3150 Ornithology Laboratory (1-0-3)**  
*Prerequisite: Credit or enrollment in BIOL 3350.*  
 Field and museum laboratories will emphasize aspects of morphology, ecology and behavior, as well as taxonomy and identification of local bird species. Weekend field trips will be required.
- 3300 Undergraduate Research (3-0-9)**  
*Prerequisite: Approval by Natural Sciences advisor, minimum GPA of 2.5, and permission of instructor.*  
 Independent investigation of a specific topic or problem in biology research under the direction of a selected faculty member.
- 3301 Evolution of the Earth and its Inhabitants (3-3-0)**  
*(Cross-listed as GEOL 3301. Credit may not be earned for both.)*  
*Prerequisite: One year of biology or geology.*  
 Analysis of the concepts and discoveries that led Darwin to propose his theory of natural selection to explain evolution and the subsequent lines of evidence in both geology and biology that substantiate his ideas and unify our understanding of the relationships of various organisms to each other. Specific groups of organisms will be discussed in relation to morphological changes through time as well as adaptations that may occur due to environmental changes and other variables.

- 3302 General Ecology (3-3-0)**  
*Prerequisite: BIOL 1302/1102, MATH 1404 or 1505 and enrollment or credit in BIOL 3102*  
 Introduction to the major theories in ecology with particular emphasis on mathematical investigations of population dynamics, community ecology, and evolutionary ecology. Movement of energy and nutrients through ecosystems will also be covered
- 3303 General Genetics (3-3-0)**  
*Prerequisite: BIOL 1302/1102, CHEM 1308/1108, and credit or enrollment in BIOL 3103.*  
 Fundamental principles of genetics including Mendelian inheritance, linkage, the chemical basis of genetics, mutations and chromosomal aberrations.
- 3304 Vertebrate Embryology (3-3-0)**  
*Prerequisite: BIOL 1302/1102, CHEM 1308/1108, and credit or enrollment in BIOL 3104.*  
 A study of the development of the vertebrate body from fertilization to birth or hatching, with emphasis on the frog, chicken, pig and human.
- 3305 Human Anatomy (3-3-0)**  
*Prerequisite: 8 hours of biology, CHEM 1308/1108, and enrollment in BIOL 3105.*  
 A study of the structure of the human body using a systems approach. System and structural interactions will be examined. Structural and functional relationships will also be assessed.
- 3310 Plant Identification (3-3-0)**  
*Prerequisite: BIOL 1302/1102 and credit or enrollment in BIOL 3110.*  
 A study of the principles of naming, identification and classification of plants with an emphasis on the characteristics of select families of flowering plants.
- 3320 Human Physiology (3-3-0)**  
*Prerequisite: 8 hours of biology, CHEM 1308/1108 and credit or enrollment in BIOL 3120.*  
 A study of the function of the human body using a systems approach. Course will focus on the interaction of body systems and the maintenance of homeostasis. Some study of major disease processes associated with each system will be included.
- 3330 Plant Biology (3-3-0)**  
*Prerequisite: BIOL 1302/1102, CHEM 1308/1108, and credit or enrollment in BIOL 3130.*  
 Comprehensive analysis regarding the biology of plants, including plant taxonomy, morphology, anatomy, physiology, reproduction, development, ecology, ethnobotany and biotechnology.
- 3340 Biology of Fungi (3-3-0)**  
*(Cross-listed as MBIO 3350. Credit may not be earned for both.)*  
*Prerequisite: BIOL 1302/1102, CHEM 1308/1108 or credit or enrollment in BIOL 3140.*  
 A comprehensive study of fungi with emphasis on higher fungi. Course includes aspects of the fungal body, growth, sporulation, reproduction and diversity.
- 3350 Ornithology (3-3-0)**  
*Prerequisite: BIOL 1302/1102*  
 The biology of birds, including evolutionary history, functional morphology, physiology, ecology, and behavior. The course will explore the adaptations characteristic of the different orders of birds with particular emphasis on the local avian community.
- 3399 Directed Study in Biology (3-3-0)**  
*Prerequisite: Approval of the department chair and dean, junior standing, minimum GPA of 3.0.*  
 Intensive in-depth study of various topics under the guidance of a member of the biology faculty.
- 4110 Histology Laboratory (1-0-3)**  
*Prerequisite: Credit or enrollment in BIOL 4310.*  
*Laboratory fee required: \$12.*  
 Appropriate exercises and experiments that illustrate some of the basic techniques, concepts and facts presented in BIOL 4310.
- 4113 Parasitology Laboratory (1-0-3)**  
*(Cross-listed as MBIO 4113. Credit may not be earned for both.)*  
*Prerequisite: Credit or enrollment in BIOL 4313.*  
*Laboratory fee required: \$12.*  
 Appropriate exercises and experiments that illustrate some of the basic techniques, concepts and facts presented in BIOL 4313.
- 4210 Biology Seminar (2-2-0)**  
*Prerequisite: Senior standing and majoring in an area of life science.*  
 Presentations and discussions related to recent research accomplishments in biology and biotechnology including student research presentations.
- 4220 Computational Biology (2-2-0)**  
*Prerequisite: MATH 1404, MATH 3303 or SOS 3312, 1 upper-level course in biology or chemistry.*  
 Study of the principles of bioinformatics and computer modeling. Students will learn to evaluate the strengths and weaknesses of bioinformatics programs and computer models of biological systems. Work with computer models to explore problems in biology and bioinformatics. Computer expertise is not required.
- 4230 Advanced Laboratory in Cell and Molecular Biology (2-0-6)**  
*(Cross-listed as MBIO 4230. Credit may not be earned for both.)*  
*Prerequisite: One of the following: BIOL 4320, BIOL 4330, CHEM 4140, MBIO 4310.*  
*Laboratory fee required: \$24.*  
 Introduction to modern techniques in the manipulation of genes, and their introduction and regulation in eukaryotic cells. Techniques include polymerase chain reaction, in vitro mutagenesis, and fluorescence microscopy. Laboratory work emphasizes the design and carrying out of student-designed protocols.

**4260 Environmental Laboratory and Field Studies (2-0-6)**

*Prerequisite:* credit for BIOL 1302/1102, CHEM 1308/1108, GEOL 1306/1106 and credit or enrollment in either BIOL 4360, CHEM 3320 or GEOL 3303. *Laboratory fee required:* \$24.

Intensive laboratory and field investigations to illustrate principles and current concepts presented in BIOL 4360, CHEM 3320 and GEOL 3303 by sampling, measuring and analyzing biological, chemical and physical factors of select environments, with emphasis on the activities of humans and their effects on ecosystems.

**4303 Human Genetics (3-3-0)**

*Prerequisite:* BIOL 3303/3103

A study of inherited traits in humans with emphasis on the mapping of the human genome, molecular mechanisms of disease, Karyotyping and chromosomal abnormalities, genetic testing, gene therapy, and ethical issues associated with human genetics.

**4305 Physiological Ecology of Vertebrates (3-3-0)**

*Prerequisite:* BIOL 1302 and credit or enrollment in CHEM 3301.

Focus on mechanisms used by vertebrates to adapt to their natural habitats. Topics include the relationship between evolution and adaptation, nature and levels of adaptation, mechanisms of adaptation and the major adaptations of selected vertebrates. Emphasis on adaptation to extreme environments.

**4310 Histology (3-3-0)**

*Prerequisite:* BIOL 1302/1102, CHEM 1308/1108, and credit or enrollment in BIOL 4110.

*Laboratory fee required:* \$12.

A comprehensive overview of the microscopic and sub-microscopic anatomy of the vertebrate body, with emphasis on humans. Special topics include histochemistry, tissue culture and pathophysiology.

**4313 Parasitology (3-3-0)**

*(Cross-listed as MBIO 4313. Credit may not be earned for both.)*

*Prerequisite:* BIOL 1302/1102, CHEM 1308/1108, and credit or enrollment in BIOL 4113.

Introduction to parasitism as a biological concept and a survey of specific parasites of medical and veterinary importance. Additional topics include the relationship of opportunistic parasites in the treatment of AIDS, immunodiagnosis and the status of vaccine development for parasitic diseases.

**4320 Cellular Biology (3-3-0)**

*Prerequisite:* BIOL 1302/1102, CHEM 1308/1108, and junior-level standing. CHEM 3302/3202 is recommended.

The composition, structure, functions and dynamics of cells. Topics include interrelations of organelles, molecular transport and membrane trafficking, cytoskeletal interactions, enzymatic catalysis and metabolism, nucleocytoplasmic relationships, intercellular communications and laboratory analyses.

**4325 Advanced Microscopy (3-1-6)**

*(Cross-listed as GEOL 4325. Credit may not be earned for both.)*

*Prerequisite:* 16 hours of laboratory-based science including 8

hours at the upper level, and approval of instructor.

*Laboratory fee required:* \$24.

Instrumentation principles and laboratory exercises associated with the applications of a variety of microscopes and associated techniques, including preparation of samples, light microscopy (bright-field, darkfield, phase-contrast, polarized and fluorescent), scanning electron microscopy, transmission electron microscopy, and X-ray microanalysis.

**4330 Molecular Biology (3-3-0)**

*Prerequisite:* BIOL 3303 or equivalent.

Introduction to the molecular aspects of gene regulation in eukaryotic cells. Eukaryotic gene regulation is explored in the context of cell cycle regulation, cell differentiation, and cancer. The course emphasizes study of the primary research literature and the creation and testing of hypotheses using current technology.

**4340 Animal Behavior (3-3-0)**

*Prerequisite:* BIOL 1302/1102 and ENG 1302.

Behavioral capacities of the animal kingdom, with emphasis on methods of study, instinctive behavior, the biological basis of behavior, learning and intelligence and social behavior.

**4350 Social Biology (3-3-0)**

*Prerequisite:* 8 hours of biology, ENG 1302, PSY 1303 or SOC 1303, and junior standing.

This discussion-format course is intended to bring together ideas and students from the disciplines of biology, psychology, sociology and anthropology. Its focus is on the area of animal behavior that involves the interaction of conspecifics. Topics to be discussed include aggression, courtship, parental behavior, altruism, behavior genetics, dominance, competition and cooperation, and behavioral ecology.

**4360 Environmental Biology (3-3-0)**

*Prerequisite:* BIOL 1302/1102, CHEM 1308/1108, and 4 hours of biology above the 1000-level.

Ecological principles and current topics regarding the interrelationships among organisms and their environments, including analysis of human activities that impact natural ecosystems and cause environmental problems.

**4190 - Selected Topics in Biology**

**4490** *Prerequisite:* Varies according to topic.

Selected topics in upper-level biology according to the needs and interests of the students.

**4380 Field Experience in Biology**

*Prerequisite:* At least 85 hours and department approval

Field experience integrates theory learned in biology classes with practical laboratory or field experience. Students are placed in laboratories, clinical settings, or under the tutelage of a field researcher. May be repeated for additional credit; 6 hours may be applied toward a degree. A summary oral and written report must be presented to the Natural Sciences faculty.

**4399 Senior Honors Thesis**

*Prerequisite:* Senior standing and enrollment in the Honors Program in the Natural Sciences.

A research project, supervised by a member of the natural sciences faculty or a scientist at an affiliated research institution or laboratory. The completed research project must be presented in both written and oral form to the science faculty. No more than six hours credit for this course may be applied toward a degree.

## Graduate Courses

### 6301 Selected Topics in Advanced Biology (3-3-0)

*Prerequisite:* Graduate Standing

Possible topics include modern genetics, biotechnology, immune disorders and health, urban science and ecology, computational biology, and advanced investigative methods in biology.

## CHEM (Chemistry)

### 1105 Introductory Chemistry Laboratory I (1-0-3)

*Prerequisite:* Credit or enrollment in CHEM 1305.

*Laboratory fee required:* \$12.

Appropriate laboratory experiments for the student who will not be a professional physical scientist. The experiments support the principles of chemistry developed in the lecture portion of the course and illustrate some of the basic approaches to chemical problems. (CHEM 1105)

### 1107 General Chemistry Laboratory I (1-0-3)

*Prerequisite:* Credit or enrollment in CHEM 1307.

*Laboratory fee required:* \$12.

Experiments which illustrate basic laboratory techniques and procedures, physical and chemical properties, stoichiometry, solutions, and thermochemistry. (CHEM 1111)

### 1108 General Chemistry Laboratory II (1-0-3)

*Prerequisite:* CHEM 1107 and credit or enrollment in CHEM 1308.

*Laboratory fee required:* \$12.

Emphasis on reactions in aqueous solutions, gas laws, equilibrium, kinetics and qualitative analysis, with an introduction to instrumental analysis. (CHEM 1112)

### 1304 Chemistry in Society (3-2-2)

*Laboratory fee required:* \$12.

This course presents the relevance of chemistry in everyday life, particularly in applications to environmental problems such as air pollution, ozone depletion, global warming, energy, water purity and acid rain. Fundamental concepts in chemistry introduced on a need-to-know basis include stoichiometry, atomic structure, chemical bonding, states of matter, electrolytic solutions and chemical reactions. This course meets the common core requirement in natural sciences.

### 1305 Introductory Chemistry I (3-3-0)

*Prerequisite:* Credit or enrollment in CHEM 1105 and credit or enrollment in MATH 1301 or MATH 1310.

The composition, properties and interaction of substances necessary to produce new materials. Topics include stoichiometry, atomic structure, chemical bonds, states of matter, electrolyte solutions and chemical reactions. (CHEM 1305)

### 1307 General Chemistry I (3-3-0)

*Prerequisite:* Credit or enrollment in MATH 1301, and CHEM 1107, and one year of high school chemistry or CHEM 1305.

Fundamentals of general chemistry. Descriptive material is correlated with the basic chemical principles and their applications. Modern concepts of atomic and molecular structure, chemical bonding, the gaseous state and the kinetic molecular theory of matter are analyzed. Emphasis on stoichiometric calculations of mass and molar relationships, energy relations and intermolecular forces. Credit for both CHEM 1305 and CHEM 1307 may not be applied toward a degree. (CHEM 1311)

### 1308 General Chemistry II (3-3-0)

*Prerequisite:* A grade of C or better in CHEM 1307 and credit or enrollment in CHEM 1108.

A continuation of CHEM 1307. Topics include liquids and solids, intermolecular forces, chemical kinetics, thermodynamics, homogeneous, heterogeneous and ionic equilibrium, modern concepts of acids and bases, electrochemistry, coordination chemistry, nuclear chemistry and selected topics. (CHEM 1312)

### 3110 Quantitative Analysis Laboratory (1-0-3)

*Prerequisite:* Credit or enrollment in CHEM 3310. *Laboratory fee required:* \$12.

Quantitative methods of analysis including gravimetric, volumetric and instrumental. Instrumental methods will include absorption and emission spectroscopy, gas and liquid chromatography and electrochemical analysis.

### 3130 Physical Chemistry Laboratory I (1-0-3)

*Prerequisite:* Credit for or enrollment in CHEM 3330. *Laboratory fee required:* \$12.

Advanced experiments in physical chemistry including studies in thermodynamics, colligative properties of solutions, surface tension of surfactant containing solutions, solution viscosities, electrochemistry and the physical chemistry of polymeric materials. In addition to providing support for CHEM 3330, this course is designed to acquaint the student with the experimental approaches and laboratory techniques used in industrial research and development activities.

### 3132 Physical Chemistry Laboratory II (1-0-3)

*Prerequisite:* Credit for or enrollment in CHEM 3332. *Laboratory fee required:* \$12.

A continuation of CHEM 3130.

### 3201 Organic Chemistry Laboratory I (2-0-6)

*Prerequisite:* CHEM 1308/1108 and credit or enrollment in CHEM 3301.

*Laboratory fee required:* \$24.

Experiments illustrating basic techniques, synthesis, interpretation of spectra, use of molecular models and scientific literature.

### 3202 Organic Chemistry Laboratory II (2-0-6)

*Prerequisite:* CHEM 3301/3201 and credit or enrollment in CHEM 3302.

*Laboratory fee required:* \$24.

Experiments illustrating multistep synthesis, semimicro tech

niques, instrumental analysis, investigation of reaction mechanisms and qualitative analysis.

**3300 Undergraduate Research (3-0-9)**

*Prerequisite: Approval by Natural Science advisor and a minimum GPA of 2.5, and permission of instructor.*

Independent investigation of a specific topic or problem in chemistry research under the direction of a selected faculty member.

**3301 Organic Chemistry I (3-3-0)**

*Prerequisite: CHEM 1308/1108 and credit or enrollment in CHEM 3201.*

Fundamentals of organic chemistry. Topics include molecular orbital theory, stereochemistry, conformational analysis, reaction mechanisms, spectroscopy, nomenclature, physical properties, preparation and reactions of alkanes, alkyl halides, organometallics, alcohols and ethers.

**3302 Organic Chemistry II (3-3-0)**

*Prerequisite: CHEM 3301/3201 and credit or enrollment in CHEM 3202.*

A continuation of CHEM 3301, with emphasis on alkenes, alkynes, aromatic compounds, aldehydes, ketones, acids and derivatives, amines, amino acids, proteins, and carbohydrates.

**3310 Quantitative Analysis (3-3-0)**

*Prerequisite: CHEM 1308 and CHEM 1108 and credit or enrollment in CHEM 3110.*

A study of chemical equilibrium, reliability of measurements and the theory of applications of gravimetric, volumetric and instrumental methods of analysis.

**3320 Environmental Chemistry (3-3-0)**

*Prerequisite: BIOL 1302 and BIOL 1102; and CHEM 1308 and CHEM 1108.*

Chemistry and analysis of clean and polluted air and water. Environmental standards of the American Public Health Association and the US Environmental Protection Agency.

**3330 Physical Chemistry I (3-3-0)**

*Prerequisite: CHEM 3301, MATH 2402 and one year of general physics.*

Applications of the first and second laws of thermodynamics to gases, liquids, solutions and phase equilibria; applications of the third law to systems at equilibrium; chemical rate processes; elementary kinetic theory; and statistical thermodynamics with applications.

**3332 Physical Chemistry II (3-3-0)**

*Prerequisite: CHEM 3330.*

A study of the principles and theories for describing atomic and molecular structure and the experimental methods used for determining structure.

**3340 Inorganic Geochemistry (3-3-0)**

*(Cross-listed with GEOL 3340. Credit may not be earned for both.)*

*Prerequisite: GEOL 1305/1105 and CHEM 1308/1108.*

Examination of the Earth and earth processes through the application of chemical principles including fractionation and dis-

tribution of the elements, the chemical evolution of planetary interiors and interactions between Earth's lithosphere, hydrosphere and atmosphere. Topics include evaluation of theories and analysis of data relevant to geologic problems facing society such as the search for and utilization of mineral resources and the environmental implications of waste disposal and remediation.

**4140 General Biochemistry Lab I (1-0-3)**

*Prerequisite: Credit or enrollment in CHEM 4340. Laboratory fee required: \$12.*

Experiments in biochemistry to accompany CHEM 4340.

**4162 Advanced Inorganic Laboratory (1-0-3)**

*Prerequisite: Credit or enrollment in CHEM 4362.*

*Laboratory fee required: \$12*

This laboratory course is designed to supplement CHEM 4362. It will involve experiments that demonstrate the principles of inorganic chemistry and the techniques used by inorganic chemists for the synthesis and characterization of inorganic materials.

**4310 Instrumental Methods of Analysis (3-1-6)**

*Prerequisite: CHEM 3310/3110.*

*Laboratory fee required: \$24.*

Principles and applications of advanced instrumental methods of chemical analysis including UV-VIS, FT-IR, NMR, HPLC, GC/MS, and polarography. Major emphasis will be placed on the analysis of organic compounds.

**4340 General Biochemistry I (3-3-0)**

*Prerequisite: BIOL 1102 and BIOL 1302 and CHEM 3201 and CHEM 3301.*

Chemistry of the constituents of living matter, including carbohydrates, lipids, nucleic acids and proteins and their metabolism.

**4342 General Biochemistry II (3-3-0)**

*Prerequisite: CHEM 4340/4140.*

A continuation of CHEM 4340 with primary emphasis on the integration and control of the metabolism of cellular constituents.

**4360 Industrial Organic Chemistry (3-3-0)**

*Prerequisite: CHEM 3302/3202.*

A survey of the chemistry and industrial processes used to obtain the seven major organic compounds that are used as starting materials in the chemical industry. Also included is the synthesis of related derivatives of these base chemicals, their properties and industrial applications.

**4362 Advanced Inorganic Chemistry (3-3-0)**

*Prerequisite: Credit or enrollment in CHEM 3330, and/or CHEM 3310.*

An introduction to modern inorganic chemistry including a survey of the descriptive chemistry of the elements and a detailed study of the technology involved in the production and use of the most industrially significant inorganic materials.

**4364 Polymer Chemistry (3-3-0)**

*Prerequisite: CHEM 3302/3202.*

A study of the chemistry and technology of polymeric materials

including methods of polymerization, characterization and applications of polymers with an emphasis on structure-property relationships.

#### 4380 Field Experience in Chemistry

*Prerequisite:* At least 60 semester credit hours and approval of department chair.

Selected students are placed in jobs in their local community which are related to and reinforce their academic training. Positions are full time, salaried and last the duration of a semester. May be repeated once for additional credit. Recommended for students not already employed in their area of study.

#### 4399 Senior Honors Thesis

*Prerequisite:* Senior standing and enrollment in the Honors Program in the Natural Sciences.

A research project supervised by a member of the natural sciences faculty or a scientist at an affiliated research institution or laboratory. The completed research project must be presented in both written and oral form to the science faculty. No more than 6 hours credit for this course may be applied toward a degree.

### Graduate Courses

#### 6301 Selected Topics in Advanced Chemistry (3-3-0)

*Prerequisite:* Graduate Standing

Possible topics include thermodynamics and kinetics, chemistry of important biological reactions, properties and chemistry of polymers, and advanced investigative methods in chemistry.

## CIS (Computer Information Systems)

#### 1301 Introduction to Computer Based Systems (3-3-0)

*Prerequisite:* MATH 1300.

An overview of computer information systems, including computer hardware, software, procedures and systems, and human resources and their application in today's technological society. (Does not satisfy degree requirements in Engineering Technology.) (COSC 1301)

#### 2301 Computer Algorithms and Problem Solving Using C++ (3-3-0)

*Prerequisite:* Grade of C or better in CIS 1301 and MATH 1301.

Introduction to solving business problems through step-by-step instructions (algorithms) that can be implemented using computer programming languages. The focus is on structured programming using sequential, iterative, and selection processes. Topics includes data types, logic structures, control breaks, file handling, and search techniques. The C++ programming language is used to provide students with hands-on experience in implementing algorithms.

#### 3301 Systems Analysis and Design (3-3-0)

*Prerequisite:* Completion of the common core plus 18 additional hours and a grade of C or better in CIS 2301.

Concepts, skills, and techniques to effectively analyze and develop computer information systems in a team environment. Topics include systems thinking and systems development

based in an organizational context utilizing the Systems Development Life Cycle methodology to provide a strong conceptual and systematic framework. The various analytical and design skills and techniques to develop software are presented within this framework. Project management, computer-aided software tools, and other automated development technologies are introduced.

#### 3302 Management of Information Systems (3-3-0)

*Prerequisite:* Completion of the common core plus 18 additional hours and CIS 1301.

A survey course dealing with the managerial and technical environments within which computer information systems exist in business organizations. The student is introduced to a wide range of topics pertaining to the business use of information systems technology including systems development, computer operations, ethical and societal issues in information systems, and emerging technologies.

#### 3303 Computer Hardware, System Software and Architecture (3-3-0)

*Prerequisite:* Completion of the common core plus 18 additional hours and a grade of C or better in CIS 2301 or CS 1410.

This course presents a functional system level review of computing hardware and the organization of system components into architectural configurations. The principles of system software and its interaction with hardware will also be provided. In addition, a variety of operating systems internals and command languages will be covered.

#### 3304 Microcomputer Applications in Business (3-3-0)

*Prerequisite:* Completion of the common course plus 18 additional hours, and a grade of C or better in CIS 1301 or CS 1305.

An overview of computer applications, information needs in business and information systems. Microcomputer hardware and software applications also will be examined. The course reviews many software packages to support a microcomputer-based executive work station. Included are web development tools, electronic spreadsheets, file and database management systems and graphics packages.

#### 3305 Computer Networking and Data Communications (3-3-0)

*Prerequisite:* Completion of the common core plus 18 additional hours and a grade of C or better in CIS 3302 and CIS 3303.

Study of data communications and networking technology including digital data communication technologies, microcomputer-based networking and workstation components, local and wide area networks, management of networks, intelligent computer load sharing networks, distributed and decentralized data processing, and emerging technologies.

#### 3306 Database Management Systems (3-3-0)

*Prerequisite:* Completion of the common core plus 18 additional hours and a grade of C or better in CIS 3301 and CIS 3302.

Introduces the development of computer-based systems to manage business data. The organizational context of database management, concepts of data modeling, and database design are presented. Data file management, database implementa-

tion and data retrieval using query languages and graphical user interface are introduced. Database administration issues are discussed and new database technologies are introduced.

**3309 Computer Graphics in Business (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours and CIS 1301.*

Presents the needs and applications for graphics in business. Also covers developments such as laser printer, advanced display techniques and the principles of software packages that generate graphics. Hardware innovations, such as video imaging into computer graphics systems, light pen, mouse and other input techniques are also covered.

**3311 Programming Languages: Procedural, Nonprocedural and Fourth Generation (3-3-0)**

*Prerequisite: Grade of C or better in CIS 2301.*

Students are guided in the development of programs and implementation of systems through the use of procedural, non-procedural and fourth generation languages. The major strengths and weaknesses of each group in business systems applications are surveyed.

**3312 CIS Communication, Reporting and Documentation Techniques (3-3-0)**

*Prerequisite: CIS 3301 and ENG 3302 or departmental approval.*

A combination writing and speech course designed to sharpen the writing and speaking skills of the CIS specialist. The writing section of the course will include the documentation of the systems life cycle activities and the production of user, reference and training manuals. The speaking section of the course will include methods and techniques of presenting materials and information to large and small groups including the use of graphs, charts and narratives using overhead projectors and computer-generated materials.

**3314 Social Impact of Information Technology for Business (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours and CIS 1301 or equivalent computer literacy course.*

This course focuses on social issues of the new Information Age. Information technology proliferation is changing society in many important new ways. These changes impact how business will operate in the next millennium. Students will gain an understanding of these profound implications.

**3316 Supply Chain Information and Control Systems (3-3-0)**

*(Cross-listed as MGT 3316. Credit may not be earned for both.)*

*Prerequisite: Completion of the common core plus 18 additional hours and MATH 1305, and completion of, or enrollment in, BA 3300.*

Supply chain information systems including theoretical and practical understanding of hardware and software operations in the supply chain. This includes inventory management and tracking, supplier evaluation, physical distribution systems, and customer service using information systems. Technology includes bar coding, radio frequency tracking, and other automated data entry techniques in managing procurement operations. The role of documentation in domestic and international

trading are examined including the use of commercial invoicing, packing lists, ocean bills of lading, freight forwarding booking requests, shipper's export declarations, and certificates of origin.

**3319 Management of the Virtual Workplace (3-3-0)**

*(Cross-listed as ADM 3309. Credit may not be earned for both.)*

*Prerequisite: Completion of the common core plus 18 additional hours or instructor approval.*

Management of the virtual workplace encompassing telecommuters, entrepreneurs, and virtual office workers. Techniques include the use of e-mail, computerized meetings, virtual office design, web page development, and other forms of telecommunication as they become available. Simulation conducted via the Internet with other on-line participants.

**3321 Programming in Visual Basic (3-3-0)**

*Prerequisite: Grade of C or better in CIS 2301.*

Introduction to programming business applications using Microsoft Visual Basic. Topics include analysis, design, coding, testing, debugging, and implementing structured programs in the graphical programming environment while developing an understanding of object oriented programming.

**3325 Programming in COBOL (3-3-0)**

*Prerequisite: Grade of C or better in CIS 2301.*

Introduction to programming in COBOL that emphasizes the concept of structured programming. Students apply a structured, multiphase program development process that features a series of steps involving understanding a problem, formal problem definition, graphical design methodologies such as flow charts and structure charts, and developing program specifications using pseudocode.

**3330 Programming in Java (GUI) (3-3-0)**

*Prerequisite: A grade of C or better in CIS 2301.*

An introduction to programming in Java that emphasizes the concept of object oriented programming, the design of graphical user interfaces, and the development of event-driven programs. Topics include objects, classes, instances, methods, applets and applications, control structures in Java, Java arrays (as objects), strings and characters, graphics, multimedia, and exception handling.

**3399 Directed Study in Computer Information Systems**

*Prerequisite: Approval of department chair and dean.*

Selected topics in computer information systems. Intensive individual study under the guidance of a member of the CIS faculty.

**4301 Information Resource Planning and Management (3-3-0)**

*Prerequisite: CIS 3306 and MGT 3301.*

An overview of corporate strategic, tactical and operational planning and control techniques and methodologies. Elements of information systems planning and control include facilities, equipment, technical specialization, training and project definition and priority setting.

**4303 Strategic Information Systems (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours and CIS 1301 or CS 1305.*

This course emphasizes the use of computing and information technology for the strategic advantage of and issues involved in bringing advanced, computer-based technology and methods into the organization. Additionally, it covers the changing nature of the information technology profession as systems professionals are impacted by the use of strategic information systems.

**4305 Management of Telecommunications Systems (3-3-0)**

*Prerequisite:* Grade of C or better in CIS 3305.

This course is a continuation of CIS 3305. It deals with managing telecommunications technologies and focuses on techniques for planning, organizing, directing and controlling voice and data communications environments.

**4306 Advanced Database Management Systems (3-3-0)**

*Prerequisite:* Grade of C or better in CIS 3306.

Provides an understanding of large scale database environment and data warehousing and the skills to develop them. Students learn to use Structured Query Language to create an integrated database application. Topics include modeling, design, and implementation of data warehouses; business intelligence techniques, and emerging trends in data management.

**4309 Computer Control and Audit (3-3-0)**

*(Cross-listed as ACC 4309. Credit may not be earned for both.)*

*Prerequisite:* Completion of the common core plus 18 additional hours, CIS 1301 and ACC 2302.

A study of the skills, tools and procedures needed to effectively evaluate computer-based information systems controls. Concepts and techniques used in Information Systems Audits are examined from general, industry-specific and technological perspectives. Exposure to business impact analysis, risk analysis and disaster recovery analysis is provided with emphasis on varying requirements of the business community.

**4310 Advanced Computer Control and Audit (3-3-0)**

*Prerequisite:* CIS 4309 and ACC 4308.

Continuation of CIS 4309/ACC 4308. A study of advanced techniques and procedures for auditing modern information systems technology in business situations. Students will be exposed to the processes of evidence collection and assessment of computing and networking technologies as well as the effective management of information resources in modern business. Course includes sections on managing the EDP audit function in business and governmental organizations.

**4311 Computer Technology and the Future Seminar (3-3-0)**

*Prerequisite:* Completion of the common core plus 48

additional hours and declared business major. This course will study, discuss and debate current issues and trends in the field of computer technology as it relates to business, government and society. The broader issues of the role of technology in the future of mankind are also expected.

**4312 Systems Development Project**

*Prerequisite:* A grade of C or better in CIS 3301, 3305, 3306, senior standing and successful completion of Writing Proficiency Exam.

This is a capstone course. Emphasis is placed on the development of a computer application through life cycle methodol-

ogy. In addition, students acquire additional knowledge in the specific concepts and skills of project management. Use of project management methods, project scheduling and control techniques, formal presentations and group dynamics in the analysis of information systems.

**4313 Electronic Commerce (3-3-0)**

*Prerequisite:* Completion of the common core plus 18 additional hours and a grade of C or better in CIS 3306.

Introduction to the business and technical aspects of electronic commerce. Topics include types and models of commerce conducted over the Internet, software and hardware needs, payment methods, and security issues. Streamlining value chain activities, legal and ethical issues, business plans for electronic commerce ventures, issues related to electronic government, and emerging electronic commerce solutions are discussed. A basic electronic web presence is developed.

**4314 Electronic Commerce Systems Development (3-3-0)**

*Prerequisite:* Grade of C or better in CIS 3305 and CIS 4313.

Addresses advanced topics in the development and implementation of electronic commerce solutions. Topics include web design principles, setup and configurations of business web servers, and design and development of web-based database and spreadsheet applications. Involves client-side and server-side scripting.

**4316 Information Security Management (3-3-0)**

*Prerequisite:* Grade of C or better in CIS 3305 or departmental approval.

Considers the technical, operational, and managerial issues of computer systems and network security in an operational environment. Addresses threats to computer security including schemes for breaking security and techniques for detecting and preventing security violations. Emphasis on instituting safeguards, examining the different types of security systems, and applying the appropriate level of security for the perceived risk.

**4317 Advanced Programming in C++ (3-3-0)**

*Prerequisite:* Grade of C or better in CIS 2301.

Advanced topics in development and implementation of algorithms in the C++ programming language to provide solutions to business problems. Students learn to use a number of data structures such as strings, multilevel lists, and files. Additional topics include algorithms for creating, organizing, searching, and updating data; the use of recursion; arrays; records; sets; pointers; lists; stacks; queues; trees; and heaps.

**4320 Decision Support and Knowledge Systems (3-3-0)**

*Prerequisite:* Grade of C or better in CIS 3306.

Study of how information systems are used for better decision making in organizations. Students learn the skills necessary for effective and strategic application of decision support technologies to advance the quality of problem identification and associated solutions. Survey of decision making models and styles, hardware and software technologies used, development of decision support systems, data warehouses, data mining, expert systems, and knowledge management.

- 4321 Advanced Programming in Visual Basic (3-3-0)**  
*Prerequisite: Grade of C or better in CIS 3321.*  
 Advanced topics in designing and implementing Microsoft Visual Basic applications. Topics include developing and maintaining database programs and files, creating and managing Active X documents and controls, programming for the Internet, and using Microsoft's graphical programming environment to develop expertise in object oriented programming.
- 4325 Advanced Programming in COBOL (3-3-0)**  
*Prerequisite: Grade of C or better in CIS 3325.*  
 Development and maintenance of COBOL programs as part of overall information systems. Students are also introduced to web programming using COBOL, and the role of COBOL in emerging environments.
- 4330 Advanced Programming in Java (3-3-0)**  
*Prerequisite: Grade of C or better in CIS 3330.*  
 An advanced course in Java programming to develop scalable applications and distributed systems. Topics include technologies such as Extensible Markup Language, security, Java Database Connectivity, and advanced graphical user interface.
- 4380 Field Experience in CIS (3-0-0)**  
 For more information and qualifications see Field Experience in the College of Business section of this catalog and/or the department chair for your declared major.
- 4390 Special Topics in Computer Information Systems (3-3-0)**  
 An investigation of the rapidly changing field of CIS, including such topics as computers and society, micro-and minicomputers and computer simulation models.

## CJ (Criminal Justice)

- 1301 Crime, Law and Society (3-3-0)**  
*Prerequisite: Completion or co-enrollment in ENG 1301.*  
 An overview and description of the criminal justice system is presented, including its goals, its relationship to other governmental bodies and its relationship to society. Also included is the study of the basic components of the criminal justice system. (CRIJ 1301)
- 2301 The Police System (3-3-0)**  
*Prerequisite: CJ 1301.*  
 Historical analysis of the police function and how it has evolved into the contemporary professional police function. Overview of philosophical and ethical issues surrounding the role of the police in a democratic society and a survey of contemporary and traditional police policies and practices. (CRIJ 2328)
- 2302 The Criminal Court System (3-3-0)**  
*Prerequisite: CJ 1301.*  
 The history, philosophy and basic concepts of the legal system are studied. The criminal justice legal process from inception to appeal is also presented. (CRIJ 1306)
- 2303 The Correctional System (3-3-0)**  
*Prerequisite: CJ 1301.*  
 The historical and philosophical development of the correctional system is examined. The role of correctional agencies,

their personnel and their relationship to the criminal justice system is emphasized. (CRIJ 2 3 1 3 )

- 3300 Research Methods in Criminal Justice (3-3-0)**  
*Prerequisite: CJ 1301, CJ 2301, CJ 2302, CJ 2303.*  
 Introduction to the design and implementation of research in the field of criminal justice. The principles of research methods and design for use in policy analysis, content analysis and analysis of secondary data will be presented. Considerable attention will be given to the application of design and implementation as it relates to criminal justice within a real world context.
- 3301 Criminology (3-3-0)**  
*Prerequisite: CJ 1301, PSY 1303 or SOC 1303.*  
 An overview of criminal behavior, its impact on the criminal justice system and theories of criminal behavior are presented.
- 3302 Criminal Investigation (3-3-0)**  
*Prerequisite: Completion of Criminal Justice core.*  
 The history and theory of criminal investigation, investigative procedures, conduct at the crime scene, collection and preservation of evidence and problems of successful prosecution are studied. The law and procedure affecting case preparation and presentation are emphasized.
- 3304 Criminal Law (3-3-0)**  
*Prerequisite: Completion of Criminal Justice core.*  
 This course examines the elements of the various specific crimes against persons and property, along with associated legal concerns. General legal principles are studied and related to the Texas Penal Code.
- 3305 Criminal Evidence and Procedure (3-3-0)**  
*Prerequisite: Completion of Criminal Justice core.*  
 Laws of evidence and procedure are studied through examination of case law and the Texas Code of Criminal Procedure. Emphasis is given to the rules governing admissibility of various classes of evidence, as well as their exceptions.
- 3306 Crime and Delinquency (3-3-0)**  
*Prerequisite: Completion of Criminal Justice core.*  
 Delinquent behavior and the role and responsibility of the criminal justice system in controlling delinquency are examined. Special emphasis is placed on social problems contributing to delinquency as well as current treatment methods.
- 3307 Community Oriented Policing (3-3-0)**  
*Prerequisite: Completion of Criminal Justice core.*  
 The nature of the community and its impact on the police is explored. Those factors that contribute to conflict and inhibit police-community relations are studied in order to discover how the police and the community can achieve a more cooperative relationship.
- 3308 Juvenile Justice System (3-3-0)**  
*Prerequisite: Completion of Criminal Justice core.*  
 The history, philosophy and role of the juvenile court with emphasis on jurisdiction, treatment, criminal proceedings and the family court is presented.

**3309 Security and the Law (3-3-0)**

*Prerequisite: Completion of Criminal Justice core.*

The functional aspects of security investigation and the legal restrictions placed on non-governmental related activities are presented. These include industrial, commercial, campus and private security entities.

**3311 Ethics of Social Control (3-3-0)**

*Prerequisite: Junior or senior standing, or permission of instructor.*

This course explores the role of law in controlling behavior, examines questions of individual responsibility and governmental authority and covers professional ethics in law, corrections and law enforcement.

**3312 Institution-Based Corrections (3-3-0)**

*Prerequisite: Completion of Criminal Justice core.*

This course is a comprehensive examination of the history, philosophy and management of prisons. The effectiveness of jails and prisons for the purposes of retribution, incapacitation, deterrence and rehabilitation is evaluated.

**3313 Community-Based Corrections (3-3-0)**

*Prerequisite: Completion of Criminal Justice core.*

The history, philosophy and legal authority of community correctional alternatives is presented. Community corrections include probation, parole, fines, diversion, restitution, community treatment centers, work/study release centers and half-way houses.

**3316 Victimology (3-3-0)**

*Prerequisite: Junior standing.*

Examines the role of the victim in the criminal process. Emphasis is given to victims' rights and responsibilities)

**3317 Race and Crime (3-3-0)**

*Prerequisite: Junior standing.*

Examines impact of race on victimization, criminal behavior and type and seriousness of legal sanctions. Emphasis is given to disproportionate representation of minorities in the criminal justice system.

**3318 Sex Crimes (3-3-0)**

*Prerequisite: Completion of Criminal Justice core.*

Examines sexual activities prohibited by law with special attention given to activities of rape, prostitution, homosexuality, abortion issues, pornography, some serial murders, and juvenile related offenses. Emphasis will also be given to causative factors and societal attitudes concerning these crimes and others which have a sexual orientation.

**3319 Legal Research (3-3-0)**

*Prerequisite: Junior standing.*

Study of the principles of legal problem solving using research materials available in a law library. Students will be introduced to various legal texts, Shepard's citations, statutes [PE1], case reporters. Assignments involve practical research applications.

**3320 Statistics in Criminal Justice (3-3-0)**

*Prerequisite: CJ3300 or departmental approval and MATH 1301 or 1310.*

Introduction to data analysis in criminal justice. Emphasis will be placed on the application of quantitative measures to the study of the prevention, interdiction and suppression of criminal behavior. The course will examine both descriptive and inferential statistics. In addition, students will be introduced to data analysis through the use of statistical computer software.

**4301 Police Management (3-3-0)**

*Prerequisite: Completion of Criminal Justice core.*

Traditional and contemporary police organization, management and administration methods and theories are reviewed and analyzed. Special emphasis is given to planning, supervision and policy development.

**4302 Organized Crime (3-3-0)**

*Prerequisite: Senior standing and completion of Criminal Justice core.*

A historical survey is made of organized crime including basic knowledge of the organizational function and structure of crime. Societal factors, preventive techniques and control systems are stressed.

**4303 Vice, Drugs and the Law (3-3-0)**

*Prerequisite: Senior standing and completion of Criminal Justice core.*

The historical, philosophical and legal aspects of vice activities and drugs are examined. An analysis is made of the reactions of the police and society to victimless crime. The classification, description and extent of the drug problem is surveyed.

**4304 White Collar Crime (3-3-0)**

*Prerequisite: Completion of the Criminal Justice core and senior standing.*

A comprehensive examination of the nature, extent and consequences of white collar crime. Emphasis on explanation from the criminological perspective and sanctioning from a multicultural perspective.

**4305 Correctional Counseling (3-3-0)**

*Prerequisite: CJ 3312.*

An introduction to the philosophy and objectives of counseling. The prison is viewed as a community and the group counseling process in this setting is given special attention. Problems relating to custody and treatment are examined.

**4306 Domestic Terrorism (3-3-0)**

*Prerequisite: Senior standing.*

This course will examine the development, organization and activities of the various groups that have been labeled as threats to state and national security. Special attention will be given to their disproportionate impact on the American Criminal Justice System.

**4307 Legal Rights of the Convicted (3-3-0)**

*Prerequisite: CJ 3312.*

A comprehensive analysis of the legal rights of prisoners, probationers and parolees derived from case law, statutes and constitutional principles on both state and federal levels.

**4309 Seminar in Criminal Justice Films (3-3-0)**

*Prerequisite: Senior standing.*

This course examines the substance contributions of films, a familiar aspect of American culture, to citizen attitudes and stereotypes about the criminal justice system, criminology and the law.

**4310 Criminal Court Administration (3-3-0)**

*Prerequisite: Completion of Criminal Justice core and 3 additional hours in law-related course work.*

The role of the criminal court manager is explored. The organization, structure and operations of criminal courts are examined through the application of principles of supervision, management and human relations.

**4311 Security Management (3-3-0)**

*Prerequisite: CJ 3309.*

The organization, administration and management of the security function are examined from the perspective of efficiency and effectiveness. This course surveys organizations in business, industry and government. Particular emphasis is placed upon policy and decision-making, training, personnel development and budgeting.

**4312 Research Topics (3-3-0)**

*Prerequisite: Criminal justice major, senior standing and department approval.*

This course provides a unique opportunity for the criminal justice major to conduct in-depth research into an area of the student's field of interest. A major paper is required.

**4313 International Criminal Justice (3-3-0)**

*Prerequisite: Criminal justice major and senior standing.*

Examines and analyzes the structure and operation of various criminal justice systems from an international perspective.

**4314 Women and the Criminal Justice System (3-3-0)**

*Prerequisite: Criminal justice major and senior standing.*

Provides an in-depth look at women's participation in three areas of criminal justice-as offenders, as victims and as criminal justice professionals.

**4370 Senior Seminar in Criminal Justice (3-3-0)**

*Prerequisite: Criminal Justice major and senior standing.*

Students will address current issues in criminal justice. Analytical skills to frame the problem and suggest solutions will be stressed. The oral and written presentations in class will emphasize problem solving techniques and analysis. Ethical, political and social issues that impact criminal justice research will also be examined.

**4380 Field Experience in Criminal Justice**

*Prerequisite: Criminal justice major, junior standing, 2.5 GPA and departmental approval.*

Selected students are placed in criminal justice agencies for 120 hours, applying academic training to practical situations. Recommended for criminal justice majors who are not employed in the criminal justice system. Practitioners, however, may apply for an internship in an area of criminal justice other than the one in which they normally function.

**4390 Special Topics in Criminal Justice (3-3-0)**

*Prerequisite: Criminal justice major and senior standing.*

Selected topics or current issues in criminal justice, taught by faculty, visiting lecturers or others who possess a special area of expertise.

**4680 Field Experience in Criminal Justice**

*Prerequisite: Criminal justice major, junior standing, 2.5 GPA and departmental approval.*

Selected students are placed in criminal justice agencies for 240 hours, applying academic training to practical situations. Recommended for criminal justice majors who are not employed in the criminal justice system. Practitioners, however, may apply for an internship in an area of criminal justice other than the one in which they normally function.

## Senior/Graduate Courses

No more than six hours of 500-level courses may be taken for undergraduate credit by senior CJ majors. Department approval is required.

**5360 Security and Crisis Management: Theories and Practices (3-3-0)**

*Prerequisite: CJ 1301, CJ 2301, CJ 2302, CJ 2303, senior/graduate standing.*

The management of the security function is examined through the study of management strategies and case studies. Discussions and research will include policies and procedures, fiscal management, audits and surveys and organizational structures and operations and crisis management.

**5362 Risk Analysis and Abatement (3-3-0)**

*Prerequisite: CJ 1301, CJ 2301; CJ 2302, CJ 2303, senior/graduate standing.*

This course surveys a variety of procedures, programs and policies used to form a strategic business security plan to neutralize an organization's vulnerabilities and measure the effectiveness of its security. Strategies to prevent and reduce risks inherent in the private business sector will be discussed and analyzed.

## Graduate Courses

**6310 Issues in Criminal Justice (3-3-0)**

*Prerequisite: Graduate standing or department approval*

An analysis of the current issues facing the criminal justice system.

**6311 Legal Liabilities in Criminal Justice (3-3-0)**

*Prerequisite: Graduate standing or department approval*

An examination of legal liabilities facing criminal justice management in their relations with human resources/personnel, their clients/offenders, and the public.

**6312 Law and Society (3-3-0)**

*Prerequisite: Graduate standing or department approval*

An inquiry into selected current legal issues such as gun control legislation, asset forfeiture law, the prison reform legislation act, domestic violence legislation, sex offender legislation, death penalty legislation, etc.

**6313 Issues in Corrections (3-3-0)**

*Prerequisite: Graduate standing or department approval*  
Examines current issues in institutional and community corrections with emphasis on comparisons of control versus rehabilitation strategies, lack of strategic planning and public policy development.

**6314 Issues in Law Enforcement (3-3-0)**

*Prerequisite: Graduate standing or department approval*  
This course will focus on the long term, intractable problems in policing, particularly in urban areas. Endemic issues that affect the limits and potential of mainstream policing will be examined including an analysis of emerging critical issues and a critical assessment of the philosophy and politics of community policing.

**6315 Integrated Communications for the Security/Criminal Justice Professional (3-3-0)**

*(Cross-listed as COMM 6315. Credit may not be earned for both.)*  
*Prerequisite: Graduate standing or department approval.*  
Explores ways in which security management and criminal justice professionals can become effective, integrated communicators (one-to-one, one-to-several, one-to-many) by examining relevant theories and applications unique to the security management environment. Topics include interviewing, assessing disclosure, building trust and credibility, handling difficult people, group decision making and public presentation skills. Assignments will include qualitative research projects and experiential learning.

**6320 Research Design and Methods (3-3-0)**

*Prerequisite: Graduate standing or department approval*  
Includes the scientific method, basic social science research design and execution, and evaluation of contemporary research in criminal justice. Topics covered include the logic of causal order, the logic of inference, sampling theory, qualitative and quantitative research design, data collection, and model specification. Prepares students to critically appraise reported research, and to design and conduct independent research projects.

**6321 Quantitative Analysis in Criminal Justice (3-3-0)**

*Prerequisite: Graduate standing or department approval, an undergraduate statistics course within the last 5 years, and CJ 6320.*  
The use of descriptive and inferential statistics and computer applications as used in criminal justice research.

**6323 Communications and Technology (3-3-0)**

*(Cross-listed as ENG 6323, Credit may not be earned for both.)*  
*Prerequisite: Graduate standing or department approval.*  
Acquaints students with various computer software programs and their applications to specific disciplines such as criminal justice, medical and science writing and technical communication. Projects will include documents as well as slide presentations incorporating analyzed research data. Students will expand their knowledge of rhetorical principles and techniques for reporting statistical analyses and conveying them to specialized audiences.

**6330 Advanced Criminology (3-3-0)**

*Prerequisite: Graduate standing or department approval*  
History of criminological thought, etiology of criminal behavior, and analysis and evaluation of contemporary criminological theories.

**6333 Violence in America (3-3-0)**

*Prerequisite: Graduate standing or department approval*  
A survey of violence in past and present American society with an emphasis on theoretical perspectives and possible future trends.

**6340 Administration in Criminal Justice (3-3-0)**

*Prerequisite: Graduate standing or department approval*  
Surveys the relationship between worker productivity and personnel/management policies in criminal justice organizations. Examines the workplace application of theories of learning, personality, cognitive processes, group dynamics and communications.

**6342 Correctional Programming (3-3-0)**

*Prerequisite: Graduate standing or department approval*  
Examines the development, management and assessment of the various types of non-security programs within correctional settings. Facilitates the understanding of dynamics of rehabilitation of offenders, as well as the group dynamics of institutions designed to work with delinquent populations.

**6350 Policy Analysis and Program Evaluation (3-3-0)**

*Prerequisite: Graduate standing or department approval*  
Examines theories and methods of policy analysis and program evaluation with suggested applications to agencies within the juvenile and criminal justice systems. Identifies the complex effects of policy change as well as techniques for developing a continuous capacity for program assessment in these agencies. Discusses forces that generate new policies and the processes for their implementation and evaluation. Students assess existing models and are encouraged to develop their own applications for measuring the impact of new directions in the system.

**6360 Special Topics (3-3-0)**

*Prerequisite: Graduate standing or department approval*  
Seminar for advanced students offered in response to student request and faculty interest. May be repeated for additional credit when course content differs. Sample topics include the death penalty, family violence and disputes, hate crimes, inmate social organization, prison gangs, etc.

**6363 Business Aspects of Security Management (3-3-0)**

*Prerequisite: Graduate standing or department approval.*  
Introduction to essential terms, concepts and methods in business for security managers. Emphasis on balance sheets, income statements and cash flow statements. Topics include business organization, time value of money, market efficiency and financial performance.

**6364 Legal Aspects of Security Management (3-3-0)**

*Prerequisite: Graduate standing or department approval.*  
Criminal law, administrative law and extralegal contractual agreements that impact security management including legal

liabilities attached to arrest, search and seizure, evidence, tort liability and personnel issues in industrial, corporate, retail and private security.

**6365 Computer Forensics (3-3-0)**

*Prerequisite: Graduate standing or department approval.*

This course is designed to expose students to advanced concepts in computer forensic analysis. The methods of collection, preservation, analysis, and presentation of digital evidence will be presented to properly conduct a computer forensics investigation. There will be a balance of legal and technical aspects of study to achieve a balance similar to that encountered during general cases in which computer forensic are employed.

**6370 Independent Study**

*Prerequisite: Graduate standing and department approval*

Intensive study of a subject that the student cannot normally pursue in a regularly scheduled course. Supervised independent or group studies for advanced students. May be repeated for additional credit with faculty approval.

**6371 Criminal Justice Skills Assessment (3-3-0)**

*Prerequisite: Completion of all core coursework.*

Assessment of comprehensive skills for professional service in the field of criminal justice. Students will demonstrate critical thinking, academic writing techniques and familiarization with a broad range of theories, research methods, policy and administrative issues as well as their application to current issues in the field. Students' performance on structured writing assignments will reflect a clear understanding of the classic and contemporary readings that are considered major contributions to criminal justice and criminology. Students will progress through a series of exam blocks that gauge mastery in each of the major topic areas.

**6390 Thesis I**

*Prerequisite: Completion of coursework.*

This course represents a student's initial thesis enrollment. No credit is awarded until the student has completed the thesis.

**6391 Thesis II**

*Prerequisite: Completion of Thesis I.*

This course represents a student's continuing enrollment. The student continues to re-enroll in this course until the topic is approved by the thesis committee.

**6680 Physical Security Applied Project**

*Prerequisite: Graduate standing and department approval.*

This course is intended to provide the student with an analytical academic environment within which to apply the most recent information, techniques, and practices in the physical security certification specialization field to a hypothetical scenario. Students must attend a minimum of 36 hours of professional seminar presentations addressing physical security assessment, integrated physical security measures, and implementation of physical security measures. Students will work with an applied thesis committee that will guide them in developing a professional presentation addressing a detailed hypothetical scenario that incorporates an analysis of a comprehensive literature review with the knowledge gained in the professional seminar hours.

**6681 Security Investigation Applied Project**

*Prerequisite: Graduate standing and department approval.*

This course is intended to provide the student with an analytical academic environment within which to apply the most recent information, techniques, and practices in the physical security certification specialization field to a hypothetical scenario. Students must attend a minimum of 36 hours of professional seminar presentations addressing case management, evidence collection, and case presentation. Students will work with an applied thesis committee that will guide them in developing a professional presentation addressing a detailed hypothetical scenario that incorporates an analysis of a comprehensive literature review with the knowledge gained in the professional seminar hours.

**COMM (Communication)**

**1301 Voice and Diction (3-3-0)**

Strongly recommended for students for whom English is a second language. Introduction to phonetics and methods of voice development. Acquiring good speech habits through individual analysis, tape recordings, guided practice, class drills, oral readings and vocabulary building. (SPCH 1342)

**1302 Mass Media (3-3-0)**

*Prerequisite: ENG 1301*

An introduction to mass communications, including the functions in society of newspapers, magazines, radio and television. (COMM 1307)

**1303 Storytelling (3-3-0)**

Students will develop skills in storytelling by examining the communicative elements essential to the storytelling event: teller, audience, purpose. Enhancing critical and creative thinking, developing language skills, improving listening, and better understanding and appreciating culture are among the topics to be covered in this performance-based course. Also included is storytelling as a teaching tool.

**1304 Introduction to Speech Communication (3-3-0)**

*Prerequisite: READ 1300 or acceptable reading placement score.*

An overview of skills important in developing effective communication. Students will gain experience in interpersonal, small group, and public communication. (SPCH 1311)

**1305 Oral Interpretation of Literature (3-3-0)**

*Prerequisite: ENG 1301 or permission of instructor.*

An introduction to the oral study of texts through performance of prose and poetry. Assists students in mastering theory and practice of performing and reading texts. Recommended for elementary education certification. (SPCH 2341)

**1385 Communication in the Classroom (3-3-0)**

*Prerequisite: Enrollment in or credit for ENG 1301.*

Communication behaviors for the classroom teacher and how those behaviors affect student learning. Discussion of theories and practice in self-concept, feedback, listening, disclosure and nonverbal communication.

- 2301 Health Communication (3-3-0)**  
*Prerequisite: COMM 1304.*  
 This course will explore the vital relationship between health and communication and the variety of contexts in which a change in one means a change in the other. Study of personal, cultural, and political contexts to examine theories of health communication, evaluate health messages, understand the field of health care, and improve our communication throughout a lifetime of changing health.
- 2305 Film Appreciation (3-3-0)**  
*(Cross-listed as ART 2305. Credit may not be earned for both.)*  
*Prerequisite: ENG 1302.*  
 An overview of film as a communication and esthetic medium. Films are studied for their artistic and cultural significance, and for the communication strategies they use. Topics include film genres, sound and graphics, imagery, symbolism, cultural contexts for film, and film criticism.
- 2307 Intercultural Communication (3-3-0)**  
*Prerequisite: ENG 1302.*  
 A study of the impact of culture on communication behaviors and the implication for cross-cultural interactions, both interpersonal and organizational.
- 2309 Interpersonal Communication (3-3-0)**  
 A theoretical, practical and experiential introduction to interpersonal communication. Areas in communication apprehension, family communication, listening and communication in multiple contexts are discussed.
- 3301 Public Relations (3-3-0)**  
*(Cross-listed as ENG 3371. Credit may not be earned for both.)*  
*Prerequisite: ENG 1302 and junior standing.*  
 A study of techniques and methods of public relations in promoting the images of organizations, corporations and institutions, both public and private.
- 3302 Argumentation and Debate (3-3-0)**  
*Prerequisite: COMM 1304 or permission of instructor.*  
 Theory and practice in argumentation and debate, including inductive and deductive reasoning, attitude change, use of evidence, fallacies, and beginning debate.
- 3303 Introduction to Advertising (3-3-0)**  
*(Cross-listed as ENG 3373. Credit may not be earned for both.)*  
*Prerequisite: ENG 1302 and junior standing.*  
 History, theory and basic techniques of advertising, with special emphasis on the use of media in advertising campaigns and message development for media campaigns.
- 3304 Public Speaking (3-3-0)**  
*Prerequisite: COMM 1304 or 3306.*  
 A comprehensive examination of the preparation and presentation of various types of speeches. Types include: informative, persuasive, impromptu and ceremonial. Videotaping and in-depth student assessment are integral to the course.
- 3305 Fundamentals of Communication Technology (3-3-0)**  
*Prerequisite: COMM 1304.*  
 Critical analysis of communication technology based on models of communication. Examines how communicators prepare, deliver and assess messages for effective distribution in technological contexts.
- 3306 Business and Professional Speech Communication (3-3-0)**  
*Prerequisite: COMM 1304 or ENG 1302.*  
 Effective communication in a business and professional setting. Units include: interview, group decision making, informing, and persuading.
- 3307 Political Communication (3-3-0)**  
*Prerequisite: COMM 1304.*  
 Examines role of communication in shaping political and social changes. Political rhetoric of individuals and groups, past and present; how discourse forms and calls upon one's political self.
- 3308 Family Communication (3-3-0)**  
*Prerequisite: Three hours of COMM.*  
 Course reflects the trends in theory and practice in developing an understanding of the frameworks of communication as it relates to the family unit. Communication issues include intimacy, roles, power, decision-making, rules, quality dialogue and conflict.
- 3309 Theory and Practice of Interviewing (3-3-0)**  
*Prerequisite: COMM 1304.*  
 The application of communication theory to interview situations. This theory and practicum course is designed to aid the student in mastering specific skills appropriate to specialized settings such as selection interviews, appraisals, discipline interviews, exit interviews, computer-assisted interviews, journalistic interviews and investigative reporting, and survey and telephone interviews .
- 3310 Women, Men and Communication (3-3-0)**  
*Prerequisite: Three hours of COMM.*  
 Course explores the theory and practice of communication between the sexes in personal relationships and professional contexts. The social construction of gender is also discussed.
- 3311 Writing for the Media (3-3-0)**  
*(Cross-listed as ENG 3333. Credit may not be earned for both.)*  
*Prerequisite: ENG 1302 and either COMM 1302 or ENG 3302.*  
 Study and practice of writing techniques appropriate to print and broadcast media with emphasis on the relevance of these skills to managing media relations.
- 3312 Writing for Presentation (3-3-0)**  
*(Cross-listed as ENG 3334. Credit may not be earned for both.)*  
*Prerequisite: ENG 1302 and either COMM 1302 or ENG 3302.*  
 This course covers writing for the media employed for presentations in business, industry and the professions. Possible course focuses include videoscripting, speechwriting and writing for slide and multimedia presentations.
- 3313 Race, Ethnicity and Communication (3-3-0)**  
*Prerequisite: COMM 1304.*  
 This course explores the inextricable and multidimensional relationship between race and communication. Students will understand how to transcend race using communication capital

as a means of developing effective interactions. Specific attention to the construction of one's own racial/ethnic identity as well as those of other groups. Part I of the course will cover various foundations of interracial communication including topics such as language, identity, history, cultural influences, and theories. Part II will draw from this foundation and discuss interracial communication in a number of contexts such as in relationships, organizations, and the mass media.

**3314 Research in Communication Studies (3-3-0)**

*Prerequisite: Three hours in COMM and junior standing*  
This course will provide students with a research vocabulary and will teach them to evaluate research. Quantitative, qualitative, and critical paradigms will be examined. Students will conduct original research.

**3315 Small Group Communication (3-3-0)**

*Prerequisite: COMM 1304 or instructor's permission.*  
This course will provide students with a comprehensive knowledge of small group communication theories and processes. Students will gain the ability to apply conceptual ideas about effective group practices to practical communication situations such as leadership, decision making, conflict management, and teamwork. By bridging theoretical readings and discussions with application-based group projects, students will have the opportunity to practice and refine their own understanding of small group communication.

**3316 Sex, Love, and Romance in the Mass Media (3-3-0)**

*Prerequisite: COMM 1304.*  
This course will challenge unrealistic portrayals of sex, love, and romance presented by the mass media through an examination of myths, stereotypes, cognitive behavioral models, and mass media effects.

**3317 Film Analysis (3-3-0)**

*(Cross-listed as ART 3315. Credit may not be earned for both.)*  
*Prerequisite: ART 2305 or COMM 2305.*  
This course applies the history and terminology from ART/COMM 2305 (Art Appreciation) to the analysis and critique of films representative of various movements and genres.

**3320 Communication Theory (3-3-0)**

*Prerequisite: ENG 1301, ENG 1302, and 3 hours of COMM.*  
This course focuses on theories of communication that help students to understand the issues affecting the field today. These theories help students understand people's daily interactions in various contexts

**3330 Nonverbal Communication (3-3-0)**

*Prerequisite: COMM 1304.*  
Addresses how we communicate other than through the use of words. Topics will include body language (kinesics), use of space (proxemics), touch (haptics), and vocal variety.

**3399 Directed Study in Communication**

*Prerequisite: Formal approval by department chair and dean.*  
Selected topics in the field; intensive individual study under the guidance of a member of the faculty.

**4301 Persuasive Communication (3-3-0)**

*Prerequisite: COMM 1304 and COMM 3302.*

Study of the theories, techniques, forms, functions, applications, potential and limitations of persuasive communication for the individual and organizations. Utilizes classical rhetorical and contemporary communication theories.

**4310 Communication in the Organization (3-3-0)**

*Prerequisite: Three hours of COMM.*  
Emphasis on linking theories of organizational behavior and leadership to theories of human communication in dyadic, small group, presentational, and public contexts. Students have the opportunity to apply theories to real organizational settings by conducting diagnostic projects focusing on communication dynamics within the organizational setting.

**4330 Communication Training and Development (3-3-0)**

*Prerequisite: COMM 3306 or ENG 3302.*  
Methods of training and development are explored as communication processes through which organizations help managers and employees improve performance and increase job satisfaction. Methods include discussion, simulation, programmed instruction, and multimedia presentation. Students learn skills required for designing a training program: assessing needs, interviewing, and writing the training proposal.

**4380 Field Experience in Communication**

*Prerequisite: 60 hours toward degree and department approval.*  
Placement of students in jobs involving areas in Communication Studies within the private and public sectors. Work may be paid or unpaid. Written reports, conferences with the instructor and other academic work are required. May be repeated once for credit.

**4390 Issues in Speech Communication (3-3-0)**

*Prerequisite: Three hours of COMM.*  
The issues addressed in this course reflect current trends in speech communication. Possible topics to be offered in different semesters include: health communication, nonverbal communication, small group communication, training and development. With permission of department chair, may be repeated once for credit.

## Graduate Courses

**6301 Speech Communication for the Elementary School Teacher (3-3-0)**

*Prerequisite: Graduate standing.*  
An experientially-oriented course designed to explore the theoretical and pragmatic rationale for using thoughtful communication strategies in the urban-centered elementary school classroom, with an emphasis on practical means of implementing those strategies effectively. Topics include voice and diction skills, public speaking, message structuring, discussion methods, cultural diversity, storytelling, active listening, and effective use of feedback.

**6302 Speech Communication for the Secondary School Teacher (3-3-0)**

*Prerequisite: Graduate standing.*  
An experientially-oriented course designed to explore the theoretical and pragmatic rationale for using thoughtful communication

tion strategies in the urban-centered secondary school classroom, with an emphasis on practical means of implementing those strategies effectively. Topics include conflict resolution, team building, leading a discussion, conducting an interview, structuring complex messages cultural diversity, communication apprehension, and feedback.

**6315 Integrated Communication for the Security/Criminal Justice Professional (3-3-0)**

*(Cross-listed as CJ 6315. Credit may not be earned for both.)*  
*Prerequisite: Graduate standing or department approval.*  
 Explores ways in which security management and criminal justice professionals can become effective, integrated communicators (one-to-one, one-to-several, one-to-many) by examining relevant theories and applications unique to the security management environment. Topics include interviewing, assessing disclosure, building trust and credibility, handling difficult people, group decision making and public presentation skills. Assignments will include qualitative research projects and experiential learning.

## CS (Computer Science)

**1105 Technology for Education Lab (1-0-2)**

*Prerequisite: Credit or enrollment in CS 1305, or CS 1410, or CS 1408.*  
 An introduction to authorware systems and presentation software for the development of interactive teaching materials and classroom presentations. Examples of computer-based instruction and tutoring systems will be discussed. The use of CS-ROM multimedia teaching materials will be introduced.

**1305 Introduction to Computer Technology (3-3-0)**

*Prerequisite: MATH 1300 or placement by exam.*  
 Topics include the history and nature of computers, ethical and other societal issues, an overview of computer hardware and software (with an emphasis on computer applications and the use of standard software packages). The use of the Internet for communication and research is introduced.

**1312 Computer Programming in Visual Basic (3-3-0)**

*Prerequisite: Completion of, or enrollment in, MATH 1404, MATH 1505, or MATH 1306.*  
 An introduction to programming using Visual Basic with an emphasis on event-driven programming. The Visual Basic environment includes objects, events, code, and properties. Topics also include statements, subprograms, data types, arrays, input-output, and user interface design.

**1408 Introduction to Computer Science with Visual Basic (4-4-0)**

*Prerequisite: Credit or enrollment in MATH 1306 or MATH 1404; and placement in ENG 1301 or above.*  
 History, nature and uses of the computer; algorithms; number systems; information representation and organization with an overview of computer hardware and software, computing systems and major applications. An introduction to high level languages and programming using Visual Basic with an emphasis on event-driven programming. Elements of the Visual Basic programming environment including objects, events, properties, user interface design and creating web-based applications

are discussed. Practice with standard programming features such as control statements, subprograms, data types, arrays and input-output mechanisms.

**1410 CS I - Introduction to Computer Science with C++ (4-3-2)**

*Prerequisite: Credit or enrollment in MATH 1404 or MATH 1505 or MATH 1306; and placement in ENG 1301 or above.*  
 History, nature and uses of the computer; algorithms; number systems; information representation; and organization, with an overview of computer hardware and software, computing systems and major applications. Ethical and societal issues are discussed. An introduction to high-level languages with an emphasis on programming in C++. Control statements, subprograms, data types, arrays, and streams. Closed (supervised) laboratories are conducted on: an introduction to Microsoft Windows, and a C++ programming environment; appropriate programming exercises emphasizing top-down design methodology and simple and structured data types; and key topics of the discipline and areas of application. Designed as a first course for majors in Computer and Mathematical Sciences (COSC 1420)

**2310 CS II-Introduction to Data Structures and Algorithms (3-3-0)**

*Prerequisite: Grade of C or better in CS 1410 and credit or enrollment in MATH 2401*  
 Arrays, records (C++ structs), classes and data abstraction, object-oriented software development, pointers, dynamic data structures, linked structures, elementary and searching and sorting algorithms, recursion, an introduction to algorithm complexity analysis.

**3300 Object-Oriented Programming and Concepts (3-3-0)**

*Prerequisite: Grade of C or better in CS 2310.*  
 Provides practical guidance on the construction of object-oriented systems. The Unified Modeling Language (UML) is used as a tool for analysis and design and the JAVA language is used for implementation. Key concepts of object-oriented programming methodology are discussed.

**3304 Data and Information Structures (3-3-0)**

*Prerequisite: Grade of C or better in CS 2310 and MATH 2305.*  
 Development of methods for organizing and processing data sets. Types of data structures analyzed include linear lists, stacks, queues, trees, and graphs. Algorithm analysis methods are used throughout to analyze the various data structures and algorithm design alternatives .

**3306 Introduction to Theory of Computation (3-3-0)**

*(Cross-listed as MATH 3316. Credit may not be earned for both.) Prerequisite: Grade of C or better in CS 2310, MATH 2305 and MATH 2307.*  
 An introduction to the modern theory of computing. Topics selected from abstract algebra, finite automata, regular expressions, regular languages, pushdown automata, context-free languages, and Turing machines. The capabilities and limitations of abstract computing devices are investigated from a theoretical perspective.

**3308 Numerical Methods (3-3-0)**

*(Cross-listed as MATH 3308. Credit may not be earned for both.)*

*Prerequisite: Grade of C or better in CS 1408 or CS 1410, MATH 2302, MATH 2407.*

Develop and implement algorithms used in solving a variety of problems from science and engineering, including numerical solutions of linear systems of equations and nonlinear equations, curve fitting, approximation, numerical differentiation and integration, and numerical solutions of ordinary differential equations. Computer techniques are used in obtaining and analyzing numerical solutions.

**3318 Introduction to Computer Security (3-3-0)**

*Prerequisite: CS 3304.*

Introduction to encryption and decryption; security mechanisms in computer programs, operating systems, databases, and networks; administration of computer security; and legal/ethical issues in computer security. Provides the foundation for further study of security issues in computer systems and applications.

**3320 Introduction to Software Engineering (3-3-0)**

*Prerequisite: Grade of C or better in CS 3304*

Provides the students with a theoretical, and a practical, understanding of the development of large software systems. The theoretical component is supported with readings, lecture, and discussion. The practical component consists of preparation of software systems using software engineering principles.

**3401 Introduction to Computer Organization and Assembly Language (4-4-0)**

*Prerequisite: Grade of C or better in CS 1410 or CS 1408.*

Organization of general purpose Computers; data representation and arithmetic; instruction sets and addressing modes; assembly language programming; computer arithmetic; program control structures; basic I/O operations; memory hierarchies. Laboratory assignments include assembly language programming.

**3402 Digital Logic (4-3-2)**

*Prerequisite: Grade of C or better in: CS 2310, CS 3401 and MATH 2305.*

Topics include: analysis and synthesis of combinational and sequential switching networks; optimization methods using random logic gates, multiplexers, decoders, registers, counters, and programmable logic devices. Laboratory exercises involve the design and implementation of digital circuits. Emphasis is on the use of CAD tools in the design, simulation, and testing of digital circuits.

**4294 Senior Seminar (2-2-0)**

*(Cross-listed as MATH 4294, STAT 4294. Credit may not be earned for more than one.)*

*Prerequisite: COMM 1304, ENG 3302, senior standing and department approval.*

An intense, structured seminar. Students are exposed to the world community as it relates to their major (involving a written and oral report on cultural issues as well as discussion of these topics); ethics is discussed as it relates to the subject. In addition, students prepare a written proposal for a senior project. Attendance at departmental colloquia is also required.

**4300 Web Programming (3-3-0)**

*Prerequisite: CS 3300*

An introduction to Web programming using HTML, XML, JavaServer Pages, and Java Script, with an emphasis on developing and designing dynamic Web pages in the client-server model.

**4301 Advanced Numerical Methods for Science and Engineering (3-3-0)**

*(Cross-listed as MATH 4301. Credit may not be earned for both.)*

*Prerequisite: CS/MATH 3308, MATH 2403 and MATH 3301.* Advanced topics in numerical mathematics, including the numerical solution of ordinary and partial differential equations and advanced methods in numerical linear algebra. Programming projects are stressed that use the computer to solve physical and engineering problems. This course may be used to fulfill the writing application course requirement with additional prerequisites including CS 4294 and department approval.

**4303 Programming Language Concepts (3-3-0)**

*Prerequisite: Grade of C or better in CS 3304.*

Provides a foundation in the concepts and implementation of modern programming languages. Imperative, functional, logic, and object-oriented programming paradigms are covered.

**4306 Mathematical Models and Computer Simulation (3-3-0)**

*(Cross-listed as STAT 4306. Credit may not be earned for both.)*

*Prerequisite: MATH 3302 or STAT 3310 and CS 1408 or CS 1410.*

Quantitative modeling of industrial systems, computer simulation languages; discussion of problems encountered in constructing simulation programs. This course may be used to fulfill the writing application course requirement with additional prerequisites including CS 4294 and department approval.

**4310 Principles of Computer Graphics (3-3-0)**

*Prerequisite: CS 2310 and MATH 2307*

Analytical treatment of computer graphics; input, transformation and display of graphical data; graphical algorithms and languages; emphasis on current developments.

**4315 Operating Systems (3-3-0)**

*Prerequisite: Grade of C or better in CS 3304 and CS 3306.*

Basic concepts of operating systems including concurrent process management, I/O device management, and storage management (virtual memory and file systems). UNIX/Windows NT serve as standard examples.

**4318 Theory of Database and File Structures (3-3-0)**

*Prerequisite: CS 3304 and CS 3306.*

An introduction to the theory of database and file structures with an emphasis on general principles and algorithmic issues as well as a conceptual overview of the design, construction and maintenance of database and file processing systems. After the various models are considered, specific attention is given to advanced topics such as data integrity, optimization, and distributed environments. This course may be used to fulfill

the writing application course requirement with additional prerequisites including CS 4294 and department approval.

**4319 Data Mining and Warehouses (3-3-0)**

*Prerequisite: CS 3304.*

Introduction to the theory, tools, and practice of data mining used to seek, detect, extract and store interesting and significant relationships or knowledge buried within large-scale data archives. Topics include data warehouses and star schema, online analytical processing, data preprocessing, concept description, association rules, and clustering. Case studies from various domains (financial, bioinformatics, etc.) will be presented and the student will be introduced to various data repositories for the study of data mining.

**4322 Theory of Algorithms (3-3-0)**

*Prerequisite: CS 3304 and CS 3306.*

Detailed study of the main algorithmic techniques of computer science (e.g., sorting and searching) and analysis of the operating characteristics and complexity of selected algorithms.

**4325 Computer Network Architecture (3-3-0)**

*Prerequisite: CS 3402.*

Architectures and operating systems of distributed networks including data communication, local networks, public networks and design alternatives. This course may be used to fulfill the writing application course requirement with additional prerequisites including CS 4294 and department approval.

**4328 Parallel Computing (3-3-0)**

*Prerequisite: CS 3304.*

Introduces fundamental concepts of parallel computers and parallel/distributed computation. A semester project involving parallel algorithm design, software implementation and results analysis to solve scientific and/or engineering application problems in parallel will be assigned. This course may be used to fulfill the writing application course requirement with additional prerequisites including CS 4294 and department approval.

**4333 Theory and Applications of Neural Nets (3-3-0)**

*(Cross-listed as MATH 4333. Credit may not be earned for both.)*

*Prerequisite: Grade of C or better in MATH 2307, MATH 2403, and CS 2310.*

Introduction to basic concepts of neural networks used in supervised and unsupervised learning. Several learning rules and algorithms will be presented along with applications.

**4334 Fuzzy Logic: Theory and Applications (3-3-0)**

*(Cross-listed as MATH 4334. Credit may not be earned for both.)*

*Prerequisite: Grade of C or better in CS 2310 and MATH 2307.*

This course will cover important ideas in the theory and applications of fuzzy logic such as operations on fuzzy sets, alpha cuts, possibility measure, ruled based computations, associative memories and other topics as time permits.

**4336 Neuro-Fuzzy Systems (3-3-0)**

*(Cross-listed as MATH 4336. Credit may not be earned for both.)*

*Prerequisite: MATH 2403, MATH 2307, and CS 2310.*

*CS/MATH 4333 or CS/MATH 4334 recommended.*

Advanced topics selected from fuzzy logic, regression and optimization, adaptive networks, neural nets, and neuro-fuzzy systems.

**4380 Field Experience**

*Prerequisite: At least 60 semester hours, grade of B or better in CS 3304, 3306 and 3402 and approval of department chair.*

Selected students are placed in jobs in the local community which are related to and reinforce their academic training. Positions are full time, salaried and last the duration of a semester. Recommended for students not already employed in their area of study.

**4390 Selected Topics in Computer Science (3-3-0)**

*Prerequisite: Department approval.*

Intensive study of one or more major topics in computer science, especially with respect to a new or emerging area. Course may be repeated for credit with department approval.

**4395 Senior Project in Computer Science**

*(Cross-listed as MATH 4395, STAT 4395. Credit may not be earned for more than one.) Prerequisite: COMM 1304, ENG 3302, grade of B or better in CS 4294, 3.0 GPA, senior standing and department approval.*

Intensive study under the guidance of a member of the Computer and Mathematical Sciences faculty which culminates in an individually researched and formally written report and oral presentation dealing with the applications of computer science in the student's area of specialization and related to one type of business or industry in the Houston area.

**4396 Senior Thesis**

*Prerequisite: Approval of department chair and the student's advisor for CS 4395.*

Intensive study under the guidance of a member of the Computer and Mathematical Sciences faculty which continues and expands the research carried out in CS 4395. A formal written report and oral presentation will be required.

**4399 Directed Study in Computer Science**

*Prerequisite: Approval of department chair and dean.*

Selected topics in computer science. Intensive individual study under the guidance of a member of the Computer and Mathematical Sciences faculty.

## CSP (College Success Program)

**1101 College Success Program Course (1-1-0)**

An introduction to college life. Topics include study skills, time management, university resources, library skills, and goal setting. Recommended for all new and returning students.

**1301 Effective Learning Models (3-3-0)**

An overview of how humans acquire, process, and apply knowledge. Designed to provide entering and returning students the analytical and critical skills necessary for college success.

## DRA (Drama)

### 1301 Introduction to the Theater (3-3-0)

*Prerequisite: RDG 1300 or acceptable reading placement score.*

Topics examine the five essential elements of theater: the audience, the actor, the script, the production and the physical theater. Attendance at plays required; no acting included. (DRAM 1310)

### 1303 Acting I (3-3-0)

Basic concepts of acting (including improvisations, elements of characterization, role playing and scene production) through class presentations, attendance at plays, personal contact with professional actors and viewing films and videos. (DRAM 1351)

### 1304 Acting II (3-3-0)

*Prerequisite: DRA 1303 or permission of instructor.*  
Concentration on advanced concepts of acting, auditioning, improvisations, characterizations, pantomime, voice development and scene presentation. Performance in university productions encouraged. (DRAM 1352)

### 1305 Stagecraft I (3-0-3)

An introduction to the basic aspects of scenery and lighting, including elementary construction techniques, types and kinds of lighting instruments and equipment, various building materials and the operation and care of tools and machinery. (DRAM 1330)

### 1306 Stagecraft II (3-0-3)

*Prerequisite: DRA 1305 or permission of instructor.*  
A continuation of Stagecraft I, focusing on more advanced technical and construction work and equipment operation.

### 2301 Stage Design (3-3-0)

*Prerequisite: ENG 1301*  
Examines the history and development of stage scenery and lighting. Includes consideration of design principles and techniques in each area as well as materials and tools used. Also looks at notable scenic and lighting designers from the past and present.

### 3303 Theater: Greek to Elizabethan (3-3-0)

*(Cross-listed as HUM 3315. Credit may not be earned for both.)*

*Prerequisite: ENG 1301.*

World theater from its beginnings to the 18th century, including theater architecture, staging and costuming practices, plays and playwrights and social and political forces affecting the theater.

### 3304 Theater: Elizabethan to Modern (3-3-0)

*(Cross-listed as HUM 3316. Credit may not be earned for both.)*

*Prerequisite: ENG 1301.*

World theater from the 18th century to the present.

### 3308 Playwriting (3-3-0)

*(Cross-listed as HUM 3326. Credit may not be earned for both.)*

*Prerequisite: Junior standing or permission of the instructor.*  
The process of playwriting. Topics include dramatic structure, character and dialogue development and conflict resolution. Culminates with an original script.

### 3332 Stage Directing (3-3-0)

*Prerequisite: DRA 1301 and DRA 1303 or DRA 1304.*

An examination of the principles and practices of directing live theater. Concentration on such directorial responsibilities as play selection, casting, script analysis, rehearsal scheduling, character development and blocking techniques. Course culminates in the public presentation of a short dramatic performance. Course may be repeated once for credit.

### 4390 Selected Topics in Theater (3-3-0)

*Prerequisite: ENG 1302 and junior standing.*

An in-depth examination of selected aspects of theater including, but not limited to: playwriting; directing; dramatic criticism; the contributions of a particular playwright, or group of playwrights; and historical trends and group contributions to the evolving theater scene. May be repeated for credit with approval when topic varies.

## ECH (Early Childhood Education)

### 2311 Early Childhood Classroom (3-3-0)

Classroom strategies and materials appropriate for preschool, kindergarten, and primary classrooms.

### 2312 The Young Child (3-3-0)

Characteristics of physical, psychosocial, cognitive, language, and literacy development of young children and the instructional implications to those characteristics for an early childhood environment.

### 2313 The Early Childhood Learning Environment (3-3-0)

Introduction to models and theories of the organization and management of an early childhood learning environment. Application of specific organizational strategies and classroom management techniques appropriate for young children.

## ECO (Economics)

### 1301 Introduction to Economics (3-3-0)

*Prerequisite: ENG 1301.*

Combines microeconomics and macroeconomics in one semester. A non-technical examination of economic theories, programs, and policies. The primary objective in this course is to develop an interest and appreciation for the relevance of economic analysis.

### 2301 Principles of Economics I (3-3-0)

*Prerequisite: MATH 1301 or MATH 1310.*

Principles of macro-economics. Topics include structure of the US economy, national income determination and the application of monetary and fiscal policies. Also includes analysis of international trade and finance. (ECON 2301)

**2302 Principles of Economics II (3-3-0)**

*Prerequisite: MATH 1301 or MATH 1310.*

Principles of micro-economics, with major emphasis on price and income distribution theory. Topics include demand theory, competition, oligopoly and monopoly, marginal productivity theory, international trade, and international finance. (ECON 2302)

**3301 Natural Resources and Environmental Economics (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours and ECO 2302.*

The economics of non-renewable resource extraction, the economics of pollution control, the application of cost-benefit analysis to the environment and the economics of sustainable development.

**3302 Managerial Economics (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours and ECO 2302.*

Application of micro-economic theory to important business decision-making. Analytical methods in production, cost, demand, marketing and pricing. Regression analysis applied to test and to estimate empirical models.

**3303 Economics of Industrial Organization (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours and ECO 2302.*

A survey of market structures and market performance as well as the role of government regulations and antitrust policy in different sections of the economy. Emphasis is placed on methods and techniques used in measuring market structures and performance. Public regulation is considered in both theory and practice.

**3305 Economics of Government Finance (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours, ECO 2301 and ECO 2302.*

This course emphasizes the theories and techniques which enable students to evaluate the role of government in modern economy more objectively. The course reviews theories of public expenditures and taxation. It also critically evaluates major U.S. government expenditure programs and tax policies.

**3306 Petroleum Economics (3-3-0)**

*Prerequisite: MATH 1301, ECO 2301, and ECO 2302.*

Introduction to the methods and practices used by the oil and other industries to examine the economic viability of upstream oil and gas projects. Prepares students to perform economic evaluations and to critically review those done by others. Topics include cash flow analysis, economic indicators, risk and uncertainty, fiscal analysis, and techniques for valuing oil and gas properties and companies.

**3307 Intermediate Macroeconomics (3-3-0)**

*Prerequisite: ECO 2301.*

In depth and comprehensive analysis of macroeconomic theories and policies with real world applications. Alternative theories are evaluated using the IS/LM and the AD/AS models. The policy differences of these theories are critically examined. Topics include Business cycles, unemployment, inflation, interest rates, deficits and debts, economic growth, and Monetary

and fiscal policies. Macroeconomic issues in the context of today's global economy are also explored.

**3309 Intermediate Microeconomics (3-3-0)**

*Prerequisite: ECO 2302.*

Comprehensive analysis of micro economic theories, policies, and applications will be undertaken. Topics include an analysis of the market system, marginal analysis and optimization behavior, consumer choice, production and cost, market structure models, resource markets, externalities, public choice, distribution theories and welfare economics.

**3310 Current Economic Issues (3-2-0)**

This course surveys current economic issues facing the U.S. and the World. It achieves this objective by discussing policy options and analyzing their implications. Issues to be covered include pollution and environment, inflation and unemployment, poverty, crime, education, health care, global interdependence, and others which arise from time to time. (Students may receive 3 hours credit with approval of department chair.)

**3399 Directed Study in Economics (3-0-0)**

*Prerequisite: Approval of department chair and dean.*

Selected topics in economics; intensive individual study under the guidance of a member of the economics faculty.

**4301 Business and Economic Forecasting (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours, ECO 2301 and a grade of C or better in MATH 3309.*

Combines economic theory, quantitative methods and forecasting techniques to understand, analyze and forecast trends and fluctuations in business and economic activities. Emphasis on forecasting techniques such as smoothing methods, decomposition analysis, regression analysis, Box-Jenkins ARIMA methods and other advanced time-series techniques. Actual data and appropriate computer software will be used to provide hands-on experience to learn techniques and apply them for business and economic decision making.

**4303 International Economics (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours, ECO 2301 and ECO 2302.*

This course focuses on the principles of foreign trade and covers theories concerning the reasons for trade. The course examines the monetary and real aspects of international trade and includes analysis of foreign exchange markets and balance of payments problems.

**4307 Health Economics (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours and ECO 2302.*

A study of demand and supply in the medical services industry. Specific issues include markets for medical education, health insurance, hospital care, physicians and nurses. The role of government in health and medical care such as Medicare, Medicaid and national health insurance is discussed.

**4309 Economic Development (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours and ECO 2301.*

Examines economic development theories, policies and practices of developing countries with particular emphasis given on the nature, causes and possible solutions to the problems of developing countries. Also examines the relationship between developed and developing countries in such areas as trade, capital flows, and labor migration.

## Graduate Courses

**5331 Economic Processes (3-3-0)**

*Prerequisite: Graduate standing and ENG 1301.*

An intensive summary of basic micro- and macroeconomic theories as applied to business.

## EED (Elementary Education)

**3301 Understanding the Learner in the Elementary Classroom (3-3-2)**

*Prerequisite: Admission to the Teacher Education Program*

Addresses factors that affect student learning in urban schools: human growth and development, environment, diversity, instruction, and motivation.

**3311 Teaching Social Studies in the Elementary Classroom (3-3-2)**

*Prerequisite: Admission to Teacher Education Program and enrollment in interdisciplinary blocks.*

A field-based course which addresses social studies curricula and methodology in urban elementary and middle-school classrooms.

**3312 Effective Teaching Strategies in Mathematics Education (3-3-2)**

*Prerequisite: Admission to Teacher Education Program and enrollment in interdisciplinary blocks.*

A field-based course that emphasizes how children learn and develop mathematical concepts, skills, and procedures. The course will employ strategies to plan, organize, and implement instruction and curriculum goals aligned to local, state, and national standards.

**3313 Effective Teaching Strategies in Science Education (3-3-2)**

*Prerequisite: Admission to Teacher Education Program and successful completion of interdisciplinary block I.*

A field-based course that emphasizes inquiry-based, student-centered science learning experiences for young children and adolescents. This course employs research-based approaches that support effective teaching in science content and pedagogy resulting in high science achievement for learners.

**3315 Effective Teaching Strategies in Science Education (3-3-2)**

*Prerequisite: Completion of Interdisciplinary Block I.*

A field-based course that emphasizes inquiry-based, student-centered science learning experiences for young children and adolescents. This course employs research-based approaches

that support effective teaching in science content and pedagogy resulting in high science achievement for learners .

**3316 Understanding the Adolescent Learner and Environment (3-3-2)**

*Prerequisite: Admission to Teacher Education Program.*

A field-based course that addresses factors which affect the learning of adolescents in urban schools. Among the topics covered are human growth and development, learning environment, diversity, instruction and motivation.

**3317 Unifying Mathematics Concepts and Processes in Urban Education (3-3-2)**

*Prerequisite: Admission to Teacher Education Program and concurrent enrollment in EED 3316 and EED 3318.*

A field-based course utilizing research-based mathematical processes to reason, solve, communicate, and make mathematical connections within and outside of mathematics. The course employs strategies to enhance student achievement in the urban classroom.

**3318 Unifying Concepts and Processes in Science Education (3-3-2)**

*Prerequisite: Admission to Teacher Education Program and concurrent enrollment in EED 3316 and EED 3317.*

A field-based course that emphasizes an integrated approach using unifying science concepts and processes across the science disciplines. The processes and concepts are taught using inquiry-based science learning experiences.

**4301 Student Teaching in the Elementary Classroom (3-3-15)**

*Prerequisite: Block II, passing score on Block II exam.*

Classroom management, student record keeping, assisted and independent teaching in an urban public school, guided by a mentor teacher and site-based university instructor.

**4302 Student Teaching in the Middle-School Classroom (3-3-15)**

*Prerequisite: Completion of interdisciplinary Block II, concurrent enrollment in interdisciplinary Block III and I.*

Classroom management, student record keeping, assisted and independent teaching in an urban school, guided by a mentor teacher and site-based university instructor.

**4303 Student Teaching in the Bilingual/ESL Classroom (3-3-15)**

*Prerequisite: Block II, passing score on Block II exam.*

Classroom management, student record keeping, assisted and independent teaching in an urban public school, guided by a mentor teacher and site-based university instructor.

**4304 Student Teaching in the Early Childhood Classroom (3-3-15)**

*Prerequisite: Block II, passing score on Block II exam.*

Classroom management, student record keeping, assisted and independent teaching in an urban public school, guided by a mentor teacher and site-based university instructor.

**4320 Advanced Processes for Teaching Writing in the Middle Grades (3-3-2)**

*Prerequisite: Completion of interdisciplinary Block I and concurrent enrollment in EED 3311 and READ 3309.*

This field-based course is designed to provide prospective

teachers with the understanding that writing is a developmental process. Instructional tools that help late elementary and middle-school age children develop competence in written communication are addressed.

## EET (Electrical Engineering Technology)

### 1411 Electric Circuits with Lab (4-3-1)

*Prerequisite: MATH 1301 or department approval.*

*Laboratory fee required: \$12.*

Theory and applications of electric circuits as found in typical engineering systems and daily living environment. Basic principles and analysis methods for dc and ac circuits are studied and circuit applications explored. Computer simulation software tools are used extensively to provide an interactive teaching and learning process. Hands-on experience is gained through circuit testing and trouble shooting exercises. This course lays the foundation for other Electrical Engineering Technology courses.

### 2421 Electronic Devices and Amplifiers with Lab (4-3-1)

*Prerequisite: EET 1411 or department approval.*

*Laboratory fee required \$12.*

Study of the characteristics and operation of electronic devices including diodes, bipolar junction transistors and field effect transistors, operational amplifiers, 555 timers. Electronic circuitry for signal amplification and filtering, instrumentation, power regulation, electric drives. Use of computer software in electronics design.

### 2431 Digital Logic with Lab (4-3-1)

*Prerequisite: EET 1411 or department approval.*

*Laboratory fee required: \$12.*

Introduction to binary numbers, Boolean algebra, and Karnaugh maps. Logic gates, memory devices, counters, registers, arithmetic logic units, and data-handling circuits. A/D and D/A converters. Combined computer simulation and circuit testing in the laboratory.

### 3334 Electrical Power Systems (4-3-1)

*Prerequisite: EET 1411.*

Basic principles and applications of electrical power systems, power generation, transmission and distribution in utility and industrial systems. Included are lighting and grounding design, motor controls, transformers and area classification. Computer simulation of power systems.

### 3432 Computer Architecture and Design with Lab (4-3-1)

*Prerequisite: EET 2431.*

*Laboratory fee required: \$12.*

The organization and design of digital computer systems, including microprogramming, register transfer language, micro-operations and control functions of the computer. Computer input/output. The microcomputer is emphasized. The basics of machine and assembly language are utilized with the hardware.

### 3435 Fundamentals of Automation and Control with Lab (4-3-1)

*Prerequisite: EET 2421 and MATH 2402.*

*Laboratory fee required: \$12.*

Study of plant dynamic modeling (first-and second order, trans-

fer functions, nonlinear characteristics) and simulation, control system configurations (open-loop, closed-loop, combined feed-forward/feedback control), types of controllers (analog, PC-based, PLCs), and control modes (on-off, PID, etc.). System designs for dc servo position and speed control, temperature control, lighting control, etc.

### 3451 Instruments and Transducers with Lab (4-3-1)

*Prerequisite: EET 2421 or department approval.*

*Laboratory fee required: \$12.*

Transducer characteristics and applications. Sensor and measurement systems for major process variables: temperature, pressure, level, flow, and other physical variables. Design on signal conditioning circuits. 4-20mA current loops. Data acquisition and instrumentation networks.

### 3461 Analog and Digital Communication Circuits with Lab (4-3-1)

*Prerequisite: EET 2421 and EET 2431.*

*Laboratory fee required: \$12.*

Analysis of tuned circuits, modulation/demodulation techniques, transmitters and receivers basic transmission line theory, data communication techniques and modems. Applications of fiber optics for communication systems.

### 4335 Computer Networking (3-3-0)

*Prerequisite: EET 3461*

Principles and applications of computer networking techniques, including the seven layered protocol model, hierarchy of commands, descriptions of the physical layers of the model and descriptions and analysis of popular techniques currently in existence. Development and implementation of NT networks.

### 4434 Microprocessor Systems Design (4-3-1)

*Prerequisite: EET 2431*

*Laboratory fee required: \$12.*

Design, application and operation of various electronics systems using microprocessors. Consideration will be given to the specific type of components required, the sources of manufactured components, and the construction of the circuits and systems. Emphasis will be placed on microcomputers and their related peripherals and the use of system design software, XILINX. Various electronic circuits will be designed, implemented, and troubleshot using PAL's and PGA's. A group electronics systems project using microprocessors will be completed and troubleshot using all aspects of the course.

## EM (Energy Management)

### 3301 Introduction to the Petroleum Industry (3-3-0)

*Prerequisite: Completion of the common core plus 18 additional hours and completion of, or enrollment in, BA 3300.*

Overview of the petroleum industry including industry structure, vocations within the industry, basic exploration and production concepts, regulatory issues, and current events and status of the industry.

### 3399 Directed Study in Energy Management

*Prerequisite: Approval of department chair.*

Directed study in selected topics in energy management.

**4301 Energy Law (3-3-0)**

*Prerequisite: BA 3300, BA 3301, and EM 3301.*

Study of law as it relates to the energy industry. Emphasis on legal concepts relating to mineral interests and contracts commonly used in the industry, title, leasing, joint operations, farmouts, drilling contracts, marketing contracts, bid agreements, international agreements and their economic consequences, regulatory and environmental issues.

**4310 Energy Transactions and Practical Solutions - Case Study (3-3-0)**

*Prerequisite: BA 3300, EM 3301, MGT 3303, and FIN 3302.*

Case study of actual and hypothetical transactions in the energy industry. Deals with all facets of decision making including analysis of predicted returns, synergies, cost reduction, risk profiling, cultural ramifications of acquisition and divestiture, long-term vs. short-term implications of transactions and their effects on stakeholders.

**4350 Hydrocarbon Marketing: From the Wellhead to the Consumer (3-3-0)**

*Prerequisite: BA 3300, MKT 3301, and MKT 3302.*

Examines upstream, downstream and midstream marketing opportunities. Topics include fractionating and refining, transportation differentials, premiums, discounts and penalties. Regulatory and marketing issues for integrated companies.

## ENG (English)

**1101 THEA Tutorial (1-1-0)**

Tutorial instruction designed to prepare students to pass the writing component of the THEA exam.

**1105 Writing Tutorial (1-0-3)**

*Prerequisite: Eligibility for ENG 1301 or permission of department.*

Individualized instruction in English composition. Suggested for students who have problems in some aspect of writing and who seek to improve their mastery in particular areas. Instructor designs a course of study to assist student in learning new skills or in overcoming specific errors. Fulfills no English composition degree requirement. Course is offered on a pass/fail basis. May be repeated once without permission of department.

**1300 Fundamentals of English (3-3-0)**

Placement examination is required. Introduction to the writing process, including such elements as awareness of audience, prewriting, organization strategies, revising and editing to conform to the major conventions of standard written English.

**1301 Composition I (3-3-0)**

*Prerequisite: A grade of C or better in ENG 1300 or ENG 130A, or placement by examination.*

Review of the writing process, including such elements as audience analysis, invention, drafting and revising. Practice in expository techniques of writing and attention to readings. (ENGL 1301)

**1302 Composition II (3-3-0)**

*Prerequisite: A grade of C or better in ENG 1301 or placement by examination.*

A continuation of ENG 1301; emphasis on writing based on research. (ENGL 1302)

**1318 Introduction to the Study of English Grammar**

Introduction to basic grammar concepts and terminology through exploration of language variation and language systems.

**2301 Survey of World Literature: Ancient to 17th Century (3-3-0)**

*Prerequisite: ENG 1302.*

A study of literature of the world from its beginnings through the 17th Century. (ENGL 2332)

**2302 Survey of World Literature: 17th Century and Beyond (3-3-0)**

*Prerequisite: ENG 1302.*

A study of literature of the world from the 17th century to the present. (ENGL 2333)

**2311 Survey of American Literature: Beginnings to 1865 (3-3-0)**

*Prerequisite: ENG 1302.*

A study of American literature from the Colonial period through the Civil War. (ENGL 2327)

**2312 Survey of American Literature: 1865 to Present (3-3-0)**

*Prerequisite: ENG 1302.*

A study of American literature from 1865 to the present. (ENGL 2328)

**2313 Survey of British Literature: Beginnings to 1800 (3-3-0)**

*Prerequisite: ENG 1302.*

A study of British literature from its beginnings through the 18th century. (ENGL 2322)

**2314 Survey of British Literature: 1800 to Present (3-3-0)**

*Prerequisite: ENG 1302.*

A study of British literature from the 19th century to the present. (ENGL 2323)

**3302 Business and Technical Report Writing (3-3-0)**

*Prerequisite: 3 hours of literature.*

Study and practice of formal and informal presentation of technical information, with emphasis on report writing.

**3304 Advanced Business and Technical Report Writing (3-3-0)**

*Prerequisite: ENG 3302 or permission of department.*

Practice in writing in varied professional contexts. Special attention is given to audience and purpose, tone, logic and accuracy.

**3305 Essay Writing (3-3-0)**

*Prerequisite: 3 hours of literature.*

Study, analysis and practice of advanced rhetorical principles in non-fiction, with a view to increasing clarity, effectiveness and precision in a student's writing style.

**3306 Introduction to Literary Theory (3-3-0)**

*Prerequisite: 3 hours of literature.*

A study of contemporary methodologies in literary criticism and practice in applying them.

- 3307 Shakespeare (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 Reading and analysis of representative comedies, tragedies, histories and poems by Shakespeare, with special consideration of his life and the historical context.
- 3308 Legal Writing (3-3-0)**  
*Prerequisite: 3 hours of literature*  
 A study of the principles of analytical writing, with special emphasis on the strategies of legal persuasion and the techniques and appropriate style of legal writing. Students will learn to brief (summarize) published cases as well as to write legal memoranda.
- 3309 Creative Writing (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 Techniques of writing fiction and poetry; emphasis on the student's own work. May be repeated once for credit.
- 3310 Studies in Nonfiction Writing (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 An examination of a variety of nonfiction texts, including news presentations, books, and movies.
- 3311 Studies in Poetry (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 A study of poetry as a genre of literature, with emphasis on forms and styles; reading and analysis of poems from a variety of periods.
- 3312 Studies in Fiction (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 A study of short stories and/or novels. Consideration of the historical development of fiction as a genre and detailed analysis of the elements of fiction.
- 3313 Studies in Dramatic Literature (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 A study of representative plays from ancient to modern times, with emphasis on the origins and historical development of drama and its characteristics as a genre.
- 3314 Studies in Autobiography (3-3-0)**  
*(Cross-listed as HUM 3314. Credit may not be earned for both.)*  
*Prerequisite: 3 hours of literature*  
 A study of autobiographical writing, the course may analyze its forms or techniques, trace a topic or style of autobiographical literature or investigate critical problems posed by autobiography.
- 3315 Studies in Science Fiction (3-3-0)**  
*Prerequisite: 3 hours of literature*  
 A study of the conventions, major themes and/or history of futuristic or fantasy fiction.
- 3316 History of Rhetoric (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 An historical survey of rhetoric with emphasis upon its development as a discipline from Plato and Aristotle to the present day.
- 3317 Studies in the Theory of Rhetoric (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 An investigation of major contemporary theories of rhetoric and composition with special attention to the implications of those theories on the practices of writers.
- 3318 Studies in English Grammar (3-3-0)**  
*Prerequisite: 3 hours of literature*  
 An intensive survey of the principles and problems of English grammar with emphasis on developing vocabulary and understanding necessary to identify and explain writing choices and errors.
- 3319 Introduction to the Study of Language (3-3-0)**  
*Prerequisite: ENG 1302 and junior standing.*  
 An introduction to linguistic sciences. The course gives an overview of language, its use and development. Basic concepts covered are approaches to grammatical description, history, acquisition and social and regional variation.
- 3320 History of the English Language (3-3-0)**  
*Prerequisite: ENG 1302 and junior standing.*  
 A study of the development of English speech, writing, spelling, syntax and vocabulary.
- 3321 African-American Literature (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 A survey of prose, plays and poems by African-American writers.
- 3322 Mexican-American Literature (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 A study of Mexican-American literature and its cultural traditions from pre-Columbian Mexico to the present.
- 3323 Technology and Literature (3-3-0)**  
*(Cross-listed as HUM 3323. Credit may not be earned for both.)*  
*Prerequisite: 3 hours of literature.*  
 The course may study influences of technology or science on literature, analyze how literature represents technology, or interpret literature as a reflection of social ambivalence toward technology.
- 3324 American Ethnic Heritage (3-3-0)**  
*(Cross-listed as HUM 3304. Credit may not be earned for both.)*  
*Prerequisite: 3 hours of literature.*  
 An interdisciplinary study of ethnic contributions to the art, music, drama and literature of the United States.
- 3325 Medical Writing (3-3-0)**  
*Prerequisite: 3 hours of literature*  
 The study and practice of interpreting and incorporating findings and statistical results into clear, comprehensible and well-organized prose.
- 3326 Proposal Writing (3-3-0)**  
*Prerequisite: ENG 3302*  
 Practice in writing and editing a series of proposals of varying scope and complexity.

- 3328 Documentation and Manuals (3-3-0)**  
*Prerequisite: ENG 3302*  
 Application of general rhetorical principles and current theory in document design to the development of procedures manuals and other documentation.
- 3329 Environmental Writing (3-3-0)**  
*Prerequisite: 3 hours of literature*  
 Practice in presenting information about environmental issues as addressed by government, industry, private organizations and the mass media.
- 3330 Desktop Publishing (3-3-0)**  
*Prerequisite: ENG 3302 or concurrent enrollment in ENG 3302 or permission of department.*  
 An introduction to desktop publishing, covering specific applications of typography, graphics, layout and presentation, and using desktop publishing software.
- 3331 Advanced Desktop Publishing (3-3-0)**  
*Prerequisite: ENG 3330 or permission of department.*  
 A continuation of desktop publishing techniques using additional software for more complex projects.
- 3333 Writing for the Media (3-3-0)**  
*(Cross-listed as COMM 3311. Credit may not be earned for both.)*  
*Prerequisite: ENG 1302 and either COMM 1302 or ENG 3302.*  
 Study and practice of writing techniques appropriate to print and broadcast media with emphasis on the relevance of these skills to managing media relations.
- 3334 Writing for Presentation (3-3-0)**  
*(Cross-listed as COMM 3312. Credit may not be earned for both.)*  
*Prerequisite: ENG 1302 and either COMM 1302 or ENG 3302.*  
 This course covers writing for the media employed for presentations in business, industry and the professions. Possible course focuses include videoscripting, speechwriting and writing for slide and multimedia presentations.
- 3335 Publishing for the Web (3-3-0)**  
*Prerequisite: ENG 3330 or permission of the department.*  
 An introduction to web publishing techniques using web design software. As a substitute for ENG 3331, satisfies a core requirement for professional writing majors.
- 3336 Writing for the Web (3-3-0)**  
*Prerequisite: ENG 3302.*  
 An introduction to writing for the web with emphasis on structure, tone, voice, usability and navigation.
- 3340 Cultural Criticism (3-3-0)**  
*(Cross-listed as HUM 3310. Credit may not be earned for both.)*  
*Prerequisite: 3 hours of literature and 3 hours of philosophy.*  
 A survey of different ways of analyzing human culture. Students examine major schools of criticism and interpretation of society and its creative activity. This course is the gateway course for the BA in Humanities. May be repeated once for credit as topic varies.
- 3341 Postcolonial Studies (3-3-0)**  
*Prerequisite: Three hours of literature.*  
 A survey of major authors and themes in the literatures growing out of the experience of colonialism and its aftermaths.
- 3342 Organizational Publications (3-3-0)**  
*Prerequisite: ENG 3302.*  
 Introduction to organizational discourse and relevant theory and its application to designing, writing, editing and producing documents such as newsletters, white papers, annual reports and web sites. The course provides guided practice as students work individually and in teams to produce deliverables that reflect the principles of effective print and electronic communication with internal and external audiences.
- 3350 Gender Studies in Literature (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 An interdisciplinary study of the social construction of gender as reflected in literature from various historical periods and from various cultures.
- 3351 Children's Literature (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 This course introduces students to children's literature, its history, development, and uses in relation to the needs of the child and the culture.
- 3352 Introduction to Folklore (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 An introduction to the development of cultural studies and to the methodology of field research.
- 3353 Social Class and Literature (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 A study of the role of social class in literary representation, production, and consumption.
- 3354 Film as Narrative (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 A study of film as narrative, either fiction or non-fiction, and organized by topic, historical development, genre, or critical approach.
- 3355 Young Adult Literature (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 A study of texts written for readers from middle school through high school. The course emphasizes the history of texts written for young adults and examines and employs various theoretical approaches to textual analysis, including cultural critique of both classic and contemporary examples.
- 3371 Public Relations (3-3-0)**  
*(Cross-listed as COMM 3301. Credit may not be earned for both.)*  
*Prerequisite: ENG 1302 and junior standing.*  
 A study of techniques and methods of public relations in promoting the images of organizations, corporations and institutions, both public and private.

- 3373 Introduction to Advertising (3-3-0)**  
*(Cross-listed as COMM 3303. Credit may not be earned for both.)*  
*Prerequisite: ENG 1302 and junior standing.*  
 History, theory and basic techniques of advertising, with special emphasis on the use of media in advertising campaigns and message development for media campaigns.
- 3399 Directed Study in English**  
*Prerequisite: Formal approval by department chair and dean.*  
 Intensive individual study of a selected topic under the guidance of a member of the faculty.
- 4098 English Portfolio (0-0-0)**  
*Prerequisite: Declaring English major and filing for graduation.*  
 This non-credit course certifies that a degree requirement (submission of a portfolio of samples of the student's writing) has been fulfilled by a student majoring in the BA in English. The student enrolls in ENG 4098 in the semester of anticipated graduation and submits a portfolio of about five writing projects from a range of upper level courses approved for the English major. As an introduction to these writings, the student writes a 500-word reflective essay that shows the student's growth by explaining the choice of writings and the particular English major skills evident in each. The portfolio is graded S for being submitted or IP for not being submitted. Only a grade of S, certified by the degree coordinator, allows graduation.
- 4099 Professional Writing Portfolio (0-0-0)**  
*Prerequisite: Declaring Professional Writing major and filing for graduation.*  
 This non-credit course certifies that a degree requirement (submission of a portfolio of samples of the student's writing) has been fulfilled by a student majoring in the BS in Professional Writing. The student enrolls in ENG 4099 in the semester of anticipated graduation and submits a portfolio of about five writing projects from a range of courses approved for the PW major. Using guidelines supplied by the degree coordinator, the student provides documentation for each project. The portfolio is graded S for being submitted, or IP for not being submitted. Only a grade of S, certified by the degree coordinator, allows graduation.
- 4101 Proseminar in Professional Writing (1-1-0)**  
*Prerequisite: ENG 3302.*  
 A capstone course for Professional Writing majors; an overview of possibilities for further education and employment. Review of graduate programs and the application process; preparation for the job search, with special emphasis on assembling a portfolio.
- 4105 Senior Capstone Project (1-1-0)**  
*Corequisite: Enrollment in an upper-level English course and an approved project.*  
 A capstone course for English majors. Under the supervision of the instructor of the co-requisite course, students complete a project exemplifying creative and critical skills acquired as an English major.
- 4306 Science Writing (3-3-0)**  
*Prerequisite: 3 hours of literature*
- The study and practice of documenting, reporting and presenting science in articles, audiovisual scripts, specifications, reports and proposals.
- 4309 Advanced Creative Writing (3-3-0)**  
*Prerequisite: ENG 3309 or permission of instructor.*  
 Extended writing projects in poetry, fiction, and/or creative non-fiction. Emphasis on the practice of editing and publication. May be repeated once for credit, with permission .
- 4311 Contemporary Literature (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 A study of the themes and techniques of prominent 20th-century writers. Readings seek to identify and explore emerging traditions in literature since 1960.
- 4312 Literature of the South and Southwest (3-3-0)**  
*Prerequisite: 3 hours of literature.*  
 A study of Southern or Southwestern literature, the course may focus on a literary genre, region, topic, or critical approach.
- 4313 Psychology through Literature (3-3-0)**  
*(Cross-listed as HUM 4313. Credit may not be earned for both.)*  
*Prerequisite: 3 hours of literature.*  
 The course adopts psychological theory as a methodology for studying literature and its cultural contexts.
- 4314 Major Authors (3-3-0)**  
*Prerequisite: Six hours of literature.*  
 An in-depth study of one or two significant authors.
- 4318 Advanced Studies in English Grammar and Style**  
*Prerequisite: ENG 3318 or permission of the instructor.*  
 Writers will learn how to manipulate language structure and styles and will analyze the rhetorical implications for interpretation, acceptance, and understanding by various audiences.
- 4321 Advanced African-American Studies (3-3-0)**  
*Prerequisite: 6 hours of literature or ENG 3321.*  
 A specialized exploration of the aesthetic, critical, and theoretical bases of African-American literature - poetry, fiction, drama, and creative non-fiction.
- 4322 Editing, Rewriting and Copyreading (3-3-0)**  
*Prerequisite: ENG 3302 or permission of department.*  
 Fundamentals of editing for printed and digital media. Studies in clarity, concision, accuracy, grammar and stylebook conventions. Projects include rewriting, copy editing and copy reading documents of varying complexity.
- 4323 Feature Writing for Business and Industry (3-3-0)**  
*Prerequisite: ENG 3302 or permission of department.*  
 Procedures in recognizing ideas and gathering material for feature stories for business and industry ; analysis of reader appeal; study of feature story structure; development of style by practice in writing feature stories.

- 4325 Advanced Mexican-American Studies (3-3-0)**  
*Prerequisite: 6 hours of literature or ENG 3322.*  
 Specialized, focused study of the culture of literature by Mexican-Americans.
- 4330 Senior Seminar in the Humanities (3-3-0)**  
*(Cross-listed as HUM 4350. Credit may not be earned for both.)*  
*Prerequisite: Senior standing and 18 upper-level hours in the humanities, including HUM 3310/ENG 3340.*  
 A review of key issues in interpretation and understanding from philosophy, literature, history and the arts. It aims to provide students with means for synthesizing their studies in the liberal arts. This course is the capstone for the BA in Humanities.
- 4341 Advanced Postcolonial Studies (3-3-0)**  
*Prerequisite: Six hours of literature or ENG 3341.*  
 Specialized, focused study of postcolonial literature and theory. May be organized by region, genre, topic, or critical approach.
- 4350 Advanced Gender Studies (3-3-0)**  
*Prerequisite: 6 hours of literature or ENG 3350.*  
 Specialized investigation of the role of gender in literary representation and in culture.
- 4360 Publications Workshop (3-3-0)**  
*Prerequisite: ENG 3302.*  
 This course provides students an opportunity to gain hands-on print production experience. Working in the offices of student publications or other appropriate environments, students will write, edit and produce materials for publication, using word processing, graphics and electronic pagination software to prepare camera-ready materials.
- 4380 Field Experience in English**  
*Prerequisite: Departmental approval, ENG 3330, and ENG 3304 or ENG 4322.*  
 Placement of selected students in jobs involving professional writing within the public or private sector. Jobs may be paid or unpaid. Written reports, conferences with the instructor and other academic work are required. May be repeated once for credit.
- 4390 Topics in Language and Literature (3-3-0)**  
*Prerequisite: 3 hours of literature and junior standing.*  
 Selected topics in language and/or literature. May be repeated when topic varies.
- 4680 Field Experience in English**  
*Prerequisite: Departmental approval, ENG 3330, and ENG 3304 or ENG 4322.*  
 Placement for six hours credit of selected students in jobs involving professional writing within the public or private sector. Jobs may be paid or unpaid. Written reports, conferences with the instructor and other academic work are required.

## Graduate Courses

- 5304 Proseminar in Professional and Technical Communication (3-3-0)**  
*Prerequisite: ENG 3304 or equivalent, and graduate standing*

*or departmental approval.*  
 Orients students to faculty research and the issues, goals, and methodologies of professional and technical communication. Examines definitions and histories of the field; relevant theories, practices, and genres; data gathering and research; technology-related issues; ethical and intercultural implications; and professionalization.

- 5317 Rhetorical Theory and Criticism (3-3-0)**  
*Prerequisite: Graduate standing or departmental approval.*  
 Introduces major rhetorical theories, practice, and criticism. Provides practice in applying critical theory to contemporary texts.
- 5322 Advanced Editing (3-3-0)**  
*Prerequisite: Graduate standing or departmental approval.*  
 Fundamentals of editing for print and digital media. Studies in verbal and visual clarity, conciseness, accuracy, grammar, and stylebook conventions. Projects include copyediting, rewriting, and substantive editing of documents of varying complexity. Graduate students will complete additional projects, such as expanded annotated bibliographies, reports, or presentations on their research.
- 5325 Advanced Medical Writing (3-3-0)**  
*Prerequisite: Graduate standing or departmental approval.*  
 Theory and practice of documenting and reporting both narrative findings and statistical results for medicine and life sciences in a variety of formats including proposals, publishable articles, and patient information materials. Graduate students will present a seminar with an accompanying literature review and complete individual and group projects.
- 5330 Visual Design (3-3-0)**  
*Prerequisite: ENG 5317 and graduate standing or departmental approval.*  
 Practicum in the application of theory to original designs and to the analysis and revision of existing designs. Examines the theory and practices appropriate to print and electronic media.
- 5340 Project Management (3-3-0)**  
*Prerequisite: ENG 5304 and graduate standing or departmental approval.*  
 Introduces techniques for systematic planning and supervision of complex writing projects and the production of print and electronic documentation. Students will become proficient in collaborating with subject matter experts to develop and clarify content, coordinating writing and production elements for publication, and expert testing for usability.
- 6301 Composition Pedagogy (3-3-0)**  
*Prerequisite: Post-baccalaureate standing and 6 hours of upper-level language or writing courses.*  
 Composition theory, technology, and assessment as guides for teaching practices.
- 6303 Public Relations and Media (3-3-0)**  
*Prerequisite: Graduate standing or departmental approval.*  
 Explores the trends and issues affecting corporations, crisis management, public affairs, communication, consumer affairs, employee relations, environmental problems, and issues of

multinationals. May include the analysis of various examples of publicity materials (news conferences, feature placements, special events, media tours, case studies) as well as readings on the history and theories of public relations and propaganda.

**6306 Methods of Reading and Writing about Literature (3-3-0)**

*Prerequisite: Post-baccalaureate standing and 6 hours of upper-level literature courses.*

This course compares the theory and practice of two or three strategies for interpreting literature, such as formalism, reader-response, and cultural studies.

**6307 Advanced Shakespeare (3-3-0)**

*Prerequisite: Post-baccalaureate standing and 6 hours of upper-level literature courses.*

An in-depth study of four or five plays by Shakespeare, with attention to their literary and intellectual backgrounds, performance/film history, and contemporary critical approaches.

**6310 Intercultural and World Communication (3-3-0)**

*Prerequisite: Graduate standing or departmental approval.*

Examines issues surrounding communication for and with multiple audiences with diverse linguistic and cultural patterns. Will consider implications of controlled language systems.

**6312 Ethical and Legal Dimensions of Communication (3-3-0)**

*Prerequisite: Graduate standing or departmental approval.*

Helps students identify and address the ethical challenges that occur in private, social, and professional contexts. Focus on real world ethical dilemmas with diverse approaches to decision making using ethical reasoning and applied ethics. Legal considerations will include first amendment issues such as freedom of speech and press, copyright, libel, privacy, access, administrative law of advertising and broadcasting, and other legal problems in professional writing situations.

**6318 Stylistics and Editing (3-3-0)**

*Prerequisite: Graduate standing or departmental approval.*

Trains students in the examination and assessment of the rhetorical effects of style and editing choices and in the application of appropriate choices to a variety of documents, audiences, and settings. Covers information processing theory and practice. Students will be responsible for articulating clearly and concisely the reasons for their style and editing choices, including graphics.

**6319 Language Development and Variation: Implications for Educators (3-3-0)**

*Prerequisite: Post-baccalaureate standing and 6 hours of upper-level language or writing courses.*

An examination of language development and its relevance to skills required in an educational environment. The course will focus on sound patterns, word formation patterns, sentence structures, and writing systems and standards. It will also address ways in which language variation and multilingualism can interact with and affect development and acquisition of a standard variety.

**6322 Instructional Design (3-3-0)**

*Prerequisite: Graduate standing or departmental approval.*

Surveys and applies the theory, research, creation, develop-

ment, and delivery of courses in corporate and academic environments. Students will design and present curricula for business, industry, or classroom use.

**6323 Communications and Technology (3-3-0)**

*(Cross-listed as CJ 6323. Credit may not be earned for both.)*

*Prerequisite: Graduate standing or department approval.*

Acquaints students with various computer software programs and their applications to specific disciplines such as criminal justice, medical and science writing and technical communication. Projects will include documents as well as slide presentations incorporating analyzed research data. Students will expand their knowledge of rhetorical principles and techniques for reporting statistical analyses and conveying them to specialized audiences.

**6324 Writing in the Professions (3-3-0)**

*Prerequisite: Graduate standing or departmental approval.*

Examines researching, writing, and editing journal and newsletter articles in one or several technical fields or disciplines including science, medicine, pharmaceutical, engineering, environmental science, and law. Students will develop one article project from initial research to submission. May be repeated once for credit with departmental approval.

**6328 Hypermedia Theory and Design (3-3-0)**

*Prerequisite: Graduate standing or departmental approval.*

Reviews print-based methods of content organization and reader orientation. These traditional methods are contrasted with typical solutions in online and multimedia communications to the problems of content navigation, readability, and usability. Includes study of navigation maps or graphs, information architecture, traditional and hyperlinked indices, tables of contents and online content lists, and the use of document description or meta-information to facilitate effective information retrieval.

**6360 Special Topics in Technical and Professional Communication (3-3-0)**

*Prerequisite: Graduate standing or departmental approval.*

Selected topics in writing for industry, linguistics, pedagogy, and rhetorical or discourse theory. When course content varies, may be repeated with departmental approval.

**6380 Field Experience in Professional Writing and Technical Communication**

*Prerequisite: Fifteen hours and graduate standing or departmental approval.*

Provides industry experience for students. Writing or design projects developed in the course may be tested and used for the capstone project or portfolio .

**6390 Directed Research in Professional Writing and Technical Communication**

*Prerequisite: Fifteen hours and graduate standing or departmental approval.*

Supports and guides student research for thesis or capstone project. Students enroll during the semester they intend to research, develop, and propose a thesis or capstone project.

**6391 Thesis**

*Prerequisite: Eighteen hours, ENG 6390, and graduate standing or departmental approval.*

Provides direction and support for students during the semester when they intend to complete the thesis. No credit is awarded until the thesis is approved by the thesis committee and the student has passed an oral exam on the thesis and graduation portfolio. May be repeated until the thesis is approved.

**6392 Capstone Project**

*Prerequisite: Eighteen hours and ENG 6380/6390.*

As an alternative to the thesis, students may complete a capstone project in which they propose and design a long document for a real world audience. The project typically includes a form of usability testing and rewriting. No credit is awarded until the project is approved by the thesis committee and the student has passed an oral exam on the project and the graduation portfolio. The course may be repeated until the capstone project is approved.

## ENGR (Engineering)

**1302 Engineering and Technology Fundamentals (3-3-0)**

*Prerequisite: Credit or enrollment in MATH 1302.*

Overview of techniques and fundamental principles used in engineering, science and technology. Topics include: dimensional analysis and units, measurements, representation of technical information, problem solving, and an introduction to selected science and engineering topics.

**1400 PC Applications in Engineering (4-3-1)**

*Prerequisite: MATH 1301.*

Application of PC hardware and software to engineering problems. Data acquisition and computational methods for control systems, structures, and piping systems. Intensive use of the NSF sponsored laboratory for data acquisition, transmission and analysis of data. Modern computational approach to solids-fluids mechanics, and heat transfer.

**1401 Engineering Graphics and Visualization with Lab (4-3-4)**

*Laboratory fee required: \$12.*

Introduction to graphics, with emphasis on drafting techniques: use of instruments, lettering, geometric constructions, multiview projections, auxiliary views, sectional views, sketching drawings for electrical, piping and structural applications. Introduction to computer-aided drafting.

**1402 Fire and Safety Hazard Recognition with Lab (4-3-1)**

*Prerequisite: MATH 1302.*

*Laboratory fee required: \$12.*

Physical, chemical, electrical, and natural hazards and their relationship to loss of property and/or life. Safe location, storage, transportation and handling practices to eliminate or control the risk of fire and other hazards in the home, business and industry. Experiments and computer simulations.

**1403 Fire Suppression and Detection Systems (4-3-1)**

*Prerequisite: MATH 1302.*

*Laboratory fee required: \$12.*

The design, installation, maintenance and utilization of portable

fire-extinguishing appliances and pre-engineered systems. Operational capabilities and utilization requirements of fire detection and signaling systems. Fire detection and suppression applied in practical problems. Experimental demonstrations and computer simulation of hazard detection systems.

**1404 Automatic Fire Suppression Systems with Lab (4-3-1)**

*Prerequisite: MATH 1302.*

*Laboratory fee required: \$12.*

Detailed current standards for selection, design, installation, operation, and maintenance of automatic fire suppression systems. Experiments and computer simulations.

**1480 Occupational Safety Techniques (4-3-1)**

*Prerequisite: MATH 1302.*

*Laboratory fee required: \$12.*

Occupational facilities, equipment and operations and their inherent hazards. Directed toward worker, machine and environmental control. Equipment demonstrations and computer simulation of safe equipment operation.

**2304 Computer-Aided Drafting and Design I (3-2-2)**

*Prerequisite: ENGR 1401 or department approval.*

*Laboratory fee required: \$12.*

An introduction to Computer Aided Drafting and Design (CADD) systems commonly used in industry. Topics include introduction to CADD systems, basic drawing and editing commands, drawing annotations, dimensioning, cross hatching, creation and use of drawing symbols, generation of engineering drawing and drawing database.

**2407 Surveying with GIS-GPS (4-3-3)**

*Prerequisite: MATH 1302.*

*Laboratory fee required: \$12.*

Field training in the use of electronic measurement devices, total stations and global positioning systems (GPS) applied to construction projects. Field recording of data, uploading to microcomputers for analysis using geographic information systems (GIS). Computation of areas and construction volumes. Downloading of data for field layout. Surveying applied to flood prevention and environmental measurements. (ENGR 1407)

**2409 Engineering Mechanics with Lab (4-3-1)**

*Prerequisite: MATH 2401.*

*Laboratory fee required: \$12.*

Study of elastic bodies, stresses and strains, axial loads, torsion, beam stresses, beam deflections, combined stresses, columns, connections and behavior of materials under tension, compression and torsional loading. Study of thermal properties of materials. Applications of instrumentation.

**2410 Analysis of Engineering Networks with Lab (4-3-1)**

*Prerequisite: Departmental approval.*

*Laboratory fee required: \$12.*

This course applies energy principles of thermodynamics, fluid mechanics and electric circuits to the analysis of common engineering networks. Piping systems, electric circuits and structural networks are studied under basic principles of conservation and dissipation of energy. Applications of linear algebra to the analysis of networks. Computer simulation of engineering networks.

**3302 Engineering Economics (3-3-0)**

*Prerequisite: Junior standing.*

Time value of money, annual cost, present worth, future value, capitalized cost, break-even analysis, valuation and depreciation, income taxes. Economic evaluation of engineering alternatives and proposals. Use of spreadsheets. Introduction to optimization.

**3308 Fluid Mechanics (3-3-0)**

*Prerequisite: MATH 2401.*

Fluid properties, fluid statics, flow concepts and basic equations, viscous effects, laminar and turbulent flow, pipe flow, momentum equation and energy equation. Use of software in designing flow systems. Applications to fire prevention systems.

**3311 Structural Analysis (3-3-0)**

*Prerequisite: ENGR 2409.*

Analysis of trusses, beams and frames using classical and matrix methods. Service and ultimate load analysis. Intensive application of computers to structural analysis including program development. Experimental verification of analytical results. Vibration of structures. Experimental evaluation of existing structures for safety.

**3312 Reinforced Concrete Design (3-3-0)**

*Prerequisite: ENGR 2409.*

Analysis and design procedures based on ultimate load capacity based on the ACI Code, effects of creep, shrinkage, and temperature, torsional stresses and study of deflections. Computer applications to concrete design and program development. Behavior of concrete members under fire and explosion conditions.

**3401 Biomedical Instrumentation with Lab (4-3-1)**

*Prerequisite: EET 2421*

*Laboratory fee required: \$12.*

Applications of electronics devices to monitoring biological systems. Origin of biopotentials and bioelectrodes. Amplifiers for physiological measurements. Measurement techniques for cardiac and circulatory systems. Measurement of respiratory parameters. Measurement techniques for electrical activity of the brain. Electroencephalography.

**3403 Process Piping Design for Offshore Installations (4-3-1)**

*Prerequisite: ET 3402*

*Laboratory fee required: \$12*

A continuation of ET 3402 Process Piping Design II. This course applies the concepts and practices of process piping design to offshore installations.

**3404 Digital Signal Processing with Lab (4-3-1)**

*Prerequisite: ENG 1400 and EET 2421*

*Laboratory fee required: \$12.*

Analysis of discrete time signals and systems. Three key aspects will be addressed: sampling signals, frequency response, filter design and implementations. Both PC based and special purpose processor DSP systems will be used. Case studies of DSP applications in audio, communication, and biomedical systems.

**3406 Processing Control Systems with Lab (4-3-1)**

*Prerequisite: EET 3435.*

*Laboratory fee required: \$12.*

Process representations and P&ID diagrams. Temperature, pressure, flow, and level control in industrial processes. Supervisory Control and Data Acquisition (SCADA). Distributed Control System (DCS) configuration and implementation

**3407 Industrial Robotics with Lab (4-3-1)**

*Prerequisite: Departmental approval.*

*Laboratory fee required: \$12.*

This course addresses the problem of controlling robots that operate in dynamic, unpredictable environments. Students, in pairs, build their own robot, and program it to perform a variety of simple tasks. In addition, the course covers the major paradigms of robot programming and studies architectures for building perception and control systems for intelligent robots. Applications to industrial and medical systems.

**3409 PC Facilities Management with Lab (4-3-1)**

*Prerequisite: Departmental approval.*

*Laboratory fee required: \$12.*

This course addresses the problem of life cycle management of PC facilities. The course includes equipment selection, installation, maintenance, troubleshooting and upgrading. Hardware and software aspects of the PCs and its communications are covered in the lectures involving theory and intensive practice. Economic aspects of PC facilities.

**3410 Process Modeling and Simulation (4-3-1)**

*Prerequisite: ENGR 2410 or Departmental Approval.*

*Laboratory fee required: \$12.*

Process analysis based on the laws of physics and thermodynamics, material and energy balance. Modeling and simulation of typical industrial processes: gas processing, oil refinery and other petrochemical and chemical engineering processes. Steady state modeling and optimization for process design and dynamic modeling for process controllability. Use of computer software tool HYSYS.

**4326 Structural Dynamics and Control (3-3-0)**

*Prerequisite: ET 3322.*

Dynamic behavior of structural systems including structure and foundations. Finite element approach to the determination of natural frequencies and modes of vibration of structural systems. Dynamic behavior under dynamic forces including wind, earthquake, wave and vehicle actions. Linear and yielding structural systems. Control of structures under the action of dynamic forces. Electronic control systems.

**4328 Senior Project in Control and Instrumentation (3-3-0)**

*Prerequisite: EET 3435.*

This is a capstone course for students majoring in Control and Instrumentation Electronics Design. Students will work on comprehensive projects related to the design and implementation of control systems with complexity comparable to current industrial practice. The projects require the combined application of sensors/transducers, actuators and control elements, and industrial controllers implementation. The project work will be evaluated by a formal written report and an oral presentation.

**4330 Systems Safety Management (3-3-0)**

*Prerequisite: ENGR 2409.*

Fire and other hazards/safety techniques to recognize, evaluate and control potential occupational hazards. Critical path, LAD, PERT and human factors concepts. Computer simulations.

**4340 Senior Project in Piping Design (3-3-0)**

*Prerequisite: ENGR 3308 and ET 4315 or departmental approval.*

A capstone course consisting primarily of a process piping design project with complexity comparable to current industrial practice. The course and project requires the combined application of elements of piping layout and design, process equipment, thermodynamics, fluid mechanics, stress analysis and engineering economics. The course is to be taken near the completion of degree requirements towards the Process Piping Design degree program.

**4350 Industrial Loss Prevention (4-3-1)**

*Prerequisite: ENGR 2409.*

*Laboratory fee required: \$12.*

Specific industrial processes, equipment, facilities and work practices for detecting and controlling potential hazards. Computer simulation of hazard detection.

**4360 Advanced Safety and Fire Problems (3-3-1)**

*Prerequisite: Senior standing.*

Selected problems in the fire and hazards fields, occupational safety, occupational health and industrial security area. Research of state-of-the-art technologies to prevent or correct such problems. Development of computer software to simulate selected hazard conditions.

**4370 Human Factors in Fire and Safety (3-3-1)**

*Prerequisite: Senior standing.*

Case study of the influence of human behavior in life losses during hazardous situations. Cases include flood, tornado, fire, and explosions.

**4375 Security of Computing Systems (3-3-0)**

*Prerequisite: ENGR 1400.*

Security of hardware and software systems. Case study of information losses due to fire, flood and tornado. Software safety cases including viruses and distortion of code and data integrity.

**4410 Industrial Hygiene Instrumentation with Lab (4-3-1)**

*Prerequisite: ENGR 2409.*

*Laboratory fee required: \$12.*

Toxic or irritating substances, physical, biological, ergonomic and other occupational stress factors causing employee illness or discomfort. Environmental pollution sources and controls. Description, operation and application of quantitative instruments in general use in industrial hygiene. Computer simulation of industrial environments.

**4411 Structural Design for Fire Safety (4-3-1)**

*Prerequisite: ENGR 3311.*

Analysis and design of structures under fire that threatens human life. Introduction to fires and fire safety. Contribution of

structural fire resistance to overall fire safety. Application of fire computer models to the design of structures safe for human occupancy. Fire performance of structural materials.

**4420 Fire Dynamics (4-3-1)**

*Prerequisite: Senior standing.*

Study of the critical aspects of fire dynamics including: Fuels and combustion processes. Physical chemistry of combustion. Diffusion flame and fire plumes. Spread of flames. Production and movement of smoke. Computer simulations of fire dynamics.

**4450 Industrial Safety (4-3-1)**

*Prerequisite: ENGR 2409.*

*Laboratory fee required: \$12.*

Principles of fire dynamics, heat transfer and thermodynamics are combined with a general knowledge of automatic detection and suppression systems to analyze fire protection requirements for generic industrial hazards. Topics covered include safety separation distances, plan layout, hazard isolation, smoke control, warehouse storage and flammable-liquid processing and handling. Historic industrial fires influencing current practice on these topics are also discussed.

## ET (Engineering Technology)

**2401 Piping Drafting I (4-3-3)**

*Prerequisite: ENGR 1401 or equivalent.*

*Laboratory fee required: \$12.*

Basic piping fundamentals used in design and layout of piping systems for petroleum and petrochemical facilities. Items stressed are symbols, plot plans, flow diagrams, abbreviations and specifications. Safety aspects of piping systems.

**2402 Piping Drafting II (4-3-3)**

*Prerequisite: ET 2401.*

*Laboratory fee required: \$12.*

Continuation of ET 2301. Application of basic piping fundamentals in arrangement drawings and isometric configurations. Piping systems, underground piping, meter runs control valve manifolds, level instruments and bridles and steam traps are also studied. Safety aspects of piping systems.

**3307 Applied Thermodynamics (3-3-0)**

*Prerequisite: MATH 2401 and CHEM 1307.*

Fundamentals of thermodynamics, including applications of the first and second laws, enthalpy, entropy, application of reversible and irreversible processes to a variety of systems and problems, use of thermodynamic tables and ideal gas law. Energy balances and their applications. Estimation of properties. Thermodynamics of fire.

**3308 Materials Science (3-3-0)**

*Prerequisite: CHEM 1307.*

The physical, mechanical, thermal, magnetic, electrical and chemical properties and their relation to atomic, molecular and crystalline structure of materials. Introduction to processing of materials and their testing. Applications of material science in engineering. New frontiers in materials technology. Criteria for selection and use of materials. Safety criteria for section of materials.

**3320 Modern Concrete Technology (3-2-2)**

*Prerequisite: Junior standing.*

*Laboratory fee required: \$12.*

Properties and requirements of cement and aggregates, water-cement ratio and proportioning of mixtures for concrete. Behavior and properties of fresh and hardened concrete. Emphasis on behavior under pressure and fire. Handling of fresh concrete, formwork, quality control, inspection and laboratory testing of concrete. Application of expert systems in concrete technology. High-strength and lightweight concretes. Inspection of concrete structures.

**3321 Soil Mechanics (3-3-0)**

*Prerequisite: Junior standing.*

*Laboratory fee required: \$12.*

Geological origin, identification, description and classification of soils. Physical, consolidation and hydraulic properties of soil. Site and subsurface explorations and testing of soil. Essentials of good foundations. Stability of slopes and earth pressure. Computer application in soil mechanics. Environmental contamination of soils.

**3322 Finite Element Analysis of Structures (3-3-0)**

*Prerequisite: ENGR 3311.*

Finite element analysis of structures. Numerical and matrix techniques and their relationships to classical energy and differential equation methods. Expert systems applied to structural design. Experimental determination of stiffness and flexibility matrices. Nondestructive evaluation of structures. Vibrations of structures. Finite element analysis of structures exposed to high temperatures. Practical training in industrial FEA codes. Program development.

**3325 3D Computer Modeling, Rendering and Animation (3-2-2)**

*Prerequisite: ENGR 3305 and junior standing.*

Application of advanced computer aided design principles to construction of 3D computer models for structural, piping, and electronics systems. Computer animation applied to control of systems in the same fields. Applications of plan layout for analysis of industrial safety.

**3399 Directed Study in Engineering Technology**

*Prerequisite: Approval of department chair and dean.*

Selected topics in Engineering Technology.

**3401 Process Piping Design I (4-3-3)**

*Prerequisite: ET 2402 and ENGR 2304.*

*Laboratory fee required: \$12.*

Concentration on piping design problems associated with heat exchangers, pumps, horizontal and vertical vessels, pipeways and plant layouts. Emphasis is placed on design concepts used in the preparation of piping arrangement, elevation and isometric drawings. Piping analysis to meet safety specifications.

**3402 Processing Piping Design II (4-3-3)**

*Prerequisite: ET 3401.*

*Laboratory fee required: \$12.*

Concentration on piping design problems related to plant design. Heaters, boilers and compressors are covered. Problems associated with underground piping are considered. Continued emphasis is placed on preparation of piping arrangement, ele-

vation and isometric drawings. Includes an introduction to piping flexibility and standard piping details. Introduction to use of scale plot and engineering models in the process piping design industry. Piping analysis to meet safety specifications.

**4301 Piping Models (3-2-2)**

*Prerequisite: ET 3402, ENGR 2304.*

*Laboratory fee required: \$12.*

Introduction to engineering scale models from initial layout of plot-plan model through completion of engineering design model. Use of 3D solid modeling software to design plants including modeling of equipment, steel structures and piping. Plant safety considerations.

**4304 Pressure Vessel Design (3-3-0)**

*Prerequisite: ENGR 2409.*

Analysis and design of pressure vessels, selection of materials and introduction to standards and codes for pressure vessels. Safety consideration in vessel design.

**4307 Fluid Mechanics II (3-3-0)**

*Prerequisite: ENGR 3308 or department approval.*

Dimensional analysis, surface resistance, boundary layer theory, drag, lift, turbomachinery, including pumps, compressors, turbines, fluid measurements, channel flow.

**4311 Heat-Power Applications (3-3-0)**

*Prerequisite: ET 3307 or department approval.*

Heat-power cycles, refrigeration systems, gas-vapor mixtures, reactive systems, gas compressors, gas turbines, steam processes and cycles. Humidification/ dehumidification processes and use of psychometric charts. Analysis of environmental conditions in fire.

**4313 Applied Heat Transfer (3-3-0)**

*Prerequisite: Credit or enrollment in ET 4307 or department approval.*

Steady and unsteady state conduction, free and forced convection, radiation, heat exchangers and heat transfer with change in phase. Applications to fire analysis.

**4315 Piping Stress Analysis (3-3-0)**

*Prerequisite: ENGR 2409 and ET 2401.*

Introduction to piping stress analysis. Piping and pressure vessel codes, failure theories, stress intensification and flexibility factors, methods of stress analysis, supports and restraints for piping. Intensive application of CAESAR II computer software. Safety aspects of stress analysis.

**4320 Prestressed Concrete (3-3-0)**

*Prerequisite: ENGR 3312.*

Principles and practice of prestressed concrete systems and techniques for applying prestress. Computer analysis and design of determinate and indeterminate prestressed concrete structures. Limit analysis and ultimate strength behavior. Critical aspects of prestressing under fire. Rehabilitation of structures. Lightweight prestressed concrete.

**4321 Structural Steel Design (3-3-0)**

*Prerequisite: ENGR 2409.*

Design of structural steel members based on LRFD spec-

ifications. Design of members under tension, compression and bending. Laterally unsupported beams. Combined bending and axial loading connections. Nondestructive evaluation of steel structures. Fire protection of steel structures.

**4322 Foundation Design (3-3-0)**

*Prerequisite: ET 3321 and ENGR 2409.*

Introduction to foundation design, factors in bearing capacity and settlements of foundations, lateral earth pressure on retaining walls, bulkheads and pile foundation. Computer applications in foundation engineering. Nondestructive testing of foundations. Safety considerations in foundation construction and performance.

**4323 Technology Seminar (3-3-0)**

*Prerequisite: ENG 3302, senior standing, completion of Writing Proficiency Exam, or department approval.*

A self enrichment and professional development course essential for a successful career after graduation. Students are required to make oral presentations and submit written reports and essays on topics emphasizing ethical and international dimensions of the engineering profession. Class participation and case discussions are emphasized. Industrial safety considerations.

**4324 Senior Concrete Design Project (3-3-0)**

*Prerequisite: ENGR 3312.*

Conception, analysis and design of complex concrete structures. Application of prestressed concrete, finite element analysis, CADD and foundation engineering to structural design. Includes construction drawings, specifications, cost estimates project management and field trips.

**4325 Senior Steel Design Project (3-3-0)**

*Prerequisite: ET 4321.*

Conception, analysis and design of complex street and composite structures. Application of finite element analysis, AutoCAD and foundation engineering to structural design. Includes construction drawings, specifications, structural composites, cost estimates project management and field trips.

**4380 Field Experience in Engineering Technology**

*Prerequisite: Department approval.*

Field Experience integrates theory learned in the classroom with practical work experience in a job related to the student's academic and professional goals. The work experience and the academic experience must be directly related. For additional details, inquire in Career Services (Room 370-North).

## ETC (Educational Technology)

**3301 Educational Technology (3-1-2)**

*Prerequisite: CS 1305, CIS 1301 or demonstrated competence.*

An instruction to instructional technology appropriate for young children and adolescents. Examples of computer-based instructional tools that support interactive learning will be discussed. Provides a conceptual framework for understanding the design of multimedia courseware as well as the opportunity for hands-on experience with a variety of software packages.

## FIN (Finance)

**1301 Personal Finance (3-3-0)**

*Prerequisite: Credit or enrollment in MATH 1300.*

This course addresses all financial decisions a person will make over his/her lifetime. Topics covered would include choice of personal insurance, investments, retirement planning, purchase of long-term assets, etc.

**2301 Principles of Real Estate (3-3-0)**

*Prerequisite: MATH 1300.*

An introduction to all phases of real estate: ownership, appraisal, law, financing, land use analysis, taxation, investments and property management. Operation of the real estate market, urban growth, city structures and land use planning are also studied. (REAL 1301)

**3301 Small Business Finance (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours, ECO 2301 and ACC 2302.*

Application of basic financial management principles to the small business with particular emphasis to access of funds, venture capital and efficient management of cash and working capital.

**3302 Business Finance (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours, ACC 2302, ECO 2301, ECO 2302 and completion of or concurrent enrollment in MATH 3309.*

Application of financial management techniques to profit-oriented organizations: measuring of needs for business funds, acquiring business funds, investing business funds and elements of international finance.

**3305 Money and Banking (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours, ECO 2301 and ECO 2302.*

Role and impact of banking on a market-oriented economic system.

**3306 Risk Management (3-3-0)**

*Prerequisite: FIN 3302.*

Theories of risk management, including diversification, retention, avoidance, prevention, self-insurance, transfer and insurance as related to current financial practices of business firms and individuals.

**3309 Quantitative Methods in Finance (3-3-0)**

*Prerequisite: A grade of C or better in MATH 3309.*

Advanced quantitative and statistical techniques used for analysis and research purposes in the area of finance and investments.

**3311 Real Estate Valuation (3-0-0)**

*Prerequisite: Completion of the common core plus 18 additional hours.*

Introduction to the fundamental principles of real estate valuation. Identification of the elements of economics and urban land economics which underlie the theory of value for real estate. The course emphasizes and analyzes the steps in real property

appraisal from elementary analysis to sophisticated income property analysis.

**3312 Management of Real Property (3-0-0)**

*Prerequisite: FIN 2301.*

Management techniques applicable to income producing properties. Special emphasis on leases, lease negotiations, ownership, insurance, taxation of industrial and commercial properties.

**3313 Real Estate Finance (3-0-0)**

A study of real estate financing topics from both lender's and equity investor's viewpoints, with emphasis on analyzing residential and income properties. Various types of financing are considered and analyzed with respect to specific property types: residential, apartments, shopping centers, office buildings, industrial properties and special use properties. Includes computer applications.

**3399 Directed Study in Finance**

*Prerequisite: Formal approval by department chair and dean.*

Selected topics in finance; intensive individual study under the guidance of a member of the finance faculty.

**4301 Cases in Managerial Finance (3-3-0)**

*Prerequisite: FIN 3302.*

The case method approach is used to provide a learning experience through the simulation of decision-making in a managerial finance setting.

**4303 International Finance (3-3-0)**

*Prerequisite: FIN 3302.*

This course addresses the area of finance in the international context. This course will help students understand international financial markets, international business finance and international investments.

**4304 Management of Financial Institutions (3-3-0)**

*Prerequisite: FIN 3302 and FIN 3307.*

Institutional policies and their interrelationships; acquisition and management of funds, maximizing earnings consistent with an acceptable degree of risk.

**4305 Investments (3-3-0)**

*Prerequisite: FIN 3302.*

Principles, types and forms of investments; supply and demand for funds; characteristics of securities; federal, state and municipal bonds; analysis of securities; and the movement of security prices.

**4306 Employee Benefits and Retirement Planning (3-3-0)**

*Prerequisite: FIN 3302.*

Pension plan design, other employee benefits, social security benefits and financial planning for employee retirement.

**4307 Derivative Securities (3-3-0)**

*Prerequisite: FIN 3302.*

An introduction to the rapidly expanding derivatives market. The course explores hedging techniques through the use of options, futures and swaps.

**4309 Seminar in Finance (3-3-0)**

*Prerequisite: FIN 3302 and senior standing.*

An opportunity for the student to become aware of the latest changes affecting finance and to integrate the subject matter learned in prior academic years.

**4310 Portfolio Management (3-3-0)**

*Prerequisite: Credit or enrollment in FIN 4305.*

Investment practices of financial institutions: commercial banks, savings and loan associations, credit unions, pension funds, life insurance companies and investment companies. Focus on portfolio practices to maximize yield, subject to liquidity and regulatory constraints.

**4311 Income Property Valuation (3-3-0)**

*Prerequisite: FIN 3311.*

Advanced course in appraisal of income producing properties. Topics include analysis and decision-making, problem solving techniques and research designs for the appraisal of properties. Statistical applications will be stressed with computer applications.

**4316 Real Estate Investments and Taxation (3-0-0)**

*Prerequisite: FIN 3302.*

Real estate investment decisions and the variables which affect real estate values. Mathematical techniques and application, utilizing computer financial models for real estate investment analysis.

**4320 Financial Planning (3-3-0)**

*Prerequisite: FIN 3302.*

Elements of personal finance, investments, insurance, retirement and estate planning.

**4380 Field Experience in Finance**

For more information and qualifications see the Field Experience in the College of Business section of this catalog and/or the department chair for your major.

**4390 Special Topics in Finance (3-3-0)**

*Prerequisite: Junior standing.*

Topics of special or current interest in the area of finance taught by faculty or visiting lecturers who possess a special area of expertise.

## FREN (French)

**1401 Elementary French I (4-3-1)**

*Laboratory fee required: \$10.*

Should not be taken by native speakers of French or by students with two or more years of high school French. Instruction in understanding, speaking, reading and writing French with emphasis on grammatical structures. (FREN 1411)

**1402 Elementary French II (4-3-1)**

*Prerequisite: FREN 1401 or equivalent.*

*Laboratory fee required: \$10.*

A continuation of FREN 1401, with emphasis on speaking and listening skills. Should not be taken by native speakers of French or by students with two or more years of high school French. (FREN 1412)

**2301 Intermediate French I (3-3-0)**

*Prerequisite: FREN 1402 or equivalent.*

Should not be taken by native speakers of French. Grammar review with continued emphasis on oral and listening skills and increased attention to writing and reading. (FREN 2311)

**2302 Intermediate French II (3-3-0)**

*Prerequisite: FREN 2301 or equivalent.*

Should not be taken for credit by native speakers of French. Continuation of FREN 2301, with more emphasis on writing and reading skills. (FREN 2312)

**3399 Directed Study in French (3-3-0)**

*Prerequisite: Junior standing; formal approval by department chair and dean; cumulative GPA of 3.0 and GPA of 3.3 in the specific area of directed study.*

Selected topics in the field; intensive individual study under the guidance of a faculty member.

## GEOG (Geography)

**1301 Introduction to Geography (3-3-0)**

This course provides the student with exposure to the basic concepts and subdivisions of the discipline of Geography. In addition to providing basic literacy in the discipline, the course shows how an understanding of geography aids one's ability to evaluate the reasons behind the physical patterns of contemporary life.

**1302 World Geography (3-3-0)**

Key geographic topics of location, population, political status, natural environment, economy, potentialities and problems as they relate to major geographic regions are discussed. (GEOG 1303)

## Graduate Courses

**6301 World Cultural Geography (3-3-0)**

*Prerequisite: Graduate standing.*

This course examines the interactions among people, cultures, and natural surroundings. Selected regions in the world will be explored for the dynamic patterns they reveal in the relationships among population, social organization, environment and technology. Focal topics include language, dialect, architecture, religion, cultural aspects of cities, economics, agriculture, medicine, resources, politics, and their connection to physical/topographic features.

## GEOL (Geology)

**1304 Introduction to Meteorology (3-2-2)**

*Laboratory fee required: \$12.*

A course for non-science majors focusing on the study of the atmosphere – its composition, structure and properties – with emphasis on the processes responsible for weather, climate controls and change and the impact of atmospheric phenomena on society. Students will collect, analyze and synthesize online, real-time weather data in order to understand current

weather conditions and be able to make predictions of future weather circumstances.

**1307 Earth Science I (3-2-2)**

*Laboratory fee required: \$12.*

An integrated lecture-laboratory approach to physical geology for non-science majors that will employ traditional and specimen approaches along with petrography and computer exercises. Geomorphology and structural geology will be integrated with basic map reading and will consider public debates on seismic risk analysis, coastal erosion, stream/flood control, and the influences these have on modern culture. (GEOL 1301)

**1308 Earth Science II (3-2-2)**

*Prerequisite: GEOL 1307 or equivalent.*

*Laboratory fee required: \$12.*

An integrated lecture-laboratory approach to historical geology for non-science majors that will employ hand specimen and other techniques for the identification of fossils and will include major controversies involving the tempo and mode in evolution as well as discussion of the origin of life and coevolution of our planet and life on it. Exercises will teach principles of structure geology, sequence of events, fundamental stratigraphic concepts and graphic correlation. These various structural and stratigraphic analyses will be united in interpretation of geologic maps and their application to human culture. (GEOL 1302)

**1405 Physical Geology (4-3-3)**

*Laboratory fee required: \$12.*

Study of the materials that make up the crust of our planet, evolution of landforms, structure and earth movements, including plate tectonics and the gross structure of the Earth. Credit for both GEOL 1405 and GEOL 1307 may not be applied toward a degree. (GEOL 1403)

**1406 Historical Geology (4-3-3)**

*Prerequisite: GEOL 1405.*

*Laboratory fee required: \$12.*

Study of concepts about the Earth and its history from ancient to modern times, and development of the geological time scale. Includes examination of how geologists interpret geological time and the coevolution of our planet and the life on it. Credit for both GEOL 1406 and GEOL 1308 may not be applied toward a degree. (GEOL 1404)

**3300 Undergraduate Research (3-0-9)**

*Prerequisite: Approval by science advisor, minimum GPA of 2.5 and permission of instructor.*

Independent investigation of a specific problem or topic in geology research under the direction of a selected faculty member.

**3301 Evolution of the Earth and Its Inhabitants (3-3-0)**

*(Cross-listed with BIOL 3301. Credit may not be earned for both.)*

*Prerequisite: One year of biology or geology.*

Analysis of the concepts and discoveries that led Darwin to propose his Theory of Natural Selection to explain evolution and the subsequent lines of evidence in both geology and biology that substantiate his ideas and unify our understanding of the relationships of various organisms to each other. Specific

groups of organisms will be discussed in relation to morphological changes through time as well as adaptations that may occur due to environmental changes and other variables.

**3303 Environmental Geology (3-3-0)**

*Prerequisite: BIOL 1302/1102, CHEM 1308/1108 and GEOL 1306/1106.*

Analysis of the influence geology has on the formulation of public policy. Topics to be included are surface/ sub-surface water quality and quantity, flood control and navigation, shoreline processes, subsidence, mineral resources and impact from their extraction, waste disposal and geologic hazards such as earthquakes, vulcanism and mass movements.

**3340 Inorganic Geochemistry (3-3-0)**

*(Cross-listed with CHEM 3340. Credit may not be earned for both.)*

*Prerequisite: GEOL 1305/1105 and CHEM 1308/1108.*

Examination of the Earth and earth processes through the application of chemical principles including fractionation and distribution of the elements, the chemical evolution of planetary interiors and interactions between Earth's lithosphere, hydrosphere and atmosphere. Topics include evaluation of theories and analysis of data relevant to geologic problems facing society such as the search for and utilization of mineral resources and the environmental implications of waste disposal and remediation.

**3399 Directed Study in Geology**

*Prerequisite: Formal approval by department chair and dean.*  
Selected topics in geology; intensive individual study under the guidance of a member of the geology faculty.

**3410 Mineralogy (4-3-3)**

*Prerequisite: GEOL 1406.*

*Laboratory fee required: \$12.*

The systematic description of symmetry, crystal chemistry, the growth of crystals, the classification of minerals, and mineral identification.

**3411 Paleontology (4-3-3)**

*Prerequisite: GEOL 1306 and GEOL 1106.*

*Laboratory fee required: \$12.*

A paleobiologic approach to the major taxa of invertebrate fossils emphasizing their morphology, biotic relationships, paleoecology and evolution.

**3412 Structural Geology (4-3-3)**

*Prerequisite: GEOL 1305/1105 and 1306/1106 or GEOL 1307 and 1308.*

*Laboratory fee required: \$12.*

Genesis, classification, and recognition of geologic structures. Fundamental concepts of tectonics, origin, arrangement and distribution of rock masses that form the Earth's crust.

**4190 - Selected Topics in Geology**

**4490** *Prerequisite: Junior standing; will vary according to topic.*

Selected topics in upper-level geology according to the needs and interests of the students. Example topics include micro-paleontology and extraterrestrial geology.

**4325 Advanced Microscopy (3-1-6)**

*(Cross-listed as BIOL 4325. Credit may not be earned for both.)*

*Prerequisite: 16 hours of laboratory-based science including 8 upper-level hours and approval of instructor.*

*Laboratory fee required: \$24.*

Instrumentation principles and laboratory exercises associated with the applications of a variety of microscopes and associated techniques, including preparation of samples, light microscopy (bright-field, dark-field, phase-contrast, polarized and fluorescent), scanning electron microscopy, transmission electron microscopy, and X-ray microanalysis.

**4399 Senior Honors Thesis**

*Prerequisite: Senior standing and enrollment in the Honors Program in the Natural Sciences.*

A research project, supervised by a member of the natural science faculty or scientist at an affiliated research institution or laboratory. The completed research project must be presented in both written and oral form to the science faculty. No more than six hours credit for this course may be applied toward a degree.

## HIST (History)

**1305 United States History to 1877 (3-3-0)**

*Prerequisite: Enrollment in or completion of ENG 1301.*

Traces the growth and development of the United States from Colonial origins through independence, the establishment of the republic, territorial expansion, Civil War and Reconstruction. (This course satisfies 3 of the 6 hours of American history mandated by the state of Texas.) (HIST 1301)

**1306 United States History after 1877 (3-3-0)**

*Prerequisite: Enrollment in or completion of ENG 1301.*

Traces the development and growth of the United States from the end of Reconstruction through industrialization, overseas expansion, global wars, the Great Depression and the post-World War II era. (This course satisfies 3 of the 6 hours of American history mandated by the state of Texas.) (HIST 1302)

**2303 Texas History (3-3-0)**

*Prerequisite: Enrollment in or completion of ENG 1301.*

Texas from pre-Colonial origins to the present. Emphasis on social, economic and ethnic influences that have shaped modern Texas. (This course satisfies 3 of the 6 hours of American history mandated by the state of Texas.) (HIST 2301)

**2309 Ethnic Minorities in American History (3-3-0)**

*Prerequisite: Enrollment in or completion of ENG 1301.*

The history of race and national origins as important elements in American history. Emphasis on Black, Hispanic, Asian, European and native American groups and the strategies used to address their conditions. (This course satisfies 3 of the 6 hours of American history mandated by the state of Texas.) (HUMA 2319)

**3301 20th Century Europe (3-3-0)**

*Prerequisite: 6 hours in history, junior standing, or consent of instructor.*

Problems in foreign and domestic policies faced by Europe

since 1914. Major topics examined within the European context include problems caused by World War I and the Versailles Peace Treaty, the effects of the Depression, World War II and its aftermath, the disintegration of colonial empires and Europe's adjustment to its new role in world affairs.

**3303 Modern American Social Protest: 1890s to the Present (3-3-0)**

*Prerequisite: HIST 1306 and 3 additional hours in history, junior standing, or consent of instructor.*

A course in 20th century US social history. Social problems, social change, social movement and social policies are seen in historic perspective. Focus of the course varies each time course is offered.

**3304 The Vietnam War (3-3-0)**

*Prerequisite: HIST 1306 and 3 additional hours in history, junior standing, or consent of instructor.*

This course discusses the background to one of the most divisive issues of 20th century America; explains why the United States enmeshed itself in this conflict and how it extricated itself. Diplomatic, political and social aspects of the war and its effect on the people of both countries.

**3305 The United States, 1900-1945 (3-3-0)**

*Prerequisite: HIST 1306 and 3 additional hours in history, junior standing, or consent of instructor.*

Historical development from the beginning of the 20th century to the end of World War II. Reform movements and their impact on the American society. The Populist and Progressive movements, the New Deal, the Depression and the impact of war on the society.

**3306 US Diplomatic History (3-3-0)**

*Prerequisite: HIST 1305, HIST 1306, junior standing, or consent of instructor.*

This course explains the relationships of the United States with other countries and explains the importance of these connections to the growth of America's political and commercial power.

**3308 History of Mexico (3-3-0)**

*Prerequisite: 6 hours in history, junior standing, or consent of instructor.*

Mexico from its Indian origins to its present position as a burgeoning American power. The influence of the nation's cultural heritage and the reformist impulses of the 19th and 20th centuries.

**3309 20th Century England (3-3-0)**

*Prerequisite: 6 hours in history, junior standing, or consent of instructor.*

A history of modern England focusing on political, cultural, social, literary, and economic issues.

**3310 20th Century Russia (3-3-0)**

*Prerequisite: 6 hours in history, junior standing, or consent of instructor.*

A study of the change and continuity in politics, literature and society in Russia and the former Soviet Union since 1890.

**3311 US Military History (3-3-0)**

*Prerequisite: HIST 1305, HIST 1306, junior standing, or consent of instructor.*

This course examines how warfare has affected our nation's existence, why American wars have occurred, the effect of the evolution of weapons upon America's wars and the perspective of the soldier on the front line.

**3312 Readings in Texas History (3-3-0)**

*Prerequisite: 6 hours in history, junior standing, or consent of instructor.*

An interpretative study of significant social, cultural, political and economic issues in Spanish Texas, the Republic and statehood.

**3313 Houston: Past and Present (3-3-0)**

*Prerequisite: 6 hours in history, junior standing, or consent of instructor.*

A history of Houston from its founding by the Allen brothers in 1836 to the present. Political, cultural, social and economic issues are emphasized.

**3314 The Civil War and Reconstruction (3-3-0)**

*Prerequisite: HIST 1305 and 3 additional hours in history, junior standing, or consent of instructor.*

The course examines the background nature of this conflict with emphasis on its escalation toward total war, the final defeat for the South and the reconstruction period that followed.

**3315 World History to 1500 AD (3-3-0)**

*Prerequisite: Junior standing or consent of instructor.*

This course is an overview of the development of the world's major civilizations from the earliest times through the European renaissance. The major focus will be on developments in the West, but societies in China, India, southwest Asia, and Africa will be examined too.

**3316 World History Since 1500 AD (3-3-0)**

*Prerequisite: Junior standing or consent of instructor.*

A continuation of HIST 3315. This course examines the development of societies in and beyond Europe since the Protestant Reformation. Special emphasis is given to the emergence of modern or developed forms of social, economic, and political organization and their spread across the globe after the mid-nineteenth century.

**3317 Middle Eastern History (3-3-0)**

*Prerequisite: 6 hours in history, junior standing, or consent of instructor.*

This course will trace the history of the Middle East from the time of the Prophet Mohammed, through the rise of Islam, the period of the Caliphates, the Crusades, the Ottoman Empire, the era of European imperialism, the birth of Israel, and modern Arab nationalism.

**3321 The African American in Sports (3-3-0)**

*Prerequisite: 6 hours in history, junior standing, or consent of instructor.*

An historical analysis of the relationship between the African American struggle for equality and participation in sports.

- 3322 Mexican-American History (3-3-0)**  
*Prerequisite: 6 hours in history, junior standing, or consent of instructor.*  
 The history of Mexican-Americans in the US from the 16<sup>th</sup> century to the present with special emphasis on the American Southwest. Students will learn some of the major events, personalities and issues that have shaped the society, culture, history and identity of the Mexican-American people.
- 3323 African-American History (3-3-0)**  
*Prerequisite: 6 hours in history, junior standing, or consent of instructor.*  
 A history of the African-American experience in North America from 1610 to the present. The course will cover the contributions of African-Americans to American society and will cover issues including slavery and the slave trade, abolitionism, war, citizenship, political participation, urbanization, culture, and civil rights.
- 3330 The Colonization of America: Britain's Atlantic Empire (3-3-0)**  
*Prerequisite: HIST 1305 and 3 additional hours of history, junior standing, or consent of instructor.*  
 Focus on the establishment and development of British American societies in the 17th and 18th centuries. Explores the rationale for settlement of the various British colonies and their divergent economic and social paths. Also covers the transplantation of political, social and religious institutions as well as analyzing migration patterns to British America.
- 3331 American History through Literature (3-3-0)**  
*Prerequisite: 6 hours in history, junior standing, or consent of instructor.*  
 This course examines major themes in US history through an examination of the works of important authors in historical context. Themes and authors addressed in the course vary by semester. This course may not be repeated for credit.
- 3390 History Research and Writing Seminar**  
*Prerequisite: 6 hours in history, junior standing, or consent of instructor.*  
 This course is designed for history majors and minors to provide training in methods of historical research, historiography, and exposition. It will include library and archival research with emphasis on the use of primary and secondary sources and will culminate in a history research project or projects.
- 3399 Directed Study in History (3-3-0)**  
*Prerequisite: Junior standing, formal approval of department chair and dean, cumulative GPA of 3.0 and GPA of 3.3 in the specific area of directed study.*  
 Selected topics in history. Intensive individual study under the guidance of a member of the history faculty.
- 4301 The United States since 1945 (3-3-0)**  
*Prerequisite: HIST 1306 and 3 additional hours in history, junior standing, or consent of instructor.*  
 Historical development of the United States since World War II. The rise and decline of the Cold War, the Civil Rights movement, diplomatic, political and social issues.

- 4303 US Women's History (3-3-0)**  
*Prerequisite: 3 hours in US history and 3 additional hours in history, junior standing, or consent of instructor.*  
 A study of the social, economic and political impact of women on United States history from its founding to the present.
- 4304 History of the Old South to 1865 (3-3-0)**  
*Prerequisite: HIST 1305 and 3 additional hours in history, junior standing, or consent of instructor.*  
 A history of the southern states from the Colonial era through the Civil War. Special emphasis is given to slavery, social and political theory.
- 4305 History of the New South from 1865 (3-3-0)**  
*Prerequisite: HIST 1306 and 3 additional hours in history, junior standing, or consent of instructor.*  
 A history of the southern states from the beginning of Reconstruction to the present with emphasis on race, gender and class as the South copes with modernization. Special attention is given to industrialization, urbanization and the Civil Rights Movement.
- 4320 Slavery in the Americas (3-3-0)**  
*Prerequisite: HIST 1305 and 3 additional hours of history, junior standing, or consent of instructor.*  
 Analysis of African American slavery from the South American silver mines to the tobacco estates of the Chesapeake. Covers a variety of historical approaches including economic, anthropological and oral histories. Emphasis on how the slave system was organized and how slave communities evolved.
- 4390 Special Topics in History (3-3-0)**  
*Prerequisite: 6 hours in history, junior standing, or consent of instructor.*  
 Selected topics in US, world, social and intellectual history. Course may be repeated for credit when topics vary.

## Graduate Courses

- 6301 Seminar in Modern European History (3-3-0)**  
*Prerequisite: Graduate standing.*  
 Examines European history from the turn of the 20th century to the end of the cold war. Special emphasis will be placed on the two world wars, as well as the interwar period. Focal topics for readings and discussion will include: diplomacy, economics, social issues, totalitarianism, and propaganda.
- 6302 Seminar in US History (3-3-0)**  
*Prerequisite: Graduate standing.*  
 Examines major topics in US history with emphasis on social, cultural and political issues. This is a topics course and the material covered will vary.
- 6303 Seminar in Texas History (3-3-0)**  
*Prerequisite: Graduate standing.*  
 Examines Texas history from its Spanish origins to US statehood. The emphasis will be on social, cultural, political, and economic issues.

## HUM (Humanities)

### 2305 Computer Applications in Humanities and Social Sciences (3-3-0)

*Prerequisite: ENG 1302.*

An overview of computer hardware and software applications for students in programs in the humanities, English, social sciences, and teacher certification. The course emphasizes hands-on experience in word processing, desktop publishing, educational software and multimedia.

### 3301 Foundations of Western Culture I (3-3-0)

*Prerequisite: 3 hours of literature.*

A philosophical study of major literary, historical, artistic and scientific events and personalities that have contributed to the ideas of the present. Readings from Greek, Roman and medieval cultures.

### 3302 Foundations of Western Culture II (3-3-0)

*Prerequisite: 3 hours of literature.*

A philosophical study of major literary, historical, artistic and scientific events and personalities that have contributed to the ideas of the present. Readings from the Renaissance to the present.

### 3304 American Ethnic Heritage (3-3-0)

*(Cross-listed as ENG 3324. Credit may not be earned for both.)*

*Prerequisite: 3 hours of literature.*

An interdisciplinary study of ethnic contributions to the art, music, drama and literature of the United States.

### 3305 Art and Religion - Origins (3-3-0)

*(Cross-listed as ART 3306. Credit may not be earned for both.)*

*Prerequisite: 3 hours of art history or art appreciation.*

Survey of the religious arts and architecture of the ancient world and their underlying beliefs and practices. Examines the early art and architecture of the world religions. All works are presented in historical sequence, concluding with the period known in the West as the Renaissance.

### 3307 Art and Religion - Developments (3-3-0)

*(Cross-listed as ART 3307. Credit may not be earned for both.)*

*Prerequisite: 3 hours of art history or art appreciation.*

Survey of the religious arts and architecture of the developing modern world from the 17th century to the present. The main focus is on religious art in Buddhism, Christianity and Islam, but the course also examines the impact of these religions on modern secular and religious movements.

### 3310 Cultural Criticism (3-3-0)

*(Cross-listed as ENG 3340. Credit may not be earned for both.)*

*Prerequisite: 3 hours of literature and 3 hours of philosophy.*

A survey of different ways of analyzing human culture. Students examine major schools of criticism and interpretation of society and its creative activity. This course is the gateway course for the Humanities program. May be repeated once for credit, with permission of the chair of the Arts and Humanities Department.

### 3312 Major Developments in the History of Art (3-3-0)

*(Cross-listed as ART 3301. Credit may not be earned for both.)*

*Prerequisite: 3 hours of art history or art appreciation.*

A study of important historical events in the development of the theory and practice of the visual arts. May be repeated for credit when topic changes.

### 3313 Major Developments in the History of Music (3-3-0)

*(Cross-listed as MUS 3301. Credit may not be earned for both.)*

*Prerequisite: 3 hours of music appreciation.*

### 3314 Studies in Autobiography (3-3-0)

*(Cross-listed as ENG 3314. Credit may not be earned for both.)*

*Prerequisite: 3 hours of literature.*

A study of autobiographical writing; the course may analyze its forms or techniques, trace a topic or type of autobiographical literature or investigate critical problems posed by autobiography.

### 3315 Theater: Greek to Elizabethan (3-3-0)

*(Cross-listed as DRA 3303. Credit may not be earned for both.)*

*Prerequisite: ENG 1301.*

World theater from its beginnings to the 18th century, including theater architecture, staging and costuming practices, plays and playwrights, and social and political forces affecting the theater.

### 3316 Theater: Elizabethan to Modern (3-3-0)

*(Cross-listed as DRA 3304. Credit may not be earned for both.)*

*Prerequisite: ENG 1301.*

World theater from the 18th century to the present.

### 3317 Jazz Styles I (3-3-0)

*(Cross-listed as MUS 3303. Credit may not be earned for both.)*

*Prerequisite: MUS 2301, MUS 2302 or approval of instructor.*

Introduction to various styles of jazz from its beginnings at the end of the 19th century to the 1940s. Beginning with the early years of "traditional" jazz in New Orleans and progressing chronologically, students will be introduced to major figures and styles of jazz through videos, recordings, readings and concerts. Includes study of the outside forces that helped shape the music and the musicians.

### 3318 Jazz Styles II (3-3-0)

*(Cross-listed at MUS 3304. Credit may not be earned for both.)*

*Prerequisite: MUS 2301, MUS 2302 or approval of instructor.*

Introduction to various styles of jazz from the 1940s to the present. Beginning with the evolution of jazz into a chamber art form during the bebop movement of the 1940s and progressing chronologically, students will be introduced to major figures and styles of jazz through videos, recordings, readings and concerts. Includes study of the outside forces that helped shape the music and the musicians.

### 3320 Foreign Language Literature in Translation (3-3-0)

*Prerequisite: 3 hours of literature.*

A survey of selected classic and contemporary texts originally written in languages other than English. May be repeated once for credit with permission of the department chair.

### 3321 Hispanic Culture and Civilization (3-3-0)

*Prerequisite: ENG 1302.*

A survey of the cultural traditions of Spanish-speaking popula-

tions, including those of Spain, Latin America and the United States. No knowledge of Spanish is required or expected.

**3323 Technology and Literature (3-3-0)**

*(Cross-listed as ENG 3323. Credit may not be earned for both.)*  
*Prerequisite: 3 hours of literature.*

The course may study influences of technology or science on literature, analyze how literature represents technology, or interpret literature as a reflection of social ambivalence toward technology.

**3324 History of Modern Art (3-3-0)**

*(Cross-listed as ART 3302. Credit may not be earned for both.)*  
*Prerequisite: ENG 1301 and 3 hours of art history or art appreciation.*

A survey of world art from the Revolutionary Period (late 18th century) to contemporary times, including such artistic movements as Neoclassicism, Romanticism, Impressionism, Cubism, Surrealism and Pop Art.

**3325 Arts Administration (3-3-0)**

*Prerequisite: Junior standing, completion of the fine arts common core requirement, or departmental approval.*

Examination of the principles of arts administration stressing general concepts relating to marketing, fundraising, audience development, financial management, and the overall environment of arts management in such profit and non-profit structures as theaters, art galleries, music organizations, dance companies, and museums.

**3326 Playwriting (3-3-0)**

*(Cross-listed as DRA 3308. Credit may not be earned for both.)*  
*Prerequisite: Junior standing or permission of the instructor.*

The process of playwriting. Topics include dramatic structure, character and dialogue development and conflict resolution. Culminates with an original script.

**3330 Second Language Acquisition (3-3-0)**

*Prerequisite: PSY 1303.*

An investigation of current theories and research techniques in the study of second language acquisition and bilingualism with special emphasis on the implications for bilingual and foreign language education.

**4301 Jazz Heritage**

*Prerequisite: Three hours of music appreciation or music history, departmental approval, and pre-paid non-refundable deposit for trip.*

Study of jazz styles associated with a particular city including a week-long field trip to that city. Participation in the field trip is required. May be repeated once when the city is different, with departmental approval. Extra fees will be charged to pay for the trip.

**4313 Psychology through Literature (3-3-0)**

*(Cross-listed as ENG 4313. Credit may not be earned for both.)*  
*Prerequisite: 3 hours of literature.*

The course adopts psychological theory as a methodology for studying literature and its cultural contexts.

**4350 Senior Seminar in the Humanities (3-3-0)**

*(Cross-listed as ENG 4330. Credit may not be earned for both.)*

*Prerequisite: Senior standing and 18 upper-level hours in the humanities, including HUM 3310/ ENG 3340.*

A review of key issues in interpretation and understanding from philosophy, literature, history and the arts. It aims to provide students with means for synthesizing their studies in the liberal arts. This course is the capstone for the Humanities program.

**4380 Field Experience in Humanities**

*Prerequisite: 60 hours toward degree and approval of department chair.*

Placement of students in jobs involving areas in the humanities within the private and public sectors. Work may be paid or unpaid. Written reports, conferences with the instructor and other academic work are required. May be repeated once for credit.

**4390 Selected Topics in the Arts and/or Humanities (3-3-0)**

*Prerequisite: ENG 1302 and junior standing.*

Selected topics in the arts and/or humanities. May be repeated once when topic varies.

**4399 Directed Study in Humanities**

*Prerequisite: Junior standing, formal approval of department chair and dean, cumulative GPA of 3.0 and GPA of 3.3 in the specific area of directed study.*

Selected topics in the humanities; intensive individual study under the guidance of a member of the faculty.

## MAT (Master of Arts in Teaching)

**5301 Understanding the Middle School and High School Learner (3-3-0)**

*Prerequisite: ETC 3301, completion of 75% of content area hours, and SOSE 3306 or post baccalaureate standing.*

Explores the relationship of psychological theories to learning and education in the middle school and high school environment. Emphasis on applying theories to action-based research and interventions with diverse students and families in urban settings.

**5302 Curriculum, Instruction, and Evaluation in Secondary Schools (3-3-0)**

*Prerequisite: MAT 5301 or SED 3301, MAT 5305 or SED 3305.*

Explores the dynamic interactions among assessment, instruction, and curricular design for secondary students. Emphasizes professional decision-making based on theory and research.

**5305 Professional Roles and Responsibilities for Secondary Teachers (3-3-0)**

*Prerequisite: ETC 3301, completion of 75% of content hours, and SOSE 3306 or post baccalaureate standing.*

Explores and evaluates a variety of theories and research pertaining to pedagogical issues including educational philosophy, the role of reflection, effective lesson design, lesson presentation, and other professional teaching roles and responsibilities.

**5312 Managing the Secondary Environment for Student Success (3-3-0)**

*Prerequisite: ETC 3301, completion of 75% of content area hours, and SOSE 3306 or post baccalaureate standing.*

Emphasizes enhancing achievement for all secondary age learners. Includes planning outcome-oriented learning experiences, using effective communication techniques, choosing a variety of instructional materials and resources, using formal and informal assessment, and managing environment to maintain a positive classroom climate.

**5320 Introduction to Educational Statistics (3-3-0)**

*Prerequisite: Post-baccalaureate or graduate standing or department approval.*

An introduction to quantitative analysis for teachers. Concepts include frequency distributions, graphs, probability, measures of central tendency, standard deviation, z- and t-tests, bivariate correlation (parametric and non-parametric), regression, and chi-square. Instruction will include use of statistics software packages.

**5321 Literacy in Middle and Secondary Schools (3-3-0)**

*Prerequisite: READ 3309.*

Explores instructional methods for speaking, listening, reading, writing, viewing, and representing ideas through concept/issue-based thematic study. Attention is given to the integration of technology. Emphasis placed on the development, implementation, and evaluation of strategies and resources for struggling adolescent readers.

**6301 Science Methods for the Elementary/Middle School Teacher (3-3-0)**

*Prerequisite: Post-baccalaureate admission. EED 3303, EED 3313, READ 3301, technology proficiency, and concurrent enrollment in MAT 6302, MAT 6303.*

Examines and emphasizes learner centered science experiences for the EC-8 students. Uses research-based approaches that support effective teaching and high achievement in science content and pedagogy. Participants evaluate research studies and recent trends and issues to aid in the development of culturally responsive and outcome-oriented science learning experiences for diverse learners. (Content varies based upon EC-4 or 4-8 licensure level sought).

**6302 Mathematics Methods for Elementary/Middle School Teachers (3-3-0)**

*Prerequisite: Post-baccalaureate admission, EED 3303, EED 3313, READ 3301, technology proficiency, and concurrent enrollment in MAT 6301, MAT 6303.*

Examines and emphasizes learner centered mathematics for the EC-8 students. Focuses on research-based approaches to support the effective teaching of mathematics. Participants evaluate research studies and recent trends and issues to aid in the development of culturally responsive and outcome-based mathematics learning experiences for diverse learners. (Content varies based upon EC-4 or 4-8 licensure level sought).

**6303 Diagnostic Testing of Reading (3-3-0)**

*Prerequisite: Post-baccalaureate admission, EED 3303, EED 3313, READ 3301, technology proficiency, and concurrent enrollment in MAT 6301, MAT 6302.*

Studies research-based assessment and instruction to support the literacy learning among students with a wide range of strengths and needs. Participants are exposed to a variety of instructional materials, resources, and assessments to main-

tain a positive environment for diagnostic testing and enhanced literacy learning. (Content varies based upon EC-4 or 4-8 licensure level sought).

**6304 Language Arts/Reading Methods in Spanish (3-1-2)**

*Prerequisite: Post-baccalaureate admission, BED 3303, BED 3313, READ 3301, technology proficiency, and concurrent enrollment in MAT 6305, MAT 6306.*

Presents strategies for providing developmentally appropriate emergent literacy and holistic instruction. Includes the selection of appropriate materials and authentic assessment. Instruction conducted in Spanish. (Content varies based upon EC-4 or 4-8 licensure level sought).

**6305 Integrated Curriculum - Bilingual (3-3-0)**

*Prerequisite: Post-baccalaureate admission, BED 3303, BED 3313, READ 3301, technology proficiency, and concurrent enrollment in MAT 6304, MAT 6306.*

Focuses on bilingual methods, approaches, and materials to teach content in language arts, mathematics, social studies, and science in a bicultural bilingual classroom. Emphasizes a multidisciplinary approach to instruction that incorporates various learning styles, and the development of classrooms conducive to learning and reflective of cultural diversity. Instruction conducted in Spanish. (Content varies based upon EC-4 or 4-8 licensure level sought).

**6306 Reading Diagnosis in Bilingual Classroom (3-3-0)**

*Prerequisite: Post-baccalaureate admission, BED 3303, BED 3313, READ 3301, technology proficiency, and concurrent enrollment in MAT 6304, MAT 6305.*

Supports a multidisciplinary approach to diagnosis and remediation of reading problems for bilingual/bicultural students, with special attention to cognitive, sociolinguistic, and emotional factors that may impede learning. Students conduct hands-on assessment and develop appropriate instructional strategies based upon a variety of paradigms. (Content varies based upon EC-4 or 4-8 licensure level sought).

**6310 Reading in a Multicultural Classroom (3-3-0)**

*Prerequisite: Graduate standing, technology proficiency, and concurrent enrollment in MAT 6311, MAT 6312.*

Enhances the development of a knowledge base for teaching and evaluating reading/language arts program for culturally and linguistically diverse classrooms. Examines current of second language development and studies the basic principles and practices of reading/language arts instruction: beliefs, factors influencing learning, instructional strategies, organizational practices, assessments, and materials.

**6311 Advanced Study of Developmental Psychology and Diversity (3-3-0)**

*Prerequisite: Graduate standing, technology proficiency, and concurrent enrollment in MAT 6310 and 6312.*

Examines the developmental changes from birth to adolescence. Emphasizes psychological and sociological perspectives and their application to learning and teaching in a culturally and linguistically diverse society.

**6312 Foundations of Curriculum and Instruction for Culturally Diverse Settings (3-3-0)**

*Prerequisite: Graduate standing, technology proficiency, and concurrent enrollment in MAT 6310 and 6311.*

Analyzes the multicultural forces that influence curriculum and instruction: philosophy, psychology, pedagogy/learning, sociology, knowledge, and evaluation. Contrasts major approaches to curriculum and instruction. Students apply theory to the development and supervision of a curricular and instructional plan for situations relevant to culturally diverse settings, including at risk youth and students, with limited English proficiency.

**6315 Introduction to Educational Research (3-3-0)**

*Prerequisite: Graduate standing and technology proficiency.*

Examines the emerging practice of “classroom teachers as researchers” including both theory and practice. Provides students with an introduction to variety of research designs and strategies, both traditional and non-traditional. Students examine and evaluate empirical studies that use different designs and strategies.

**6316 Advanced Methods for the Culturally Diverse Classroom (3-3-0)**

*Prerequisite: 9 hours from courses in Language Arts, Mathematics, Social Studies, or Natural Science strands.*

Course sections are designed to offer students the opportunity to develop skills in instructional methodology specifically related to and derived from the characteristics of the discipline taught: (1) science, (2) mathematics, (3) social studies, or (4) language arts. Special emphasis is placed upon teaching in culturally diverse classrooms.

**6317 Classroom-Based Research (3-1-2)**

*Prerequisite: A grade of B or better in a 4000-level math course or an undergraduate statistics course; or a score of 680 on the GRE-Quantitative exam; or credit for MAT 5320*

Application of data gathering and analysis skills in classroom research studies. Participants conduct directed research in classroom practices in elementary, bilingual, or secondary classrooms. Students examine issues such as validity, reliability, and generalizability. Students are guided through their own research projects.

**6318 Technology Application for Curriculum Development and Instruction (3-1-2)**

*Prerequisite: Graduate standing and technology proficiency.*

Advances the effectiveness of teachers by expanding and updating their understanding of the role of technology and pedagogy. Focuses on technology from each of three perspectives: as a tool, as a medium, and as a setting for learning. Students construct professional and instructional web pages and continue to use newsgroup and e-mail extensively. Students work with web-based instructional tools that support learning in communities. Provides a conceptual framework for understanding the design of multimedia courseware as well as the opportunity for hand-on experience with a variety of software packages.

**6319 Teaching the Language Minority Child (3-3-0)**

*Prerequisite: Graduate standing and technology proficiency.*

Studies how social, cultural, and linguistic factors affect the

reading and writing of students and how school curriculum and instruction can be designed to support students from differing sociocultural backgrounds. Special attention is given to the role that socioeconomic status, dialect, gender, second language learning, and ethnicity play in literacy learning and teaching.

**6320 Action Research on Reading Across the Curriculum for Grades 8-12 (3-3-0)**

*Prerequisite: Completion of secondary Block I, READ 3309, and concurrent enrollment in MAT 6308 and MAT 6309.*

Explores instructional opportunities for speaking and listening, reading and writing multiple texts/genres, and viewing and representing ideas through concept/issue-based thematic study with attention to the integration of technology. Special attention is given to conducting and/or reporting action research in the use of strategies and resources for struggling adolescent readers.

**6321 Teaching Children's Literature in Spanish (3-3-0)**

*Prerequisite: Graduate standing and technology proficiency.*

Examines the selection and uses of Spanish children's literature in bilingual classrooms. Emphasizes ways to integrate literature into bilingual/bicultural curriculum and instruction.

**6322 Readings in Critical Pedagogy (3-3-0)**

*Prerequisite: Graduate standing, MAT 6315.*

Utilizing dialectical methodology, this course explores the nature of power relations relative to the perspectives of race, gender, ethnicity, sexual orientation, physical disability, and socioeconomic status in the organization, curriculum, and operations of public schools in urban settings. Examines the reflection/action continuum as it pertains to the language of critique and the language of possibility in its application to classroom practices.

**6323 Advanced Social Studies Methods for Elementary Teachers (3-3-0)**

*Prerequisite: Post-baccalaureate admission, completion of elementary Block I, a score of 75 or better on department Block examination, and concurrent enrollment in MAT 6301 and MAT 6303.*

Social studies curricula and methodology in urban elementary classrooms. Emphasizes learner-centered instruction for the elementary classroom and focuses on research-based approaches for effective teaching. Students evaluate research studies and recent trends and issues to aid in developing culturally responsive, outcome-based learning experiences for diverse learners. Special emphasis on instructional methodology for US and Texas history, US government, geography, economics, citizenship and culture.

**6380 Practicum for Urban Teachers (3-1-2)**

*Prerequisite: MAT 6310, MAT 6311, MAT 6312.*

Offers teachers an opportunity to participate, over a two-semester period, in university-sponsored work-shops/seminars. Workshops are designed to support urban teachers in (a) applying teacher education knowledge to the full responsibility of day-to-day teaching (b) reflecting on challenges and events occurring in their classrooms and schools, and (c) engaging in cooperative solving of inevitable problems that arise during the teaching experience.

**6381 Internship in Urban Classrooms (3-1-2)**

*Prerequisite:* Completion of 9 hours from MAT 6301, 6302, 6303; 6304, 6305, 6306; or 6307, 6308, 6309.

Offers students a supervised internship in an urban educational setting over a two-semester period. Examines the diversity of community resources for elementary, bilingual, or secondary education. Students systematically develop strategies for integrating local and regional resources into the teaching and learning process. (Content varies based upon EC-4 or 4-8 licensure level sought).

**6390 Directed Study in Urban Teaching (3-1-2)**

*Prerequisite:* MAT 6316, MAT 6317, and MAT 6318.

Offers the opportunity for specialized study not normally or not often available as part of the regular offerings.

## MATH (Mathematics)

**0300 Beginning Algebra (3-3-0)**

*Prerequisite:* Students are placed in MATH 0300 based on results of a placement test taken at UH-Downtown.

This course is intended to build and reinforce the essential geometry, arithmetic and algebra skills needed for Intermediate Algebra (MATH 1300). Topics include real numbers and their properties, order of operations and simplifying real-valued expressions, simplifying algebraic expressions, factoring the greatest common factor from a polynomial, solving linear equations and inequalities, an introduction to the Cartesian coordinate system and stated problems. This course may not be used to satisfy degree requirements.

**1101 TSI Tutorial (1-3-0)**

Tutorial instruction designed to prepare students to complete their Texas Success Initiative math requirements. This course may not be used to satisfy degree requirements.

**1300 Intermediate Algebra (3-3-0)**

*Prerequisite:* A passing grade in MATH 0300, placement by exam taken at UH-Downtown, or a passing score on the math portion of THEA.

A survey of pre-college algebra intended to build and reinforce the essential algebra skills needed for College Algebra (MATH 1301) or College Mathematics for Liberal Arts (MATH 1310). Topics include operations with algebraic expressions, factoring, the Cartesian coordinate system, systems of 1st degree equations in two variables solved by graphical and algebraic methods, slope and distance formulas, integer and rational exponents, radicals, an introduction to quadratic equations and stated problems. This course may not be used to satisfy degree requirements.

**1301 College Algebra (3-3-0)**

*Prerequisite:* A grade of C or better in MATH 1300 or placement by exam taken at UH-Downtown, or a score of 270 on the math section of THEA.

College-level topics in algebra including variation, systems of equations and inequalities, nonlinear inequalities, functions and their graphs, lines, quadratic equations and functions, complex numbers, polynomials, exponential and logarithmic functions, the algebra of functions, an introduction to plane analytic geometry and applications related to these topics. (MATH 1314)

**1302 Plane Trigonometry (3-3-0)**

*Prerequisite:* A grade of C or better in MATH 1301 or placement by exam taken at UH-Downtown.

Trigonometric functions with emphasis on fundamental identities, radian measure, graphing, inverse trigonometric functions, solving triangles and trigonometric equations, vectors and applications related to these topics. (MATH 1316)

**1305 Finite Mathematics with Applications (3-3-0)**

*Prerequisite:* A grade of C or better in MATH 1301 or placement by exam taken at UH-Downtown.

Graphs and functions, vectors, matrices, linear programming using the Simplex method, mathematics of finance, and an introduction to probability with applications to business, economics and the social sciences. (MATH 1324)

**1306 Fundamentals of Calculus with Applications (3-3-0)**

*Prerequisite:* A grade of C or better in MATH 1301 or placement by exam taken at UH-Downtown.

Functions, limits, continuity, differentiation, integration and partial derivatives. Applications of all techniques to business, economics and the social sciences are stressed. (MATH 1325)

**1310 College Mathematics for Liberal Arts (3-3-0)**

*Prerequisite:* A grade of C or better in MATH 1300, placement by exam taken at UH-Downtown or a passing score on the math portion of THEA.

An introduction to contemporary mathematical ideas and problem-solving techniques. Designed for students requiring one college-level mathematics course. This course cannot be applied toward any degree in the Department of Computer and Mathematical Sciences. (MATH 1332)

**1404 Precalculus Mathematics (4-4-0)**

*Prerequisite:* A grade of C or better in MATH 1302 or placement by exam taken at UH-Downtown.

A thorough treatment of the elementary functions and their graphs including polynomials, rational functions, exponential functions and logarithms. Applications of the elementary functions to practical problems such as modeling are included. Topics from plane analytic geometry needed in calculus are also covered including polar coordinates, conic sections and parametric curves. Concludes with an introduction to sequences and series. (MATH 2412)

**1505 Precalculus with Trigonometry (5-5-0)**

*Prerequisite:* Department approval and a grade of B or better in MATH 1301.

A thorough treatment of the elementary functions and their graphs including polynomials, rational functions, exponential functions and logarithms, and trigonometric functions. Applications of the elementary functions to practical problems. Topics from trigonometry include fundamental identities, radian measure, graphing, inverse trigonometric functions and solving triangles and trigonometric equations. Topics from plane analytic geometry needed in calculus are also covered including vectors, polar coordinates, conic sections and parametric curves. Concludes with an introduction to sequences and series.

- 2305 Discrete Mathematics (3-3-0)**  
*Prerequisite: A grade of C or better in MATH 1404 or MATH 1305 or MATH 1505 and credit or enrollment in CS 1408 or CS 1410.*  
 Topics include sets, relations, and functions, logic, methods of proofs, induction and recursion, counting principles, combinatorics and graphs with emphasis on application. (MATH 2305)
- 2307 Linear Algebra (3-3-0)**  
*Prerequisite: A grade of C or better in MATH 2401 or MATH 2305.*  
 An introduction to some of the basic concepts of linear algebra including vector spaces, linear transformations, matrices, systems of linear equations, determinants, eigenvalues, eigenvectors and applications. (MATH 2318)
- 2401 Calculus I (4-4-0)**  
*Prerequisite: A grade of C or better in MATH 1404 or 1505 or placement by exam, taken at UH-Downtown.*  
 Functions, limits, the derivatives of algebraic and trigonometric functions, the derivatives of parametric equations, curve sketching, applications of the derivative and an introduction to the definite and indefinite integrals of algebraic and trigonometric functions. (MATH 2413)
- 2402 Calculus II (4-4-0)**  
*Prerequisite: A grade of C or better in MATH 2401.*  
 Topics include differentiation and integration of transcendental functions, techniques of integration, improper integrals and applications of the integral, sequences and infinite series. (MATH 2414)
- 2403 Calculus III (4-4-0)**  
*Prerequisite: A grade of C or better in MATH 2402.*  
 Solid analytic geometry, partial derivatives, multiple integrals and line integrals. Applications of the calculus of functions of several variables are also considered. (MATH 2415)
- 3301 Differential Equations (3-3-0)**  
*Prerequisite: A grade of C or better in MATH 2401 and MATH 2402. Credit or enrollment in MATH 2307 is recommended.*  
 Ordinary differential equations, with emphasis on methods of solution of first order equations, homogeneous and non-homogeneous linear equations and systems of linear equations. Power series solutions of some linear equations and elementary applications are also covered.
- 3303 Geometry for Teachers (3-3-0)**  
*Prerequisite: A grade of C or better in MATH 1301 and junior standing.*  
 Topics selected from: properties of angles, lines, triangles, polygons, polyhedra, circles, similarity and congruency of triangles, area perimeter, surface area, volume geometric constructions, transformations, tessellation, investigating patterns in geometry for problem solving, the Pythagorean Theorem, the coordinate plane and an introduction to geometric proofs. This course is primarily designed for students in the Teacher Preparation program.
- 3306 Introduction to Modern Algebra (3-3-0)**  
*Prerequisite: A grade of C or better in MATH 2305 and MATH 2307.*  
 Topics include rings and boolean algebra, semi-groups and groups, lattices, field theory, graph theory and their applications. Applications will include: coding, networks, minimal span trees and linear machines.
- 3307 Introduction to Real Analysis (3-3-0)**  
*Prerequisite: A grade of C or better in MATH 2307 and MATH 2402.*  
 A rigorous treatment of the elements of intermediate real analysis including limits, sequences and series of real numbers, properties of the real number system, continuity and differentiability of functions and basic theorems of calculus.
- 3308 Numerical Methods (3-3-0)**  
*(Cross-listed as CS 3308. Credit may not be earned for both.) Prerequisite: Grade of C or better in CS 1408 or CS 1410, MATH 2302, MATH 2407.*  
 Develop and implement algorithms used in solving a variety of problems from science and engineering, including numerical solutions of linear systems of equations and nonlinear equations, curve fitting, approximation, numerical differentiation and integration, and numerical solutions of ordinary differential equations. Computer techniques are used in obtaining and analyzing numerical solutions.
- 3311 Geometry (3-3-0)**  
*Prerequisite: A grade of C or better in MATH 2307.*  
 Euclidean, affine and projective geometries are introduced and their modern applications are discussed. A brief historical development of the various geometries is given and selected topics from hyperbolic geometry and elliptic geometry are introduced. Computer-based explorations of geometric concepts and constructions are emphasized.
- 3312 Set Theory (3-3-0)**  
*Prerequisite: MATH 2305.*  
 Topics include sets and set operations, relations and their properties, partition of sets and equivalence relations, axioms of set theory, partially and totally ordered sets and their properties, mappings, cardinals and ordinals.
- 3313 Mathematics Topics for Secondary Teachers (3-3-0)**  
*Prerequisite: MATH 2401 or MATH 1306, enrollment in secondary teacher certification and department approval.*  
 Topics chosen from mathematical connections, historical perspectives, common conceptions and misconceptions, applications and technology relative to teaching and learning high school mathematics topics in algebra, discrete mathematics, geometry and calculus; problem solving theory and techniques over various topics including classic historical problems in mathematics. Emphasis on conceptual understanding and developing the ability to provide both informal explanations and formal proofs. The NCTM's *Principles and Standards for School Mathematics* will be referenced.
- 3321 Math Concepts I (3-3-0)**  
*Prerequisite: A grade of C or better MATH 1301 or MATH 1310. Restricted to students in Urban Education or permission*

of CMS department chair.

Topics are chosen from logic, set theory, mathematical systems, number theory, problem solving, estimation, and historical number systems.

**3322 Math Concepts II (3-3-0)**

*Prerequisite: A grade of C or better MATH 1301 or MATH 1310. Restricted to students in Urban Education or permission of CMS department chair*

Topics are chosen from measurement, estimation, problem solving, counting and probability, expected value, simulation, introduction to geometry. The use of technology is also included.

**3399 Directed Study in Mathematics**

*Prerequisite: Formal approval by department chair and dean.*

Selected topics in mathematics; intensive individual study under the guidance of a member of the Computer and Mathematical Sciences faculty.

**4294 Senior Seminar (2-2-0)**

*(Cross-listed as CS 4294, STAT 4294. Credit may not be earned for more than one.)*

*Prerequisite: COMM 1304, ENG 3302, senior standing and department approval.*

An intense, structured seminar. Students are exposed to the world community as it relates to their major (involving a written and oral report on cultural issues as well as discussion of these topics); ethics is discussed as it relates to the subject. In addition, students prepare a written proposal for a senior project. Attendance at departmental colloquia is also required.

**4301 Advanced Numerical Methods for Science and Engineering (3-3-0)**

*(Cross-listed as CS 4301. Credit may not be earned for both.)*

*Prerequisite: MATH 3308, MATH 2403 and MATH 3301.*

Advanced topics in numerical mathematics, including the numerical solution of ordinary and partial differential equations and advanced methods in numerical linear algebra. Programming projects are stressed that use the computer to solve physical and engineering problems. This course may be used to fulfill the writing application course requirement with additional prerequisites of CS 4294, ENG 3302 and COMM 1304.

**4302 Advanced Multivariable Calculus (3-3-0)**

*Prerequisite: MATH 2307 and MATH 2403.*

Differentiability of real and vector valued functions; coordinate transformation in multiple integrals (Jacobian); line and surface integrals of real and vector-valued functions; Implicit Function Theorem; Green's, Stoke's and Divergence Theorems.

**4304 Methods of Applied Mathematics (3-3-0)**

*Prerequisite: A grade of C or better in MATH 2403 and MATH 3301.*

Major topics include: Fourier series, Laplace transforms and partial differential equations, with emphasis on physical problems.

**4305 Complex Variables with Applications (3-3-0)**

*Prerequisite: A grade of C or better in MATH 2403 and MATH 3301.*

Analytic functions, power series, the theory of residues, conformal mapping and applications to physical problems.

**4312 History of Applied Mathematics (3-3-0)**

*Prerequisite: MATH 2401 or MATH 1306 and department approval.*

The course traces the development of mathematics and its applications from the Greek mathematicians through the modern age including the development of computer techniques in applied mathematics. This course may be used to fulfill the writing application course requirement with additional prerequisites CS 4294, ENG 3302 and COMM 1304.

**4315 Mathematical Modeling (3-3-0)**

*Prerequisite: A grade of C or better in MATH 3301.*

The goal of this course is to impart to students the excitement and usefulness of mathematics and computer science as a fundamental tools in solving real-world problems. The course focuses on functions as models for phenomena, on the development of a repertoire of techniques to be used in modeling, and on the interpretation and validation of the mathematical model. The course will provide students in mathematics, statistics, computer science, natural science or engineering the opportunity for undergraduate research. A term project using software will be required

**4333 Theory and Application of Neural Nets (3-3-0)**

*(Cross-listed as CS 4333. Credit may not be earned for both.)*

*Prerequisite: A grade of C or better in MATH 2307, MATH 2403, and CS 2310.*

Introduction to basic concepts of neural networks used in supervised and unsupervised learning. Several learning rules and algorithms will be presented along with applications.

**4334 Fuzzy Logic: Theory and Applications (3-3-0)**

*(Cross-listed as CS 4334. Credit may not be earned for both.)*

*Prerequisite: A grade of C or better in CS 2310 and MATH 2307.*

This course will cover important ideas in the theory and applications of fuzzy logic as operations on fuzzy sets, alpha cuts, possibility measure, ruled based computations, associative memories and other topics as time permits.

**4336 Neuro-Fuzzy Systems (3-3-0)**

*(Cross-listed as CS 4336. Credit may not be earned for both.)*

*Prerequisite: MATH 2403, MATH 2307, and CS 2310.*

*CS/MATH 4333 or CS/MATH 4334 recommended.*

Advanced topics selected from fuzzy logic, regression and optimization, adaptive networks, neural nets, and neuro-fuzzy systems.

**4380 Field Experience in Mathematics**

*Prerequisite: 60 semester hours, department approval, and grades of B or better in 6 hours of upper level math.*

Selected students are placed in jobs in the local community which are related to and reinforce their academic training. Positions are full-time, salaried and last the duration of a semester. Recommended for students not already employed in their area of study.

**4390 Selected Topics in Mathematics (3-3-0)**

*Prerequisite: Department approval.*

Intensive study of one or more major topics in mathematics. Course may be repeated for credit with department approval.

**4395 Senior Project in Mathematics**

*(Cross-listed as CS 4395, STAT 4395. Credit may not be earned for more than one.)*

*Prerequisite: COMM 1304, ENG 3302, grade of B or better in CS 4294, 3.0 GPA, senior standing and department approval.*

Intensive study under the guidance of a member of the Computer and Mathematical Sciences faculty culminating in an individually researched and formally written report and oral presentation dealing with the applications of the mathematical sciences in the student's area of specialization and related to one type of business or industry in the Houston area.

**4396 Senior Thesis**

*Prerequisite: Formal approval of department chair and student's advisor for MATH 4395.*

Intensive study under the guidance of a member of the Computer and Mathematical Sciences faculty which continues and expands the research carried out in MATH 4395. A formal written report and oral presentation will be required.

**4399 Directed Study in Mathematics**

*Prerequisite: Formal approval by department chair and dean.*

Selected topics in mathematics; intensive individual study under the guidance of a member of the Computer and Mathematical Sciences faculty.

## Senior/Graduate Courses

**5309 Business Statistics (3-3-0)**

*Prerequisite: Graduate standing or department approval*

Basic concepts of statistics for Master's candidates are explored, including descriptive statistics, probability concepts, point and interval estimation, hypothesis, regression, and analysis of variance. Applications will be geared to business problems, and interpretation of results will be stressed. Computer packages will be utilized, with an emphasis on output analysis.

## Graduate Courses

**6301 Geometry for Teachers (3-3-0)**

*Prerequisite: Department approval.*

Topics will be chosen from Euclidean geometry, including properties of lines, planes, polygons and circles and other curves; concepts of congruence, symmetry, simple transformations and tessellations; techniques of measurement. Emphasis on application, the use of manipulatives, graphing calculators and appropriate computer software.

**6302 Mathematical Structures for Teachers (3-3-0)**

*Prerequisite: Department approval.*

Topics will be chosen from introduction to set theory, functions and logic, elements of number theory, properties of the rational and real number systems, modular arithmetic, techniques of problem-solving. Emphasis on applications, the use of manipulatives, calculators and appropriate computer software.

**6304 Combinatorics and Probability for Teachers (3-3-0)**

*Prerequisite: Department approval.*

Topics will be chosen from principles of counting, elements of probability, simulation and modeling techniques, introduction to graph theory, descriptive statistics including a variety of graphing procedures. Emphasis on manipulatives, calculators and appropriate computer software.

**6311 Advanced Geometry for Teachers (3-3-0)**

*Prerequisite: Department approval.*

Topics will be chosen from Euclidean geometry, analytic geometry, non-Euclidean geometries. Proofs and the axiomatic approach will be included. Emphasis on appropriate geometric computer software.

**6312 Analysis for Teachers (3-3-0)**

*Prerequisite: Department approval.*

Topics will be chosen from theory of functions including continuity, differentiation and integration, introduction to numerical analysis, elements of chaos and fractals. Emphasis on symbolic manipulation software.

**6318 Special Topics for Secondary Teachers (3-3-0)**

*Prerequisite: Department approval.*

Topics will be chosen from probability distributions and inferential statistics, elementary game theory and combinatorics, linear programming and matrix methods, history of mathematics, modeling and simulation, uses of technology in mathematics, web use for searches of mathematical concepts and procedures. Emphasis on appropriate computer software.

## MBIO (Microbiology)

**1105 Microbiology Lab (1-0-3)**

*Prerequisite: Credit or enrollment in MBIO 1305.*

*Laboratory fee required: \$12.*

Exercises and experiments which emphasize sterile techniques and other techniques used in the study of microorganisms in the clinical laboratory. (BIOL 2120)

**1305 Microbiology (3-3-0)**

*Prerequisite: Credit or enrollment in MBIO 1105, CHEM 1305/1105 recommended.*

Morphology, classification and physiology of microorganisms, with special emphasis on bacteria. The principles and procedures of disinfection and sterilization are also considered. (BIOL 2320)

**1310 Microbes and Society (3-2-2)**

*Prerequisite: Credit or enrollment in ENG 1301.*

*Laboratory fee required: \$12.*

This course will explore the significance of microorganisms in everyday living. Microorganisms are involved in processes of immense importance to human society, including food manufacturing, genetic engineering, vitamin and antibiotics production, soil fertility, production of biofuels, recycling of key nutrients and bioremediation. A few microorganisms cause damage such as infectious diseases, food spoilage and corrosion of metal pipes. Other important areas of concern are biological warfare and bioterrorism.

**2105 General Microbiology Lab (1-0-3)**

*Prerequisite: Credit or enrollment in MBIO 2305.*

*Laboratory fee required: \$12.*

Experiments which emphasize sterile technique, staining techniques and biochemical tests used to identify microorganisms. (BIOL 2121)

**2305 General Microbiology (3-3-0)**

*Prerequisite: BIOL 1302/1102 and CHEM 1308/1108 and credit or enrollment in MBIO 2105.*

An introduction to microorganisms (bacteria, viruses, yeasts, algae and protozoa) with attention to morphology, physiology, genetics, taxonomy, and relationship of microorganisms to soil, water, food, industry and health. Credit for both BIOL 1305 and 2305 may not be applied toward a degree. (BIOL 2321)

**3150 Biology of Fungi Laboratory (1-0-3)**

*(Cross-listed as BIOL 3140. Credit may not be earned for both.)*

*Prerequisite: Credit or enrollment in MBIO 3350.*

*Laboratory fee required: \$12.*

A study of the principles and applications of techniques for isolation, culture, and identification of fungi; and a study of the characteristics of fungal growth, nutrition, metabolism, and genetics.

**3320 Virology (3-3-0)**

*Prerequisite: MBIO 2305/2105.*

The various groups of viruses are studied with regard to their structure, characteristics, mechanisms of replication, applications to molecular biology and to disease processes.

**3330 Undergraduate Research (3-0-9)**

*Prerequisite: Approval by science advisor, GPA of 2.5, and permission of instructor.*

Independent investigation of a specific problem or topic in microbiology research under the direction of a selected faculty member.

**3340 Environmental Microbiology (3-3-0)**

*Prerequisite: CHEM 3301/3201 and a grade of C or better in MBIO 2305/2105.*

The course will emphasize the impact of microorganisms on their environment. Topics include microbial diversity, microbiological interactions important in agriculture, medicine and biotechnology, biodegradation and bioremediation, and the impact of microbes in protective biofilms. Current methods for the detection of microorganisms and contamination control will also be discussed.

**3350 Biology of Fungi (3-3-0)**

*(Cross-listed as BIOL 3340. Credit may not be earned for both.)*

*Prerequisite: BIOL 1302/1102, CHEM 1308/1108 or credit or enrollment in MBIO 3150.*

A comprehensive study of fungi with emphasis on higher fungi. Course includes aspects of the fungal body, growth, sporulation, reproduction and diversity.

**3399 Directed Study in Microbiology**

*Prerequisite: Approval of the department chair and the dean,*

*junior standing, GPA of 3.0.*

Intensive in-depth study of various topics under the guidance of a member of the biology faculty.

**4113 Parasitology Laboratory (1-0-3)**

*(Cross-listed as BIOL 4113. Credit may not be earned for both.)*

*Prerequisite: Credit or enrollment in MBIO 4313.*

*Laboratory fee required: \$12.*

Appropriate exercises and experiments that illustrate some of the basic techniques, concepts and facts presented in MBIO 4313.

**4120 Immunology Lab (1-0-3)**

*Prerequisite: Credit or enrollment in MBIO 4320.*

*Laboratory fee required: \$12.*

Introduction to immunology laboratory techniques including agglutination, precipitation, neutralization and labeled immunoassays.

**4140 Pathogenic Microbiology Lab (1-0-3)**

*Prerequisite: Credit or enrollment in MBIO 4340.*

*Laboratory fee required: \$12.*

Techniques commonly used to identify clinically important pathogens.

**4190 – Selected Topics in Microbiology**

*4490 Prerequisite: Varies according to topic.*

In-depth study of different topics in Microbiology and Immunology.

**4210 Microbiology Seminar (2-2-0)**

*Prerequisite: Senior standing or permission of the instructor, MBIO 2305/2105 and 8 hours of upper-level science.*

Readings and student presentations of relevant articles from current scientific journals or the results of the research.

**4230 Advanced Laboratory in Cell and Molecular Biology (2-0-6)**

*(Cross-listed as BIOL 4230. Credit may not be earned for both.)*

*Prerequisite: One of the following: BIOL 4320, BIOL 4330, CHEM 4140, MBIO 4310.*

*Laboratory fee required: \$24.*

Introduction to modern techniques in the manipulation of genes, and their introduction and regulation in eukaryotic cells. Techniques include polymerase chain reaction, in vitro mutagenesis, and fluorescence microscopy. Laboratory work emphasizes the design and carrying out of student-designed protocols.

**4310 Microbial Biotechnology (3-3-0)**

*Prerequisite: A grade of C or better in MBIO 2305/2105, BIOL 3303/3103 and 8 additional hours of upper-level science.*

Fundamental principles of biotechnology with emphasis on microbial systems and practical applications of genetic engineering and clinical systems.

**4313 Parasitology (3-3-0)**

*(Cross-listed as BIOL 4313. Credit may not be earned for both.)*

*Prerequisite: BIOL 1302/1102, CHEM 1308/1108, and credit or*

enrollment in BIOL 4113.

Introduction to parasitism as a biological concept and a survey of specific parasites of medical and veterinary importance. Additional topics include the relationship of opportunistic parasites in the treatment of AIDS, immunodiagnosis and the status of vaccine development for parasitic diseases.

#### **4320 Immunology (3-3-0)**

*Prerequisite:* A grade of C or better in MBIO 2305/2105, BIOL 3303/3103, CHEM 3301/3201.

Innate immune response including latest advances, and detailed study of the adaptive immune response including B and T cell biology, macrophages, complement, hypersensitivities, transplantation and tumor biology.

#### **4340 Pathogenic Microbiology (3-3-0)**

*Prerequisite:* CHEM 3301/3201, MBIO 4320/4120, a grade of C or better in MBIO 2305/2105, and credit or enrollment in MBIO 4140.

Microbial pathogens, clinical characterization, disease symptoms and chemotherapy.

#### **4380 Field Experience in Microbiology**

*Prerequisite:* At least 85 hours and departmental approval.

Field experience integrates theory learned in microbiology courses with practical laboratory and field experiences. May be repeated for additional credit; six hours may be applied toward degree in microbiology.

#### **4399 Senior Honors Thesis**

*Prerequisite:* Senior standing and enrollment in the Honors Program in the Natural Sciences.

A research project, supervised by a member of the natural sciences faculty or scientist at an affiliated research institution or laboratory. The completed research project must be presented in both written and oral form to the science faculty. No more than six hours credit for this course may be applied toward a degree.

## MGT (Management)

#### **3301 Management of Organizations (3-3-0)**

*Prerequisite:* Completion of the common core plus 18 additional hours and completion of, or enrollment in, BA 3300. BA 3300 may be waived upon completion of HUM 3310 or CJ 3300.

Introduction to the management of organizational behavior. Micro and macro organizational behavior topics are covered including motivation, personality, groups and intergroup dynamics, decision making, communication, politics and ethics, organizational design and change and international issues. The functions of management-planning, organizing, leading and controlling are also examined.

#### **3302 Human Resource Management (3-3-0)**

*Prerequisite:* MGT 3301 and completion of, or enrollment on, BA 3300.

Policies, procedures and strategies of human resource management including recruitment, job analysis, employee appraisal, staffing, and compensation.

#### **3303 Negotiating Skills and Techniques (3-3-0)**

*Prerequisite:* Completion of the common core plus 18 additional hours, PSY 1303, and completion of, or enrollment in, BA 3300.

Process of negotiation, human behavior involved in negotiations, techniques of communication, persuasion, strategy, tactics and formulation of game plans. Practical exercises in mock negotiations.

#### **3304 Labor Management Relations (3-3-0)**

*Prerequisite:* MGT 3302 and completion of, or enrollment in, BA 3300.

Current issues and problems facing management in its relationships with employees, government and the community. The management-union relationship, governmental actions affecting this relationship and trends in the composition of the work force.

#### **3306 Compensation Management (3-3-0)**

*Prerequisite:* MGT 3302 and completion or, or enrollment in, BA 3300.

Installation and administration of a wage and salary program. Evaluation of personnel, government and union influence and the implementation and maintenance of various incentive plans and fringe benefit packages.

#### **3307 Equal Opportunity Management (3-3-0)**

(Cross-listed as ADM 3303. Credit may not be earned for both.)

*Prerequisite:* MGT 3301 and completion of, or enrollment in, BA 3300.

Focuses on managerial issues affected by the rights of the workforce. Issues include harassment and discrimination based on such factors as race, ethnicity, gender, physically challenged and sexual orientation.

#### **3308 Purchasing Management (3-3-0)**

*Prerequisite:* Completion of the common core plus 18 additional hours, MATH 1305, and completion of, or enrollment in, BA 3300, or instructor approval.

Management of the purchasing function. Emphasis on the overall goals of purchasing. These goals include: provide an uninterrupted flow of materials and services, keep inventory at minimum, maintain quality standards, develop competent suppliers, standardize the item bought, obtain the lowest ultimate price, improve the organization's competitive position and achieve good external and internal working relationships.

#### **3309 Materials Management (3-3-0)**

*Prerequisite:* Completion of the common core plus 18 additional hours, MATH 1305, and completion of, or enrollment in, BA 3300.

The materials flow process within an organization. Topics include forecasting, logistics of supply, production, and distribution including materials planning, inventory management, storage, traffic, scrap and surplus disposal, ethics, value analysis and governmental acquisition.

#### **3310 Service Operations Management (3-3-0)**

*Prerequisite:* STAT 3309 or SOS 3312, completion of the common core plus 18 additional hours, and completion of, or enrollment in, BA 3300.

Analysis and application of operations management concepts to services. The practical application of service operations management techniques will be emphasized with case analyses derived from a variety of service industries.

**3316 Supply Chain Information and Control Systems (3-3-0)**

*(Cross-listed as CIS 3316. Credit may not be earned for both.)*

*Prerequisite: Completion of the common core plus 18 additional hours, MATH 1305, and completion of, or enrollment in, BA 3300.*

Supply chain information systems include theoretical and practical understanding of hardware and software operations in the supply chain. This includes inventory management and tracking, supplier evaluation, physical distribution systems and customer service using information systems. Technology includes bar coding, radio frequency tracking and other automated data entry techniques in managing procurement operations. The role of documentation in domestic and international trading are examined including the use of commercial invoicing, packing lists, ocean bills of lading, freight forwarding booking requests, shippers' export declarations and certificates of origin.

**3332 Quantitative Decision Making (3-3-0)**

*Prerequisite: MGT 3302 and a grade of C or better in S TAT 3309, and completion of, or enrollment in, BA 3300.*

Decision-making models with applications to business situations involving manufacturing, production and delivery of services. Topics include decision theories, forecasting, total quality management, linear programming, inventory management, location and layout, transportation, queuing, simulation, NPV and breakeven, project management/scheduling, and just-in-time concepts. Topics will be applied to actual business situations using computer software.

**3399 Directed Study in Management**

*Prerequisite: Approval of department chair and dean.*

Selected topics in management; intensive individual study under the guidance of a member of the management faculty.

**4301 International Management (3-3-0)**

*Prerequisite: BA 3300, completion of the common core plus 18 additional hours, or instructor approval.*

International Management is concerned with the coordination of human, financial, and physical resources in multi-cultural organizations. The focus will be on the managerial implications of the following topics: Global economic developments and trends, international cultural environment, international negotiations, strategic planning, integrative strategies, competitiveness, organizing for international operations, human resource management, control, and ethics.

**4303 Small Business Management (3-3-0)**

*Prerequisite: BA 3300 and completion of the common core plus 18 additional hours.*

An overview of the elements necessary for a small business to be developed, introduced into the marketplace, and successfully managed. Emphasis is placed on building a business plan.

**4307 Supply Chain Logistics Management (3-3-0)**

*(Cross-listed as MKT 4304. Credit may not be earned for both.)*

*Prerequisite: BA 3300, MGT 3308, or MKT 3301, or instructor*

*approval.*

The overall logistics process for time and place utility of products. Topics include customer accommodation distribution strategy; planning and scheduling; inventory, packaging and storage strategy and management; transportation infrastructure and regulation; transportation management; logistics network integration and system design processes; organization and relationship management; and performance and financial assessment.

**4308 Applied Organizational Behavior (3-3-0)**

*Prerequisite: BA 3300, MGT 3301, or instructor approval.*

This skill-building course relies on the general concepts imparted in MGT 3301. The focus is on leading and managing within organizations with special emphasis on self-awareness, stress management, supportive communication, conflict management, motivating others, the exercise of power, and team building. Diagnosis of current managerial skill level, readings, group exercises, and applications is included.

**4311 Governmental Procurement (3-3-0)**

*Prerequisite: BA 3300, MGT 3308, or instructor approval.*

The procurement process in governments and governmental agencies. Comparison of procurement practices in the public sector. Emphasis on political, legal, and fiscal aspects including financing and funding. Includes the contracting process, subcontracting, and administration of government contracts and grants including management of progress, quality, and contract changes.

**4314 Quality Management (3-3-0)**

*Prerequisite: BA 3300, MGT 3301, and MGT 3332 or instructor approval.*

A comprehensive study of management and technical issues in quality management. Topics include quality management philosophies, TQM, customer satisfaction, continuous improvement, organization and implementation of quality, quality assurance, and statistical process control.

**4315 Supply Chain Management (3-3-0)**

*Prerequisite: BA 3300, MGT 3308 or equivalent, or instructor approval.*

Covers the concept of supply chains beginning with raw materials, going through an organization's internal operations, and continuing to the ultimate end user of a product. Focuses on how to manage principal supply chains to improve the overall supply efficiency of an organization. Includes: how to identify supply chains, an overview of methods, processes, and systems used in the operation of supply chains, and where and how to apply or change supply chain operations to improve their performance .

**4330 Project Management (3-3-0)**

*Prerequisite: BA 3300 and a grade of C or better in MGT 3332.*

Techniques for planning, scheduling and controlling are presented with the use of software tools. Emphasis is placed on problem solving skills and project team development. Students will utilize techniques presented in this course to successfully complete a real-world project related to management.

**4350 Advanced Purchasing and Supply Management Seminar (3-3-0)**

*Prerequisite: BA 3300, 12 hours of Purchasing courses, or instructor approval.*

The capstone course in purchasing and supply management. Emphasizes purchasing and supply management strategy and planning through the use of the latest research in purchasing and supply management. Covers body of knowledge essential to meet the requirements of the Certified Purchasing Managers examination.

**4380 Field Experience in Management**

For more information and qualifications see Field Experience in the College of Business section of this catalog and/or the department chair for your declared major.

**4390 Selected Topics in Management (3-3-0)**

*Prerequisite: Approval of instructor or department chair.*

Intensive study of one or more major topics in management. May be repeated for credit with departmental approval when topics vary.

**4391 Selected Topics in Purchasing**

*Prerequisite: Approval of instructor or department chair.*

Intensive study of one or more major topics in purchasing and materials management, especially with respect to new or emerging areas. Course may be repeated for credit with departmental approval when topics vary.

## MKT (Marketing)

**3301 Principles of Marketing (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours and completion of, or enrollment in, BA 3300. BA 3300 may be waived upon completion of HUM 3310 or CJ 3300.*

Factors involved in the management of the marketing function relative to product development, promotion, pricing, physical distribution and the determination of marketing objectives within the framework of the marketing system and available markets.

**3302 Personal Selling (3-3-0)**

*Prerequisite: Completion of the common core plus 18 additional hours or instructor approval, and completion of, or enrollment in, BA 3300.*

A development of the selling skills knowledge and technique required for effective consumer and industry selling. Emphasis is placed on learning and using prospecting skills, assessing customer needs, building reports, establishing benefit connections, handling objections and closing techniques to build long-term relationships.

**3303 Business Marketing (3-3-0)**

*Prerequisite: MKT 3301 or departmental approval and completion of, or enrollment in, BA 3300.*

Industrial or business marketing focuses on those activities that facilitate exchanges of products and services among businesses. Business markets differ from consumer markets in distinct ways that require different marketing practices. This course explores the application of marketing principles such as

segmentation, positioning, promotion, distribution, pricing and product development to industrial and business markets.

**3304 International Marketing (3-3-0)**

*Prerequisite: MKT 3301 and completion of, or enrollment in, BA 3300.*

An examination of the problems, systems, procedures and general environment of international marketing, including differences in cultural and marketing practices among nations.

**3305 Promotional Strategy (3-3-0)**

*Prerequisite: MKT 3301 or departmental approval and completion of, or enrollment in, BA 3300.*

An in-depth study of the interrelationships among the elements of the promotional mix: advertising, personal selling, sales promotion and publicity.

**3310 Marketing Channels (3-3-0)**

*Prerequisite: MKT 3301 and completion of, or enrollment in, BA 3300.*

Design, implementation and management of marketing channels. Topics include market segmentation for channel design, channel structure and flows, channel integration, alliances, and legal constraints, performance measurement, channel institutions, and the role of logistics and supply chain management in marketing channels.

**3330 Retail Management (3-3-0)**

*Prerequisite: BA 3300, MKT 3301.*

Overview of the retailing industry and the nature and functions of retail organizations. Special emphasis is placed on the managerial aspects of retailing including product and site selection, store operations, and the development of the store image.

**3399 Directed Study in Marketing**

*Prerequisite: Approval of department chair and dean.*

Selected topics in marketing; intensive individual study under the guidance of a member of the marketing faculty.

**4301 E-Marketing (3-3-0)**

*Prerequisite: BA 3300 and MKT 3301.*

Covers the principles for understanding and implementing marketing programs via the Internet. A framework for developing, and the tools for implementing, Internet marketing plans are presented. All aspects of the marketing mix and online buying behavior are addressed.

**4304 Supply Chain Logistics Management (3-3-0)**

*(Cross-listed as MGT 4307. Credit may not be earned for both.) Prerequisite: BA 3300, MGT 3308, or MKT 3301, or instructor approval.*

The overall logistics process for time and place utility of products. Topics include customer accommodation distribution strategy; planning and scheduling; inventory, packaging and storage strategy and management; transportation infrastructure and regulation; transportation management; logistics network integration and system design processes; organization and relationship management; and performance and financial assessment.

**4305 Consumer Behavior (3-3-0)**

*Prerequisite: BA 3300 and MKT 3301.*

Fundamental behavioral concepts applied to understanding consumer behavior. Topics include decision-making, learning, motivation, psychology, culture, and attitude formation as it applies to consumption behaviors.

**4306 Marketing Research (3-3-0)**

*Prerequisite: BA 3300, STAT 3309 and MKT 3301 or departmental approval.*

Marketing research supports marketing programs by providing information that describes and predicts market behavior. The marketing research process includes problem formulation, research design, data collection, data analysis and report writing. All aspects of marketing research are covered in this course with particular emphasis placed on research designs that will support decision-making.

**4308 Exporting and Importing (3-3-0)**

*Prerequisite: BA 3300 and MKT 3301 or departmental approval.*

Accessing global markets is the focus of this course. Strategies and practices for entering and expanding foreign markets require consideration of cultural, political, business and legal customs. Learning the procedures and marketing practices needed to establish an export/import business is emphasized.

**4309 Marketing Management and Strategy (3-3-0)**

*Prerequisite: BA 3300 and 9 hours of Marketing or departmental approval.*

Covers marketing, planning, strategy and management. A review of basic marketing principles and tools for analyzing marketing problems. The core of the course involves the analysis of cases to develop marketing strategies and plans.

**4310 Seminar in Retail Strategy (3-3-0)**

*Prerequisite: BA 3300; MGT 3301, 3310; MKT 3301, 3330.*

The capstone course for the minor in retail management. Emphasizes strategy and management of retail outlets including current issues in retailing. May include cases, simulations, and advanced analytical techniques.

**4380 Field Experience in Marketing**

For more information and qualifications see Field Experience in the College of Business section of this catalog and/or the department chair for your declared major.

**4390 Selected Topics in Marketing**

*Prerequisite: Approval of department chair.*

Intensive study of one or more major topics in marketing, especially with respect to a new or emerging area.

## MSCI (Military Science)

**1125 Physical Readiness Training (1-0-3)**

Offered in fall semesters. Utilizes Army fitness techniques; develops strength, flexibility and endurance; develops self-confidence through leadership training and physical activities.

**1126 Physical Readiness Training (1-0-3)**

Offered in spring semesters. Utilizes Army fitness techniques;

develops strength, flexibility and endurance; develops self-confidence through leadership training and physical activities.

**1131 Intermediate Physical Fitness (1-0-6)**

*Prerequisite: Must be ROTC cadet.*

Physically demanding. Develops skills through team competition. Land navigation, tactics, assembly/disassembly of weapon, assembly of one-man rope bridge. Students are required to attend fitness training five times a week. Participants compete for Ranger Challenge positions. Selected cadets compete against teams from other universities at the annual Ranger Challenge competition.

**1210 Introduction to ROTC (2-1-2)**

Learn Fundamental concepts of leadership in both classroom and outdoor laboratory environments. Increase self-confidence through team study and activities in basic drill, physical fitness, rappelling, first aid and basic marksmanship. Develop communication skills to improve individual performance and group interaction. One-hour classroom session and a required lab. No military commitment is required for attending this course.

**1220 Introduction to Leadership (2-1-2)**

Learn and apply principles of effective leadership. Reinforce self-confidence through participation in physically and mentally challenging training with upper division ROTC students. Develop communication skills to improve individual performance and group interaction. Relate ethical values to the effectiveness of a leader. Includes training on survival skills and self-defense. One hour classroom session and a required lab. No military commitment is required for attending this course.

**2210 Military Leadership Development (2-2-2)**

Offered in fall semesters Characteristics of leadership, problem analysis, decision making, oral presentations, first aid, small unit tactics, land navigation, basic radio communication, marksmanship, fitness training, rappelling. Fitness training required two times per week in addition to class and lab.

**2220 Military Leadership Development (2-2-2)**

Offered in spring semesters Characteristics of leadership, problem analysis, decision making, oral presentations, first aid, small unit tactics, land navigation, basic radio communication, marksmanship, fitness training, rappelling. Fitness training required two times per week in addition to class and lab.

**2410 Basic Camp**

*Prerequisite: Approval of the chair of Military Science at UH.*

Six-week off-campus field training practicum. Includes students to the Army and leadership. Student will not receive credit for both basic course work and Basic Camp. No military obligation is associated with this course.

**2810 Leader's Training Course**

*Prerequisite: Approval of the chair of Military Science at UH.*

Four week off-campus field training practicum. Introduces student to the Army and leadership. Credit may not be received for both MSCI 2810 and the combination of MSCI 1210, 1220, 2210, and 2220. No military obligation is associated with this course.

**3310 Advanced Military Science (3-2-3)**

*Prerequisite: MSCI 2220 or consent of the chair of Military Science at UH.*

Offered in fall semesters. Leadership, preparing combat orders, military instruction principles, small unit tactics, tactical communications, fitness training. Class is designed to prepare students for Advanced Camp. Fitness training required three times per week in addition to class and lab.

**3320 Advanced Military Science (3-2-3)**

*Prerequisite: MSCI 2220 or consent of the chair of Military Science at UH.*

Offered in spring semesters. Leadership, preparing combat orders, military instruction principles, small unit tactics, tactical communications, fitness training. Class is designed to prepare students for Advanced Camp. Fitness training required three times per week in addition to class and lab.

**3398 Special Problems**

*Prerequisite: Junior standing and consent of the chair of Military Science at UH.*

**3490 Summer Field Training**

*Prerequisite: MSCI 3320 or consent of the chair of Military Science at UH.*

Off-campus field training practicum stressing application leadership management with emphasis on tactical and special military skills. Places students in demanding and stressful leadership situations.

**4310 Advanced Military Science (3-2-3)**

*Prerequisite: MSCI 3320 or consent of the chair of Military Science at UH.*

Offered in fall semesters. Leadership and command, military law, administration/staff operations and procedures, dynamics of the military team, training management, ethics and professionalism. Fitness training required three times per week in addition to class and lab.

**4320 Advanced Military Science (3-2-3)**

*Prerequisite: MSCI 3320 or consent of the chair of Military Science at UH.*

Offered in spring semesters. Leadership and command, military law, administration/staff operations and procedures, dynamics of the military team, training management, ethics and professionalism. Fitness training required three times per week in addition to class and lab.

**MUS (Music)**

**1303 Reading Music (3-3-0)**

Practice in reading and writing of music notation and rhythms commonly found in choral and instrumental literature. Keyboard used to visualize musical symbols, and plastic recorders used for practical realization.

**1304 Music Theory I (3-3-0)**

*Prerequisite: MUS 1303 or permission of instructor.*

Study and practice of tertian construction, writing four part harmony, harmonic analysis using figured bass, and ear

training; emphasis on developing ability to write and analyze tonal music. (MUSI 1311)

**2301 Music Appreciation: Before 1750 (3-3-0)**

*Prerequisite: READ 1300 or acceptable reading placement score.*

A general survey of Western music from the Middle Ages to 1750 with a study of representative composers and compositions through recordings, lectures and live performances.

**2302 Music Appreciation: After 1750 (3-3-0)**

*Prerequisite: READ 1300 or acceptable reading placement score.*

A general survey of Western music from 1750 to present with a study of representative composers and compositions through recordings, lectures and live performances.

**3301 Major Developments in the History of Music (3-3-0)**

*(Cross-listed as HUM 3313. Credit may not be earned for both.)*

*Prerequisite: 3 hours of music appreciation.*

A survey of important historical events in the development of music theory and performance.

**3302 Introduction to African American Music (3-3-0)**

*Prerequisite: MUS 2301 or 2302*

This course will introduce students to various styles of the African American musical tradition. Starting with basic characteristics of music in West Africa and working chronologically, the course will cover performing arts, religion, and other sociopolitical elements that have influenced some of the vibrant music in American culture.

**3303 Jazz Styles I (3-3-0)**

*(Cross-listed as HUM 3317. Credit may not be earned for both.)*

*Prerequisite: MUS 2301 or 2302 or approval of instructor.*

Introduction to various styles of jazz from its beginnings at the end of the 19th century to the 1940s. Beginning with the early years of "traditional" jazz in New Orleans and progressing chronologically, students will be introduced to major figures and styles of jazz through videos, recordings, readings and concerts. Includes study of the outside forces that helped shape the music and the musicians.

**3304 Jazz Styles II (3-3-0)**

*(Cross-listed at HUM 3318. Credit may not be earned for both.)*

*Prerequisite: MUS 2301, MUS 2302 or approval of instructor.*

Introduction to various styles of jazz from the 1940s to today. Beginning with the evolution of jazz into a chamber art form during the bebop movement of the 1940s and progressing chronologically, students will be introduced to major figures and styles of jazz through videos, recordings, readings and concerts. Includes study of the outside forces that helped shape the music and the musicians.

**3305 World Musics (3-3-0)**

*Prerequisite: MUS 2301 or 2302.*

Introduces music of world cultures outside the Western musical tradition. Beginning in Australia and working geographically around the world, the course deals with performing arts, religion, history and other social and political elements that have in-

fluenced the development of the musical styles that define selected cultures. The tools of ethnomusicology, the study of music in its cultural context, are the basis of the methodology for this course.

**3399 Directed Study in Music**

*Prerequisite: Junior standing; formal approval by department chair and dean; cumulative GPA of 3.0 and G PA of at least 3.3 in the specific area of directed study.*

Selected topics in the field; intensive individual study under the guidance of a member of the faculty.

**4301 Jazz Heritage**

*Prerequisite: Three hours of music appreciation or music history, departmental approval, and pre-paid non-refundable deposit for trip.*

Study of jazz styles associated with a particular city including a week-long field trip to that city. Participation in the field trip is required. May be repeated once when the city is different, with departmental approval. Extra fees will be charged to pay for the trip.

## NS (Natural Sciences)

**1300 Emergence of Modern Science (3-2-2)**

*Prerequisite: Credit or enrollment in ENG 1301.*

*Laboratory fee required: \$12.*

This course will focus on the emergence and practice of the modern scientific method, major scientific discoveries and their role in the development of modern science and society, and the interaction of modern science and society. The course will illustrate how scientists observe, develop questions and interpret the natural world in an integrated manner across all disciplines of science. Students will also explore how science influences the worldview of Western culture and the role of politics, ethics and technology in the development of science. Lab sessions will focus on how scientists make and interpret measurements of natural phenomena; and will provide exercises in using the scientific method including the interpretation of data; various ethical and practical problems such as nuclear energy, genetic engineering, land abuse and population pressures.

**3310 Physical Science Studies (3-1-4)**

*Prerequisite: Admission to Teacher Education Program and two semesters of natural science (6-8 hours), lab-based courses preferred.*

An integrated lecture/laboratory course emphasizing major topics in chemistry, materials science and physics and their applications in society and to science education.

**3311 Earth and Environmental Science Studies (3-1-4)**

*Prerequisite: Admission to Teacher Education Program and two semesters of natural science (6-8 hours), lab-based courses preferred.*

An integrated lecture/laboratory course emphasizing major topics in earth science and environmental science and their applications in society and to science education.

**3312 Life Science Studies (3-1-4)**

*Prerequisite: Admission to Teacher Education Program and two semesters of natural science (6-8 hours), lab-based*

*courses preferred.*

An integrated lecture/laboratory course emphasizing principal areas of the life sciences and their applications in society and to science education.

## Graduate Courses

**6301 Selected Topics in Earth and Environmental Science (3-3-0)**

*Prerequisite: Graduate Standing*

Possible topics include alternate energy resources, urbanization vs. environmental quality, geological evolution, and special investigations in an area of earth or environmental science.

**6311 Selected Topics in Life Science (3-3-0)**

*Prerequisite: Graduate Standing*

Possible topics include economic botany, bioengineering, genetic-related health problems, plant physiology, nutrition and health, and special investigations in an area of life science.

**6321 Selected Topics in Physical Science (3-3-0)**

*Prerequisite: Graduate Standing*

Possible topics include physical measurements in the environment, applications of classical and modern physics, properties and uses of modern materials, production and properties of common industrial chemicals, and special investigations in an area of physical science.

**6331 Selected Topics in Advanced Geology and Physics (3-3-0)**

*Prerequisite: Graduate Standing*

Plate tectonics, exploration and production of energy resources, classical and modern physics, environmental modeling, physics of the atmosphere, and advanced investigative methods in geology and physics.

## PED (Professional Education)

**3301 Introduction to Exceptional Education (3-3-0)**

*Prerequisite: Admission to Teacher Education program.*

An introduction to exceptionalities among children with emphasis on prevalence, causes, assessment, characteristics and educational considerations. Additional topics include: legal factors in special education, bilingualism, parents and families and current trends and issues.

**3302 Teaching Middle School Mathematics 4 - 8 (3-3-0)**

*Prerequisite: MATH 3321, 3322.*

Strategies, techniques, concrete materials, and technology used in teaching mathematical concepts to students in grades 4-8. Students will strengthen their understanding of underlying concepts of grades 4-8 mathematics as related to the TEKS, state and national standards, and the teaching of middle school students. Special emphasis is placed on pedagogical issues, problem solving, and real life connections in the teaching of mathematics content appropriate for middle school students.

**3303 Teaching Middle School Environmental Science 4 - 8 (3-3-0)**

*Prerequisite: Six hours from BIOL 1310; GEOL 1307; NS 3310, 3311, 3312.*

Strategies, techniques, concrete materials, and technology used in teaching environmental science concepts to students in grades 4-8. Students will strengthen their understanding of underlying concepts of grades 4-8 mathematics as related to the TEKS, state and national standards, and the teaching of middle school students. Special emphasis is placed on pedagogical issues, problem solving, and real life connections in the teaching of content in life, earth, and physical science appropriate for middle school students.

**3304 Aesthetic and Physical Development of Children (3-3-0)**

*Prerequisite: Admission to Teacher Education Program.*  
This course provides preservice teachers the opportunity to understand the development of stages of young children in the areas of visual arts, music, creative drama and theatre appreciation, motor skills and perceptual awareness and personal health and safety.

**3314 Children's Literature in Spanish (3-3-0)**

*Prerequisite: Admission to Teacher Education program.*  
This course introduces students to children's Spanish literature, its history, development and uses in relation to the needs of the child and the culture. Instruction is conducted in Spanish.

## PHIL (Philosophy)

**1301 Introduction to Philosophy (3-3-0)**

*Prerequisite: Credit or enrollment in ENG 1301.*  
Teaches student how to think philosophically about basic issues about human nature and the limits of human knowledge, freedom and determinism, morality and responsibility, the role of science, technology, work and religion in their lives. (PHIL 1301)

**1302 Critical Thinking (3-3-0)**

A practical introduction to thinking effectively that develops skills in recognizing premises and conclusions to arguments. The course provides practice in evaluating arguments, clarifying meanings, recognizing the various ways language functions, and defining terms. The course teaches both deductive and inductive uses of logic using examples from various disciplines including the sciences, literature, politics and advertising. The class teaches precision in language and interpretation.

**2301 Classical Philosophy (3-3-0)**

*Prerequisite: Credit or enrollment in ENG 1301.*  
Traces the development of Western philosophy from its Greek sources through Roman and medieval philosophy to the birth of the modern world. (PHIL 2316)

**2302 Modern Philosophy (3-3-0)**

*Prerequisite: Credit or enrollment in ENG 1301.*  
An historical survey of the development of philosophic thought from Descartes through Kant with emphasis on the rationalists and empiricists. (PHIL 2317)

**3301 Moral Issues, Personal and Professional (3-3-0)**

*Prerequisite: 3 hours of philosophy or junior standing.*  
Ethical theories, both traditional and modern, as applied to contemporary personal and professional problems.

**3302 Philosophy of Science (3-3-0)**

*Prerequisite: ENG 1302.*  
Examines the nature of scientific knowledge and practice in both the natural and social sciences, with specific attention to the logic of scientific discovery and the nature of observation and theory. Also investigates the dimensions and meaning of objectivity and the significance of value assumptions, practical politics, and economic concerns in scientific investigation.

**3304 Logic (3-3-0)**

*Prerequisite: ENG 1302.*  
An advanced skills class that develops the mind's flexibility and endurance. The course practices identifying informal fallacies and evaluating written arguments. The primary emphasis is on formal logic, including propositions, syllogisms, and probable inference. (PHIL 2303)

**3305 Contemporary Philosophy (3-3-0)**

*Prerequisite: 3 hours of philosophy.*  
A survey of recent philosophic schools and movements from Nietzsche to the deconstructionists. Emphasis on phenomenological and existential philosophies.

**3317 Philosophy of Race (3-3-0)**

*Prerequisite: ENG 1302.*  
A philosophical analysis of the concept of race, various constructions of races and issues of racism.

**3319 Philosophy of Gender (3-3-0)**

*Prerequisite: ENG 1302.*  
This course examines the ideas behind the cross cultural and historical construction of gender. The discourse invites men and women to involve themselves philosophically in issues of gender with an eye to both personal and societal concerns. The readings emphasize the developments of feminist philosophy in politics, literature and art. Students will arrive at their own evaluation of the significance of gender differences. May be used to fulfill the writing application course requirement.

**3320 Environmental Ethics (3-3-0)**

*Prerequisite: Junior standing.*  
Local and world-wide environmental problems make understanding how to relate to the natural world of crucial practical importance. This course explores the conditions for moral judgment when interests such as employment and production conflict with environmental issues. Its topics include ancient, traditional, and modern adjudications of the appropriate relation between human persons and nature. Course readings and discussion aim at using philosophical strategies to generate an ethics suitable for organic life.

**3322 World Religions (3-3-0)**

*Prerequisite: ENG 1302.*  
A comparative survey of religions around the world.

**3323 Philosophy of Religion (3-3-0)**

*Prerequisite: ENG 1302.*  
A consideration of the problems of faith and reason, the nature of deity, arguments for and against God's existence; nature of evil.

**3340 Postmodern Theory (3-3-0)**

*Prerequisite: PHIL 2301 and 2302; or PHIL 3305; or permission of the instructor.*

This class will study the development of postmodern theory in philosophy and its influences on political theory, cultural studies, science, and the arts. In addition to addressing criticisms from ethical theorists, feminists, and philosophers of science, the course will consider the effects of postmodernism on the future of philosophy.

**3399 Directed Study in Philosophy**

*Prerequisite: Junior standing, formal approval by department chair and dean, cumulative GPA of 3.0 and G PA of 3.3 in the specific area of directed study.*

Selected topics in philosophy. Intensive individual study under the guidance of a member of the philosophy faculty.

**4315 Symbolic Logic (3-3-0)**

*Prerequisite: PHIL 1301 or PHIL 1302 or permission of instructor.*

An introduction to the principles of ordered thought, discussing the logic of predicates, quantifiers; nondeductive arguments; calculation of probabilities, statistical inference, propositional and predicate calculus.

**4390 Special Topics in Philosophy (3-3-0)**

*Prerequisite: 3 hours in philosophy or permission of the instructor.*

Selected topics in philosophy. Topics may vary from semester to semester. Course may be repeated for credit when topics vary.

## PHYS (Physics)

**1107 General Physics Laboratory I (1-0-3)**

*Prerequisite: Credit or enrollment in PHYS 1307.*

*Laboratory fee required: \$12.*

Topics include mechanics, bulk properties of matter, heat and waves. (PHYS 1101)

**1108 General Physics Laboratory II (1-0-3)**

*Prerequisite: Credit or enrollment in PHYS 1308.*

*Laboratory fee required: \$12.*

**1301 Introduction to Solar System Astronomy (3-2-2)**

*Prerequisite: Credit or enrollment in MATH 1301 or MATH 1310.*

*Laboratory fee required: \$12.*

A course for non-science majors which surveys the history of astronomy, its technologies and physical principles, the solar system and its origins. Recent discoveries and the competing theories to interpret them are discussed, as are interactions between astronomy and society such as technology spin-offs and light pollution. Students are introduced to scientific measurement and error. Indoor and outdoor experiments are integrated into the course, including the use of telescopes and photography of the moon. Recent data provided by NASA and other agencies are introduced. Up to three evening observing sessions are required for this course.

**1302 Introduction to Stellar and Galactic Astronomy (3-2-2)**

*Prerequisite: Credit or enrollment in MATH 1301 or MATH 1310.*

*Laboratory fee required: \$12.*

A course for non-science majors which surveys stellar and galactic systems, the evolution and properties of stars, galaxies, clusters of galaxies, the properties of interstellar matter, cosmology and the effort to find extraterrestrial life. Competing theories that address recent discoveries are discussed. The role of technology in space sciences, the spin-offs and implications of such are presented. Visual observations and laboratory exercises illustrating various techniques in astronomy are integrated into the course. Recent results obtained by NASA and other agencies are introduced. Up to three evening observing sessions are required for this course, one of which will take place off campus (George Observatory at Brazos Bend State Park.)

**1303 Light, Color and Sound (3-2-2)**

*Prerequisite: MATH 1301 or MATH 1310.*

*Laboratory fee required: \$12.*

This course for non-science majors will examine 3 physical phenomena that pervade our daily lives. Simple harmonic motion and characteristics of waves are examined, as well as their application to light, color and sound. Topics will include music, acoustics, solar radiation, optical devices, rainbows and possible physiological and societal effects. Experiments dealing with these topics and optical and acoustical devices are integrated into the course.

**1307 General Physics I (3-3-0)**

*Prerequisite: MATH 1301 and MATH 1302 or the equivalent and credit or enrollment in PHYS 1107.*

The elementary principles of mechanics, heat and wave motion using elementary trigonometry and algebra. Topics include kinematics, dynamics of particles and rigid bodies; conservation of mass, momentum and energy; simple harmonic motion and characteristics of waves, mechanical and thermal properties of solids and fluids; and thermal properties, kinetics and dynamics of ideal gases. Credit for both PHYS 1307 and PHYS 2401 may not be applied toward a degree. (PHYS 1301)

**1308 General Physics II (3-3-0)**

*Prerequisite: PHYS 1307 and credit or enrollment in PHYS 1108.*

Continuation of PHYS 1307. Elementary principles of electromagnetism, optics and modern physics. Topics include static electric and magnetic fields and the motion of charged particles therein; induced electric and magnetic fields; DC and AC circuits; geometrical and physical optics; the concept of quantization and the properties of the atom and its nucleus. Credit for both PHYS 1308 and PHYS 2402 may not be applied toward a degree. (PHYS 1302)

**2101 Physics Laboratory I (1-0-3)**

*Prerequisite: Credit or enrollment in PHYS 2401.*

*Laboratory fee required: \$12.*

Topics include linear and rotational motion, collisions, simple harmonic motion and thermal properties of matter. (PHYS 2125)

**2102 Physics Laboratory II (1-0-3)**

*Prerequisite: Credit or enrollment in PHYS 2402.*

*Laboratory fee required: \$12.*

Topics include static electric and magnetic fields and electron motion therein, DC and AC circuits including linear and nonlinear devices and properties of electromagnetic waves, and geometrical and physical optics. (PHYS 2126)

**2401 Physics I (4-4-0)**

*Corequisite: PHYS 2101 and MATH 2401.*

Topics include: kinematics and dynamics in one, two and three dimensions, statics, dynamics, potentials, conservation of energy and momentum (linear and angular), rotational kinematics and dynamics, oscillations, gravitation, fluid mechanics, thermal properties of matter, kinetic theory of gases and the first and second law of thermodynamics. (PHYS 2425)

**2402 Physics II (4-4-0)**

*Prerequisite: Grade of C or better in PHYS 2401, credit or enrollment in PHYS 2102, and credit or enrollment in MATH 2402.*

Topics include electric charge, electric fields and potentials, Gauss' Law, capacitors and dielectrics, AC and DC electrical circuits, magnetic fields, the Biot-Savart Law, Faraday's Law, magnetic properties of matter, Maxwell's equations and electromagnetic waves and optics. (PHYS 2426)

**3300 Undergraduate Research (3-0-9)**

*Prerequisite: Approval by Natural Science advisor and a minimum GPA of 2.5, and permission of instructor.*

Independent investigation of a specific topic problem in physics research under the direction of a selected faculty member.

**3307 Modern Physics I (3-3-0)**

*Prerequisite: PHYS 2402 or PHYS 1308 and credit or enrollment in MATH 2403.*

Fundamental concepts of quantum physics and special relativity, developed and applied to atomic structure and spectra, nuclear reactions, solid state physics and other related topics of current interest.

**3393 Intermediate Mechanics I (3-3-0)**

*Prerequisite: PHYS 2401 or PHYS 1307 and credit or enrollment in MATH 3301.*

The classical mechanics of particles and systems of particles, and rigid bodies. Newtonian mechanics, linear and non-linear oscillations, Euler's equations and Lagrangian and Hamiltonian dynamics.

**3399 Directed Study in Physics**

*Prerequisite: Formal approval by department chair and dean; junior standing; minimum GPA of 3.0.*

Selected topics in the field; intensive individual study under the guidance of a faculty member.

**3401 Electronics for Scientists and Engineers (4-2-5)**

*Prerequisite: PHYS 2102 and PHYS 2402, or PHYS 1108 and PHYS 1308.*

*Laboratory fee required: \$24.*

Electronics and electronic instrumentation. Lecture concepts are applied and extended in the laboratory. Review of circuit

theory, active devices, digital circuits and design of digital instruments using integrated circuits.

**4380 Field Experience in Physics**

*Prerequisite: At least 75 hours and departmental approval.*

Field experience integrates theory and academic laboratory experience with work experience in industrial, government, or institute laboratories. May be repeated for additional credit; six hours may be applied toward a degree.

**4399 Senior Honors Thesis**

*Prerequisite: Senior standing and enrollment in the Honors Program in the Natural Sciences.*

A research project, supervised by a member of the natural sciences faculty or scientist at an affiliated research institution or laboratory. The completed research project must be presented in both written and oral form to the science faculty. No more than six hours credit for this course may be applied toward a degree.

**4401 Applied Electromagnetism and Optics (4-3-3)**

*Prerequisite: PHYS 2402, MATH 2403 and MATH 3301.*

*Laboratory fee required: \$12.*

An introduction to the fundamentals of electromagnetism. Multipole fields, Laplace and Poisson equations, Maxwell equations, electromagnetic waves, reflection and refraction, spherical scalar waves, interference and diffraction phenomena. Laboratory applications of electromagnetic and optical phenomena.

**PLM (Professional Land Management)****3305 Engineering, Geology and Geophysics for the Land Professional (3-3-0)**

*Prerequisite: EM 3301 required, a course in GEOL recommended, and completion of, or enrollment in, BA 3300.*

The study of basic engineering, geological and geophysical concepts and their application in the energy industry. Topics will include the origin of hydrocarbons, geologic time, sedimentation, reservoirs, geologic and geophysical mapping, traps, migration, source rocks, exploration and production, well logging, and reserve calculation and classification.

**3399 Directed Study in PLM**

*Prerequisite: Formal approval of department chair and dean.*

Selected topics in professional land management; intensive individual study under the guidance of a member of the professional land management faculty.

**4303 Land Management Practice (3-3-0)**

*Prerequisite: BA 3300, PLM 2301, PLM 4301 or departmental approval.*

Development of the technical skills related to understanding the terminology, methodology, planning, strategies and management of the professional land management functions as they relate to: (1) the determination of mineral ownership; (2) negotiation, acquisition, maintenance and disposition of publicly or privately owned oil and gas interests; (3) title curative and the due diligence functions; (4) pooling and unitization; (5) lease administration and payment of the proceeds from oil and gas production; and (6) interpretation, negotiation, preparation,

execution and administration of oil and gas contracts in the USA and internationally, as they relate to farmouts, well trades, operating agreements and host government contracts. Additional emphasis is given to the ethical and professional standards of the petroleum landman as part of the exploration/production team.

#### **4380 Field Experience in PLM**

For more information and qualifications see Field Experience in the College of Business section of this catalog and/or the department chair for your declared major.

## **POLS (Political Science)**

#### **2303 United States Government I (3-3-0)**

*Prerequisite: Enrollment in or completion of ENG 1301.*  
Examines the political systems of the United States and Texas. Focuses on constitutions, federalism, the development and organization of political parties, public opinion and the role of pressure groups. (GOVT 2301)

#### **2304 United States Government II (3-3-0)**

*Prerequisite: Enrollment in or completion of ENG 1301.*  
Examines the three branches of government at both state and national levels and analyzes the role of each in the making of public policy. Selected topics on domestic and foreign policy are included. (GOVT 2302)

#### **3301 Introduction to Public Administration (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304 and junior standing.*  
The field of public management, including a comprehensive view of the dynamics of policy formation and implementation in governmental agencies: structures and procedures, organizational behavior, administrative accountability, personnel administration, financial administration and public service as a career.

#### **3302 Public Policy Analysis (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304 and junior standing.*  
An examination and appraisal of the various theories which have been advanced to explain the definition of public problems and creation of government agendas, government's action in formulating, adopting and implementing policies to address these problems and the impact that government policies actually have on society. Selected policy areas will be examined in detail.

#### **3303 Urban Politics (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304 and junior standing.*  
The American urban center within its political environment, with emphasis on social, economic and governmental problems, as well as urban services and the process of policy formation.

#### **3304 Introduction to Constitutional Law (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304 and junior standing.*  
Major U.S. Supreme Court decisions which have defined the constitutional boundaries of the American political system. The Constitution and its development through judicial interpretation. Emphasis is on the distribution of power in the national government, between the national government and the states, and between government and the individual.

#### **3306 Civil Liberties in the United States (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304 and junior standing.*  
The judicial interpretations of political and civil rights in the Constitution. Emphasis is on principles related to civil liberties and civil rights.

#### **3307 The American Presidency (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304 and junior standing.*  
The role of the president in the American political system, through an examination of presidential relationships with Congress, the bureaucracy and the public.

#### **3308 Introduction to World Politics (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304 and junior standing.*  
Introduction to the political science of war and peace, international institutions, foreign policy and diplomacy, globalization and interdependence, ideology and culture, the national state, dictatorship and democracy, and the ongoing struggle to create effective and legitimate government around the world. Format includes lecture, small groups, map study, and current events.

#### **3309 Texas Politics (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304 and junior standing.*  
This course will cover the current political system in Texas including historical background. It will also show you what you can do to affect politics in Texas and nationally.

#### **3310 American Legislatures (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304 and junior standing.*  
This course in American legislatures compares the structures and functions of local, state and national legislatures across time and across legislative agendas and interest groups.

#### **3311 Campaign Politics (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304 and junior standing.*  
Campaign politics examines recent American election contests and the various strategies candidates and parties have used to achieve electoral success. Topics include the legal environment of national elections, parties and partisanship, voter interest and turnout, theories of voter behavior, campaign finance, the mass media, public opinion polls and campaign reform.

#### **3312 Hispanic Politics (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304.*  
Examines the role of Hispanics in American politics. Evaluates how Hispanics have impacted and been impacted by American political institutions. Investigates theories of group formation and group identity, political participation and representations, as well as specific issues impacting Hispanics.

#### **4301 The American Legal System (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304 and junior standing.*  
An overview of the US legal system, with emphasis on the courts in an urban environment.

#### **4304 American Political Thought (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304 and junior standing.*  
The early influence of European thought on the formation of a purely American political belief system and the influence of modern American thought on the current political system.

**4305 War in the Modern World (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304 and junior standing.*

An investigation into the causes and correlates of conflict in our time and how conflicts may be peacefully resolved.

**4306 Women and Politics (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304 and junior standing.*

Examines the changing political role of women in the United States and compares it to that of women around the world. Investigates political attitudes and values, voting behavior, recruitment, and performance of women in the political arena, as well as the influence of women on public policy.

**4307 Participation and Democracy in American Politics (3-3-0)**

*Prerequisite: POLS 2304, POLS 2304 and junior standing.*

An analysis of the dynamic of citizen involvement in politics, focusing on the nature, extent and consequences of participation. Addresses electoral and non-electoral behavior including protest, interest groups, turnout and theories of voting behavior. The primary focus of the course is political participation and voting in the US.

**4308 East and Southeast Asian Politics (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304 and junior standing.*

Examination of the political, economic and social dynamics of nations in east and southeast Asia. In-depth coverage of the culture, political evolution, economic challenges and future opportunities in these areas.

**4309 Dictatorship and Democracy in the Developing World (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304 and junior standing.*

Uses political science, history and other disciplines to compare and evaluate the problems and prospects of elections, civil rights and liberties, and the rule of law in late developing countries.

**4310 International Terrorism (3-3-0)**

*Prerequisite: POLS 2303, 2304.*

Understanding the concept of terrorism and the role it has played prior to and since September 11, 2001 in international and domestic politics. Exploration of the forces that motivate acts of terrorism including religious, political, and economic components.

**4311 Public Opinion in the United States (3-3-0)**

*Prerequisite: POLS 2303, 2304*

Focus on the role of public opinion in American democracy, specifically, how public opinion research is used to inform public officials of the public's preferences. Analysis of the benefits and dangers associated with increasing reliance by US public officials on public opinion.

**4312 Dictatorship and Democracy in Europe and the United States (3-3-0)**

*Prerequisite: POLS 2303 and POLS 2304.*

Comparison of the political development of Europe and the United States. Begins with an overview of how the modern state and mass participation evolved from European feudal societies dominated by monarchs, warlords, and the Church. Followed by examination of how struggles between nations and

ideologies, such as liberalism, communism, and fascism have influenced the evolution of democracy. Format includes lecture, group work, current events, student research and presentations.

**4314 US Foreign Policy since World War II (3-3-0)**

*Prerequisite: POLS 2303 and POLS 2304.*

Study of US foreign policy. Aims at training students in systematically, critically, and analytically examining the political, economic, and social determinants of the US foreign policy. Provides students with an in-depth knowledge of the process of US foreign policy making.

**4316 Politics of the Middle East (3-3-0)**

*Prerequisite: POLS 2303 and POLS 2304.*

Provides students with an understanding of the complex politics of the Middle East. Draws theories and concepts from the field of comparative politics to understand the issues of the region. The course will trace the evolution of the region by engaging in case studies of countries that dominate its politics. Particular emphasis is placed on the environmental contexts that shape policy in each country, including political culture, political economy, and interaction with the regional and international communities.

**4318 International Political Economy (3-3-0)**

*Prerequisite: POLS 2303 and POLS 2304.*

Aims to train students in systematically, critically, and analytically examining the political and economic interactions in the post-WWII international system. Provides students with an in-depth knowledge of trade policies and rules guiding international economic transactions and the challenges facing the global community in the 21<sup>st</sup> century.

**4390 Selected Topics in Political Science (3-3-0)**

*Prerequisite: POLS 2303, POLS 2304 and junior standing.*

Selected topics in political science. Topics may vary from semester to semester, and the course may be repeated when the topics vary. Topics include comparative politics, American political thought, international relations, development of political ideas, Texas politics, campaign politics, and the U.S. Congress.

## Graduate Courses

**6301 American Government and Politics (3-3-0)**

*Prerequisite: Graduate standing.*

This course is intended to introduce graduate students to the major theoretical concepts and important readings in the study of American politics and government. Students will read books and articles from a wide range of topics, including studies of the origins of American constitutionalism, federalism, legislatures, courts, executives, bureaucracies, elections, mass opinion and political behavior at both national and state levels.

**6302 Elements of Politics (3-3-0)**

*Prerequisite: Graduate standing.*

This course is intended to introduce graduate students to the major theoretical concepts in the study of political science. Topics include approaches to the study of political science; the nature of power, influence, authority; political ideologies; relation-

ship of politics and culture; the individual in politics; political parties and groups; legislatures, executives, bureaucracies, and legal systems; interaction of local, national, international units. While some of the material will have an American focus, this course has a broader conceptual, geographical and temporal focus than POLS 6301.

## PSY (Psychology)

### 1303 General Psychology (3-3-0)

*Prerequisite: Enrollment in or completion of ENG 1301.*

A survey of the essential subject areas, major theories and approaches to the scientific study of behavior and mental processes. (PSYC 2301)

### 2302 Social Psychology (3-3-0)

*Prerequisite: PSY 1303.*

The study of the psychological processes that occur within groups and between groups as a function of the individual. (SOCI 2326 or PSYC 2319)

### 2304 Applied Behavior Analysis (3-3-0)

*Prerequisite: PSY 1303.*

The focus of this course is on the application of principles derived from learning theory to changing behavior in therapeutic, educational, family, personal, and other settings.

### 2306 Adjustment (3-3-0)

*Prerequisite: PSY 1303.*

Psychological theory and research as they relate to contemporary problems of human behavior. Factors contributing to healthy individuals' relationships with themselves and their environment. (PSYC 2315)

### 2310 Human Growth and Development (3-3-0)

*Prerequisite: PSY 1303.*

A lifespan approach to the theories, principles, and characteristics of human development. (PSYC 2314)

### 3301 Industrial/Organizational Psychology (3-3-0)

*Prerequisite: PSY 1303.*

Application of psychological theory to problems of selecting, training, supervising and motivating individuals in organizational settings.

### 3302 Principles of Educational Psychology (3-3-0)

*Prerequisite: PSY 1303.*

An introduction to psychological concepts within the context of education. Additional emphasis on historical, cultural, and legal issues in education.

### 3303 Child Psychology (3-3-0)

*Prerequisite: PSY 1303 and 3 additional hours in psychology.*

The study of development from conception up to adolescence from theoretical and practical viewpoints. Emphasis is on the physical, cognitive, social, and emotional changes which occur during childhood.

### 3304 Advanced Research Methods in Psychology (3-3-0)

*Prerequisite: PSY 1303, a grade of C or better in SOS 2304 and junior standing.*

Research designs used in psychology with emphasis on the role of theory in psychological research, data collection, data analysis and mastery of APA format. Students will conduct original research, analyze data and complete and present an APA-style paper.

### 3305 Adolescent Psychology (3-3-0)

*Prerequisite: PSY 1303 and 3 additional hours in psychology.*

A study of adolescent development from theoretical and practical viewpoints. Emphasis is on the physical, cognitive, social and emotional changes which occur during adolescence.

### 3309 Adult Psychology (3-3-0)

*Prerequisite: PSY 1303 and 3 additional hours in psychology.*

The psychological, biological and sociological factors which affect the major stages of adult development.

### 3310 Psychology of Women (3-3-0)

*Prerequisite: PSY 1303 and 3 additional hours in psychology.*

A survey of the major theories and issues involved in understanding the impact of gender on thinking and behaving.

### 3311 Biological Psychology (3-3-0)

*Prerequisite: PSY 1303 and 3 additional hours in psychology and one of the following: BIOL 1301, 1303, 1310.*

A survey of theory and research in the biology of mind and behavior, focusing on the internal processes underlying the activities of the organism, learning, memory, motivation, perception, and emotion. Important biopsychological phenomena will be discussed such as the biological mechanisms underlying eating and drinking, sexual behavior, sleep and dreaming, and stress and the immune system. Other topics may include the structure and function of the nervous, neuroendocrine, and sensorimotor systems, as well as basic principles of evolution and genetics.

### 4301 The History of Psychology (3-3-0)

*Prerequisite: PSY 1303, 6 additional hours in psychology and junior standing.*

Major theoretical positions and research that contributed to development of psychology as a scientific discipline. Emphasis on developments from the late 19th century to the present.

### 4302 Abnormal Psychology (3-3-0)

*Prerequisite: PSY 1303, 6 additional hours in psychology and junior standing.*

The etiology, classification and treatment of psychopathological disorders from these major theoretical perspectives: psychodynamic, behavioral, humanistic, physiological and sociocultural.

### 4303 African-American Issues in Psychology (3-3-0)

*Prerequisite: PSY 1303, 6 additional hours in psychology and junior standing.*

This course surveys past and contemporary issues pertaining to the African American, including historical, developmental, clinical, educational and social issues.

### 4304 Learning and Behavior (3-3-0)

*Prerequisite: PSY 1303, 6 additional hours in psychology and junior standing.*

Survey of theory and research in the general principles of human and animal learning, with a particular focus on the fundamental processes involved in classical and operant conditioning. Special emphasis on human learning and behavior with practical applications in family and work life.

**4305 Memory and Cognition (3-3-0)**

*Prerequisite: PSY 1303, 6 additional hours in psychology and junior standing.*

Survey of theory and research in cognitive processes with an emphasis in human memory. Topics include learning, memory, perception, language, reasoning, problem-solving, and decision-making. Introduction to the broader field of cognitive science and neurocognition.

**4306 Theories of Personality (3-3-0)**

*Prerequisite: PSY 1303, six additional hours in psychology and junior standing.*

Major contemporary theories of personality are examined along with their implications for clinical application and research.

**4307 Counseling and Psychotherapy (3-3-0)**

*Prerequisite: PSY 1303, 6 additional hours in psychology and junior standing.*

An introduction to both the theory and practice of counseling and psychotherapy, including a survey of some of the major psychotherapeutic approaches used today, practice with applying them to understand and treat a variety of case study examples, and discussion of various personal, professional, and ethical issues involved in practice.

**4308 Psychological Assessment (3-3-0)**

*Prerequisite: PSY 1303, 6 additional hours in psychology and junior standing.*

The theory and practice of psychological tests, including a survey of the commonly used methods, techniques and instruments for measuring and assessing individual differences with regard to intelligence, personality, interests, aptitude and achievement.

**4309 Psychology and the Law (3-3-0)**

*Prerequisite: PSY 1303, either PSY 2302 or CJ 3300, and junior standing.*

Applies psychological principles to legal processes. Topics include factors affecting judges', juries' and attorneys' judgments during trials; inequalities in defining criminal behavior and the application of justice, especially as influenced by race, class, gender and sexual orientation; how the legal system can be used to affect social change.

**4310 Health Psychology (3-3-0)**

*Prerequisite: PSY 1303, 6 additional hours in psychology and junior standing.*

Evaluates social, biological and personality factors in health and illness, with an emphasis on health.

**4311 Sensation and Perception (3-3-0)**

*Prerequisite: PSY 1303, 3 additional hours in PSY and junior standing. PSY 3311 or PSY 4305 recommended.*

Introduction to the processes by which information comes from the external world into the human mind and is processed such

that it has meaning. The anatomy and physiology of the avenues of the mind - the sensory systems - will be examined, as well as the manner in which the brain uses sensory information to create conscious experience of the world.

**4312 Advanced Statistical Analysis (3-3-0)**

*Prerequisite: A grade of C or better in SOS 2304 and SOS 3312, and junior standing. PSY 3304 is recommended.*

Advanced statistical analysis in psychology. Includes individual student experimentation, data analysis, parametric and non-parametric statistical topics and APA style research report writing and presentation.

**4370 Senior Seminar in Psychology (3-3-0)**

*Prerequisite: PSY 1303, 6 additional hours in psychology and junior standing.*

In-depth investigation of selected topics in psychology. May be repeated for credit when topic varies.

## READ (Reading Education)

**3301 Teaching Reading in the Elementary Schools (3-3-2)**

Focuses on the developmental nature of reading. Examines current methods, strategies, and materials for emergent literacy, elementary reading, and middle school reading instruction.

**3302 Correcting Reading Problems in the Classroom (3-3-2)**

Focuses on procedures and strategies for preventing, diagnosing and correcting reading problems. Examines theoretical models of the reading process and the nature and types of reading differences (disabilities).

**3303 Literacy Curriculum, Methods, and Assessment EC-2 (3-3-2)**

*Prerequisite: READ 3305 and READ 3306.*

Current methods, strategies, and curricular resources for teaching and assessing emergent literacy in the early childhood-second grade classroom

**3304 Reading Curriculum, Methods, and Assessment 4-8 (3-3-2)**

*Prerequisite: READ 3305.*

Reading instructional strategies, methods, approaches, and classroom assessment procedures for the upper elementary and middle school classroom teacher. Focuses on providing appropriate instruction to address student diversity and class performance differences for students in upper elementary and middle school.

**3305 Foundations of Literacy EC-12 (3-3-0)**

*Prerequisite: Admission to Teacher Education Program.*

Focuses on the developmental nature of reading and examines theoretical approaches to literacy instruction.

**3306 Language and Literacy Development (3-3-0)**

*Prerequisite: Admission to Teacher Education Program and READ 3305.*

Investigates the relationship between language and thought, theories of language development, changes in the young child's cognitive structure, and the role of the teacher in literacy development.

- 3307 Language Arts Instruction EC-12 (3-3-0)**  
*Prerequisite: Admission to Teacher Education Program and READ 3305.*  
 This course is designed to address instruction of expressive language (speaking and writing) and receptive language (reading and listening). Methodologies for instructing grammar conventions, Standard English usage, spelling, writing process, and expressive communication skills and strategies are emphasized.
- 3308 Literacy Curriculum, Methods, and Assessment in Spanish EC-2 (3-3-2)**  
*Prerequisite: READ 3305 and READ 3306.*  
 Current methods, strategies, and curricular resources for teaching and assessing emergent literacy for the Spanish-speaking student in the early childhood-second grade classroom.
- 3309 Teaching Reading in the Content Areas 4-12 (3-3-0)**  
*Prerequisite: Admission to the Teacher Education Program, READ 3305 (for students seeking 4-8 or 8-12 certification).*  
 Focuses on reading as a thinking and learning process. Emphasizes current theory and methods for teaching reading and study strategies for middle grade and secondary content area teachers. Special attention to assessing reading difficulties and providing appropriate instruction to address student diversity and class performance differences in content area classrooms.
- 3310 Teaching Reading in the Secondary School Content Areas (3-3-0)**  
 Focuses on reading as a thinking and learning process. Emphasizes current theory and methods for teaching reading and study strategies for secondary content area teachers.
- 3311 Teaching Reading in the Secondary School Content Areas (3-3-2)**  
*Prerequisite: Admission to Teacher Education Program and concurrent enrollment in Interdisciplinary Block I Secondary.*  
 Field-based course that focuses on techniques for applying reading and study skills across secondary subject areas. Includes opportunities to interact with students and teachers in urban public school settings.
- 3312 Reading Curriculum, Methods, and Assessment in ESL 4-8 (3-3-2)**  
*Prerequisite: READ 3305.*  
 Instructional strategies, methods, approaches, and classroom assessment procedures for teaching reading to bilingual and ESL upper elementary and middle school students. Focuses on providing appropriate instruction to address student diversity and class performance differences for students in upper elementary and middle school.
- 3317 Bilingual Language Arts Instruction EC-4 (3-3-2)**  
*Prerequisite: Concurrent enrollment in BED 3301 and READ 4306.*  
 Instruction of expressive language (speaking and writing) and receptive language (listening and reading). Methodologies for instructing the writing process including grammar conventions, Standard English and Spanish usage, spelling, and expressive communication skills and strategies.

- 3327 Language Arts Instruction 4-8 (3-3-2)**  
*Prerequisite: Concurrent enrollment in EED 3316 and READ 3304.*  
 Instruction of expressive language (speaking and writing) and receptive language (listening and reading). Methodologies for instructing the writing process including grammar conventions, Standard English usage, spelling, and expressive communication skills and strategies. Field experience is required.
- 4303 Literacy Curriculum, Methods, Assessment (3-3-2)**  
*Prerequisite: READ 3303.*  
 Current methods, strategies, and curricular resources for teaching and assessing beginning reading for students in grades 2-4.
- 4304 Diagnostic Instruction of Reading 4-8 (3-3-2)**  
*Prerequisite: READ 3304.*  
 Designed to address at-risk readers, this course focuses on assessment, evaluation, and diagnosis of reading difficulties and appropriate instructional strategies to meet specific needs within the regular classroom. This field-based course requires working one-to-one with an elementary or middle school student to provide individualized instruction based on assessment data.
- 4306 Literacy Curriculum, Methods, and Assessment in Bilingual/ESL (3-3-2)**  
*Prerequisite: READ 3308.*  
 Current methods, strategies, and curricular resources for teaching and assessing beginning reading for Spanish speaking and ESL students in grades 2-4.
- 4307 Diagnostic Instruction of Reading in the ESL Classroom 4-8 (3-3-2)**  
*Prerequisite: READ 3312.*  
 Designed to address bilingual and ESL readers, this course focuses on assessment, evaluation, and diagnosis of reading difficulties and appropriate instructional strategies to meet specific needs within the regular classroom. This field based course requires working one-to-one with an elementary or middle school bilingual or ESL student to provide individualized instruction based on assessment data.
- 4321 Literacy Across the Curriculum 8-12 (3-3-2)**  
*Prerequisite: Completion of Secondary Block I, READ 3309, concurrent enrollment in SED 3302 and SOSE 3321.*  
 Instructional opportunities for speaking and listening, reading and writing multiple texts/genres, and viewing and representing ideas through concept/issue-based thematic study with attention to the integration of technology. Special attention is given to strategies and resources for struggling adolescent readers. (Secondary Block II course. Field experience required.)
- 4322 Literacy Across the Curriculum 8-12 (3-3-2)**  
*Prerequisite: Completion of Secondary Block I, READ 3309, concurrent enrollment in SED 3302 and SOSE 3321.*  
 Instructional opportunities for speaking and listening, reading and writing multiple texts/genres, and viewing and representing ideas through concept/issue-based thematic study with attention to the integration of technology. Special attention is given

to strategies and resources for struggling adolescent readers. (Secondary Block II course. Field experience is not required.)

## RDG (Reading)

### 1101 Reading Tutorial (1-1-0)

Required for students who have passed RDG 1300 but have not yet fulfilled their THEA (Texas Higher Education Assessment) requirements, and a co-requirement for students repeating RDG 1300. Students receive from faculty tutors individualized instruction designed to prepare them to pass the Reading component of the state-mandated THEA (formerly TASP) examination. Special attention is given to the six THEA-specified reading skills of vocabulary; main ideas and supporting details; writer's purpose, point of view and intended meaning; relationship among ideas and drawing conclusions; critical reasoning, and study skills.

### 1300 Reading (3-3-0)

*Prerequisite: Placement examination is required.*

A review of successful techniques for improving vocabulary, comprehension, interpretation and evaluation, and basic study skills. While this course may not be used to satisfy degree requirements, students placed in it must earn a grade of C or better to be allowed to register for reading-intensive college-level courses.

## SED (Secondary Education)

### 3301 Understanding the Learner in the Secondary School (3-3-2)

*Prerequisite: Admission to Teacher Education Program, PSY 3305, ETC 3301, SOSE 3306, completion of 75% of hours in content area, concurrent enrollment in SED 3305 and SED 3312.*

Explores the relationship of psychological theories to learning and education in the secondary school environment. Emphasis on applying theory-based knowledge to diverse students and families in an urban setting. (Secondary Block I course. Field experience required.)

### 3302 Instructional Design to Promote Student Learning (3-3-2)

*Prerequisite: Successful completion of Secondary Block I, READ 3309 and concurrent enrollment in SOSE 3321 and READ 4321.*

Provides students with opportunities to develop and apply effective instructional strategies and curriculum designs that enhance learning across the secondary school curriculum. Special attention to the integration of technology into lesson planning and design. (Secondary Block II course. Field experience required.)

### 3303 Understanding the Learner in the Secondary School (3-3-2)

*Prerequisite: Admission to Teacher Education Program, PSY 3305, ETC 3301, SOSE 3306, completion of 75% of hours in content area, concurrent enrollment in SED 3305 and SED 3312.*

Explores the relationship of psychological theories to learning and education in the secondary school environment. Emphasis

on applying theory-based knowledge to diverse students and families in an urban setting. (Secondary Block I course.)

### 3305 Professional Roles and Responsibilities in the Urban Secondary School (3-3-2)

*Prerequisite: Admission to Teach Education Program, PSY 3305, ETC 3301, SOSE 3306, completion of 75% of hours in content area and concurrent enrollment in SED 3301 and SEDS 3312.*

Focuses on a wide range of pedagogical issues including educational philosophy, reflection, effective lesson design and presentation and other professional teaching roles and responsibilities. (Secondary Block I course. Field experience required.)

### 3306 Professional Roles and Responsibilities in the Urban Secondary School (3-3-2)

*Prerequisite: Admission to Teacher Education Program, PSY 3305, ETC 3301, SOSE 3306, completion of 75% of hours in content area and concurrent enrollment in SED 3301 and SEDS 3312.*

Focuses on a wide range of pedagogical issues including educational philosophy, reflection, effective lesson design and presentation and other professional teaching roles and responsibilities. (Secondary Block I course. Field experience is not required.)

### 3311 Curriculum Foundations for Teaching in the Urban Secondary School (3-3-2)

*Prerequisite: Admission to Teacher Education Program and concurrent enrollment in Interdisciplinary Block I.*

An introductory course which surveys techniques and materials appropriate for presentation and design of the learning experience across the secondary school curriculum. This field-based course is structured so that special emphasis is placed on the interaction of technology into the learning experience.

### 3312 Organizing and Managing the Classroom Environment in the Secondary School (3-3-2)

*Prerequisite: Admission to the Teacher Education Program, PSY 3305, ETC 3301, SOSE 3306, completion of 75% of hours in content area and concurrent enrollment in SED 3301 and SED 3305.*

Introduction, analysis and development of effective classroom management principles. Emphasis on consideration for students of various cultures in urban settings and students with special needs. (Secondary Block I course. Field experience required.)

### 3313 Instructional Design to Promote Student Learning (3-3-2)

*Prerequisite: Successful completion of Secondary Block I, READ 3309 and concurrent enrollment in SOSE 3321 and READ 4321.*

Provides students with opportunities to develop and apply effective instructional strategies and curriculum designs that enhance learning across the secondary school curriculum. Special attention to the integration of technology into lesson planning and design. (Secondary Block II course. Field experience is not required.)

**3314 Organizing and Managing the Classroom Environment in the Secondary School (3-3-2)**

*Prerequisite: Admission to the Teacher Education Program, PSY 3305, ETC 3301, SOSE 3306, completion of 75% of hours in content area and concurrent enrollment in SED 3301 and SED 3305.*

Introduction, analysis and development of effective classroom management principles. Emphasis on consideration for students of various cultures in urban settings and students with special needs. (Secondary Block I course. Field experience is not required.)

**4301 Student Teaching in the Secondary Classroom (3-3-15)**

*Prerequisite: Successful completion of Interdisciplinary Blocks I and II, concurrent enrollment in Interdisciplinary Block III.*

Classroom management, student record keeping, assisted and independent teaching in an urban public school, guided by a mentor teacher and site-based university instructor.

**4302 Student Teaching in the Secondary Classroom (3-3-15)**

*Prerequisite: Successful completion of Interdisciplinary Blocks I and II, concurrent enrollment in Interdisciplinary Block III.*

Classroom management, student record keeping, assisted and independent teaching in an urban public school, guided by a mentor teacher and site-based university instructor.

## SOC (Sociology)

**1303 Principles of Sociology (3-3-0)**

*Prerequisite: Credit or enrollment in ENG 1301.*

An introduction to the scientific study of human society. This sociological perspective focuses on new ways of looking at society and its component parts, so the student is encouraged to develop a critical view of society, social processes and individual roles. (SOCI 1301)

**2302 Social Problems (3-3-0)**

*Prerequisite: SOC 1303.*

The relationship of social problems to social structure with specific emphasis on such problems as crime, poverty, urban deterioration and aging. (SOCI 1306)

**2304 Sex Roles (3-3-0)**

*Prerequisite: One of the following: ANTH 2301, ANTH 2302, PSY 1303 or SOC 1303.*

The changing male and female roles in contemporary society. Traditional sex role socialization, resulting stereotypical attitudes and behavior, the status of both men and women in society. Emerging trends in employment, family roles and male-female relationships.

**2306 Introduction to Social Work (3-3-0)**

*Prerequisite: SOC 1303, sophomore standing or permission of the department.*

An introduction to the broad field of social work, with an emphasis on social policy, community organization and social services. Attention is given to ideology, values, methods and the issue of professionalism. (SOCI 2361)

**3301 Qualitative Research Methods (3-3-0)**

*Prerequisite: SOC 1303, SOS 2303 and junior standing.*

Introduction to qualitative methods frequently used in social research including field based approaches such as participant observation, intensive interviewing and focus groups, and unobtrusive approaches such as content analysis and historical comparative analysis. Techniques and skills required for data collection and analysis and ethical, social and political dimensions of social science research.

**3303 Sociology of the Family (3-3-0)**

*Prerequisite: SOC 1303 and junior standing.*

The family as an institution; theoretical perspectives on the family and comparative analyses of alternative lifestyles in American society and other cultures are emphasized.

**3304 Minorities in America (3-3-0)**

*Prerequisite: SOC 1303 and junior standing.*

A survey of minorities and intergroup relations in past and present American society, with emphasis on theoretical perspectives and possible future trends.

**3306 Social Inequality (3-3-0)**

*Prerequisite: SOC 1303 and junior standing.*

US social and economic inequality, focusing on theory, analysis and data. Topics discussed include class system in the United States, differentials in economic levels, family, education, life-styles, class consciousness; racism and sexism as structures of inequality; the relationship between social class and political power and the future of inequality.

**3307 Sociology of Deviance (3-3-0)**

*Prerequisite: SOC 1303 and junior standing.*

A survey of deviant behavior in today's society, including the meaning of deviance from the standpoint of norms and society's reaction as well as theoretical approaches to explain deviance.

**3309 Sociology of Health and Illness (3-3-0)**

*Prerequisite: SOC 1303 and junior standing.*

A social history and cross-cultural analysis of the institution of medicine. Social organization of health care and the medical profession, social factors affecting health and illness, and the "medicalization" of social problems.

**3312 Aggression and Violence in Society (3-3-0)**

*Prerequisite: SOC 1303 and junior standing.*

An overview of violence trends in American society including youth, domestic, and other types of violent crime. Sociological and social psychological theories in cross-cultural perspectives will be applied to explain aggression and its manifestation in violence. Current social policy impact on violence and other prevention issues will also be discussed.

**3313 Drug Use and Society (3-3-0)**

*Prerequisite: SOC 1303 and junior standing.*

Employing perspectives of both sociology and social psychology, this course explores the use of legal and illegal substances, mainly with reference to the United States. Topics discussed will be: 1) the history of use and attitudes toward tobacco, alcohol, marijuana, cocaine, heroin, and other substances; 2) the political economy of drug production and distribution; 3) social psychological stages of substance use in-

volvement; 4) contemporary approaches to substance use prevention among adolescence; 5) socio-cultural causes of substance use.

**4301 Political Sociology (3-3-0)**

*Prerequisite: SOC 1303, 3 additional hours in sociology and junior standing.*

The impact of the political world on everyday life. The role of the individual as a participant or nonparticipant in political affairs; the effect of the political arena on other societal institutions; and practical politics as a part of individual and group survival strategies.

**4302 Sociocultural Analysis of Film (3-3-0)**

*Prerequisite: SOC 1303*

This course addresses the process through which American cultural values are encoded in popular movies, the rationalization and glossing of value conflicts, and the symbolic construction of the social world through film. Possible genres include westerns, police/detective, depression era comedies, and recent films illustrating the confusion and anxiety endemic to post-industrial post-modern society.

**4303 Sociology of Work (3-3-0)**

*Prerequisite: SOC 1303, 3 additional hours in sociology and junior standing.*

Work as a social phenomenon and its role in an individual's life. Why people work; challenges to the work ethic; the influence of technology on work; work places as structured social organizations; and the future of work.

**4305 Urban Sociology (3-3-0)**

*Prerequisite: SOC 1303, 3 additional hours in sociology and junior standing.*

A study of urban and suburban life in terms of social structure and organization, metropolitan development and formulation of public policy.

**4308 Conflict and Conflict Resolution (3-3-0)**

*Prerequisite: SOC 1303 and junior standing.*

Survey of conflict and conflict resolution, analyzing the micro and macro perspectives of conflict and its escalation and de-escalation. Topics include models of 3rd-party conflict resolution and associated skills and techniques, power and resources and related issues of identity and culture in understanding the roots and course of conflict.

**4309 World Migration (3-3-0)**

*Prerequisite: SOC 1303 and junior standing.*

Examines the diversity of origin and incorporation of immigrants in developed countries. Focus on types of immigrants and their processes of economic, political, social, cultural or psychological adaptation; present realities of contemporary global migration in the context of competing theories in the social sciences; and the immigration policies of western nations.

**4310 Mass Media (3-3-0)**

*Prerequisite: SOC 1303, three additional hours in SOC and junior standing.*

Focus on the nature of mass media in contemporary society and its impact on individuals and groups.

**4315 Social Theory (3-3-0)**

*Prerequisite: SOC 1303, 6 additional hours in sociology and junior standing.*

Explores the theoretical perspectives that social and behavioral scientists have developed over the past 200 years to analyze processes producing social order and social changes. Practical application of these perspectives to various social issues also will be emphasized.

**4390 Special Topics in Sociology (3-3-0)**

*Prerequisite: SOC 1303, 3 additional hours in sociology, junior standing, or permission of the instructor.*

Selected topics in sociology. Topics may vary from semester to semester, and the course may be repeated when topics vary.

## SOS (Social Sciences)

**2304 Research Methods in the Social Sciences (3-3-0)**

*Prerequisite: Three hours in anthropology, criminal justice, history, political science, psychology or sociology.*

Introduction to research methods in the social sciences. Basic principles and procedures in research design, data collection, report writing, and theory construction are presented. Emphasis on quantitative methodology and statistical analysis of data with computer software packages used by researchers in the social sciences.

**2308 Human Sexuality (3-3-0)**

*Prerequisite: Any one of the following: ANTH 2301, ANTH 2302, PSY 1303 or SOC 1303.*

Physiological, psychological and sociological factors in human sexuality. The human sexual system, sexual activity, today's sexual attitudes and behavior, alternate lifestyles and sexual inadequacies. (PSYC 2306 or SOCI 2306)

**3301 Social Gerontology (3-3-0)**

*Prerequisite: Any one of the following: ANTH 2301, ANTH 2302, PSY 1303 or SOC 1303.*

A multidisciplinary approach to the study of aging. In addition to examining and analyzing the physiological, psychological, and social aspects of aging, the impact of the elderly on current global demographics and the ethical dilemmas of our aging society are discussed.

**3304 Death and Dying (3-3-0)**

*Prerequisite: Three hours in psychology or sociology beyond ANTH 2301, ANTH 2302, PSY 1303 or SOC 1303 and junior standing.*

Various psychological, secular and religious attitudes, beliefs and practices toward death and dying. The stages of death, euthanasia, cultural and religious customs, and the psychological impact of death on the survivors.

**3312 Statistics in the Social Sciences (3-3-0)**

*Prerequisite: 3 hours in anthropology, criminal justice, history, political science, psychology or sociology and completion of MATH 1301 or MATH 1310.*

An introductory course presenting the computation and use of descriptive and inferential statistics in the social sciences. Students are taught how to calculate statistical measures by hand

and by using statistical software packages employed by researchers in the social sciences.

**3399 Directed Study in the Social Sciences**

*Prerequisite: Junior standing; approval of department chair and dean; cumulative GPA of 3.0 and GPA of at least 3.3 in the specific area of directed study.*

Intensive individual study under the guidance of a member of the faculty on selected topics in the social sciences.

**4301 Special Projects in the Social Sciences (3-3-0)**

*Prerequisite: Senior standing and department approval.*

Provides a culminating experience for the Social Sciences or Interdisciplinary Studies major. May include a senior thesis or another special project worked out between the student and the department.

**4302 The Study of the Future (3-3-0)**

*Prerequisite: Junior standing plus 6 hours in the behavioral sciences beyond ANTH 2301, ANTH 2302, PSY 1303 or SOC 1303.*

An introduction to the study of the future: the history of the futurist movement, future trends and issues, the impact of the future on the family, the individual and lifestyles. How future-oriented thinking can assist community organizations in forecasting and planning.

**4380 Field Experience in the Social Sciences**

*Prerequisites Sixty hours toward degree, 2.5 GPA, and approval of department chair.*

Work experience in public or private sector positions of relevance to the social sciences disciplines. Conferences with the instructor and other academic assignments are required. May be repeated for credit.

**4399 Directed Study in the Social Sciences**

*Prerequisite: Senior standing, approval of department chair and dean; cumulative GPA of at least 3.0 and a GPA of at least 3.3 in the specific area of the directed study.*

Intensive individual study under the guidance of a member of the faculty on selected topics in the social sciences.

**4601 Special Projects in the Social Sciences**

*Prerequisite: Senior standing and department approval.*

Provides a culminating experience for the Social Sciences or Interdisciplinary Studies major. May include a senior thesis or a special project worked out between the student and the department.

**4680 Field Experience in Social Sciences**

*Prerequisite: 60 hours toward degree, 2.5 GPA, and approval of department chair.*

Work experience in public or private sector positions of relevance to the social sciences disciplines. Conferences with the instructor and other academic assignments are required.

**SOSE (Social Sciences-Education)**

**3306 Culture of the Urban School (3-3-0)**

*Prerequisite: Introductory course in the social sciences.*

Urban culture as the dominant form of community life in con-

temporary schools: characteristics, unique properties, and problems.

**3320 Assessment and Evaluation of Children (3-3-0)**

*Prerequisite: PSY 1303.*

Principles and procedures for evaluating the cognitive, affective, and social learning of children.

**3321 Assessment to Promote Student Learning (3-3-2)**

*Prerequisite: Completion of Secondary Block I, READ 3309 and concurrent enrollment in SED 3302 and READ 4321.*

Principles and procedures for designing, implementing and interpreting assessment with particular attention to student motivation, instructional effectiveness and curricular decision making. (Secondary Block II course. Field experience required)

**3322 Assessment to Promote Student Learning (3-3-2)**

*Prerequisite: Completion of Secondary Block I, READ 3309 and concurrent enrollment in SED 3302 and READ 4321.*

Principles and procedures for designing, implementing and interpreting assessment with particular attention to student motivation, instructional effectiveness and curricular decision making. (Secondary Block II course. Field experience is not required)

**4303 Current Issues in Urban Teaching (3-3-2)**

*Prerequisite: Block II, passing score on Block II exam, or departmental approval.*

A field-based course in the Teacher Education program. Examines the characteristics of current social movements useful to the sociological study and interpretation of major social trends involving both social and cultural change in urban schools and society as a whole.

**SPAN (Spanish)**

**1305 Conversational Spanish (3-3-0)**

*Not open to any student with extensive background in Spanish.*

Emphasis on basic vocabulary, idiom and elementary grammatical structures. Elective credit only. Does not provide freshman foreign language credit. (SPAN 1300)

**1401 Elementary Spanish I (4-3-1)**

*Laboratory fee required: \$10.*

Instruction in understanding, speaking, reading and writing Spanish with emphasis on grammatical structures. Provides freshman foreign language credit. Should not be taken by native speakers of Spanish or students who have had two or more years of high school Spanish. (SPAN 1411)

**1402 Elementary Spanish II (4-3-1)**

*Prerequisite: SPAN 1401 or equivalent. Should not be taken by native speakers of Spanish or students who have had more than two years of high school Spanish.*

Continuation of SPAN 1401. (SPAN 1412)

**1601 Experiencing Spanish I (6-6-0)**

*Should not be taken by native speakers of Spanish or students who have had two or more years of high school Spanish or one semester of college Spanish.*

This course is designed to enable students to learn Spanish

language and culture more quickly with Accelerative Learning techniques. Students will master Elementary I material through role-playing, games, music, and movement with this methodology that addresses visual, audio, and kinesthetic learning modes. Note: This course covers the same material as SPAN 1401. Together with SPAN 1402 or 1602, it provides freshman foreign language credit for degrees requiring a foreign language.

**1602 Experiencing Spanish II (6-6-0)**

*Prerequisite: SPAN 1401, 1601 or equivalent. Should not be taken by native speakers of Spanish or students who have had three or more years of high school Spanish or two semesters of college Spanish.*

A continuation of SPAN 1601, this course is designed to enable students to learn Spanish language and culture more quickly with Accelerative Learning techniques. Students will master Elementary I material through role playing, games, music, and movement with this methodology that addresses visual, audio, and kinesthetic learning modes. NOTE: This course covers the same material as SPAN 1402. SPAN 1402 or SPAN 1602 complete freshman foreign language credit for degrees requiring one year of 8 hours of foreign language.

**2301 Intermediate Spanish I (3-3-0)**

*Prerequisite: SPAN 1402, 1602 or equivalent. Should not be taken by Latin Americans or Spaniards.*

Grammar review with continued emphasis on oral and listening skills and increased attention to writing and reading. (SPAN 2311)

**2302 Intermediate Spanish II (3-3-0)**

*Prerequisite: SPAN 2301 or equivalent. Should not be taken by Latin Americans or Spaniards.*

Continuation of SPAN 2301, with more emphasis on writing and reading skills. (SPAN 2312)

**2311 Spanish I for Native Speakers (3-3-0)**

*Prerequisite: Placement by examination.*

A course for college students educated in the United States whose first or home language is Spanish. Goals are to acquaint students with Spanish in its written form and to expand the students' overall knowledge of the language. Focus is on readings and vocabulary development, comprehension of grammatical structures, spelling, and improved spoken and written Spanish. (SPAN 2313)

**2312 Spanish II for Native Speakers (3-3-0)**

*Prerequisite: SPAN 2311.*

Continuation of SPAN 2311. (SPAN 2315)

**3301 Advanced Spanish Grammar and Composition (3-3-0)**

*Prerequisite: SPAN 2302 or placement by examination.*

A course in advanced Spanish grammar and composition with a focus on the mastery of syntax and spelling, and the improvement of writing skills through the study of various rhetorical modes and writing for special purposes.

**3302 Professional Writing (3-3-0)**

*Prerequisite: SPAN 3301.*

Focuses on developing and polishing the writing skills necessary to function in a professional setting. Taught in Spanish.

**3310 Spanish Conversation through Literature (3-3-0)**

*Prerequisite: SPAN 2302 or placement through examination .*

This course combines the study of literature in Spanish with the study of spoken Spanish. Students will read and discuss in Spanish selections of literature in various genres. They will learn to analyze while improving their spoken Spanish. For this reason, ample time will be devoted to students' discussion of assigned readings.

**3320 Professional Oral Communication (3-3-0)**

*Prerequisite: SPAN 3301 or permission of instructor.*

Study and practice of formal oral usage of Spanish. Development of communication skills in professional settings such as meetings with clients, employment interviews, conference presentations, debates, professional meetings. Ample opportunity for students to gain confidence and ability in the formal aspects of communication including the academic variety of Spanish. Taught in Spanish.

**3322 Translation (3-3-0)**

*Prerequisite: SPAN 3301.*

Focus on translation between English and Spanish. Special attention to the use of idiomatic expressions as well as to grammatical features. Taught in Spanish.

**3324 Neighbors and Trading Partners: People, Culture and Trade in Spanish America (3-3-0)**

*Prerequisite: SPAN 3301.*

Examines the people and culture of select countries with strong economies in Spanish America, and emphasis on understanding their importance as trading partners for the United States. Taught in Spanish.

**3340 Introduction to Hispanic Literature (3-3-0)**

*Prerequisite: SPAN 3301 or permission of instructor.*

Introduction to Hispanic literatures through a survey of representative texts from Spain and Spanish America. Basic techniques for literary interpretation through analysis of the major literary genres. Taught in Spanish.

**3342 Hispanic Literature in the U.S. (3-3-0)**

*Prerequisite: SPAN 3301 or permission of instructor.*

Analysis of 19th century to present day literature written in Spanish by authors of Spanish American origin in what is today the United States. Taught in Spanish.

**4310 Spanish Linguistics (3-3-0)**

*Prerequisite: SPAN 3301 or approval of chair.*

An introduction to Spanish linguistics. The course gives an overview of language, current linguistic theory, phonetics, phonology, morphology, syntax, history of the Spanish language, and types of variation. The course is taught primarily in Spanish.

**4390 Special Topics: Spanish (3-3-0)**

*Prerequisite: SPAN 3301.*

Special topics in Spanish language and literature, such as contemporary Latin American or Spanish literature, survey of Latin American or Spanish literature. With permission of department chair, may be repeated once for credit.

## STAT (Statistics)

**2300 Introduction to Statistics (3-3-0)**

*Prerequisite: A grade of C or better in MATH 1301 or placement by exam taken at UH-Downtown.*

Techniques for the collection, analysis and interpretation of numerical data. Probability, confidence intervals, hypothesis testing, estimation and special distributions. Special emphasis is placed on a variety of applications. Computer packages are used. This course may not be applied toward a major in the Computer and Mathematical Sciences department. (MATH 1342)

**3302 Probability and Statistics(3-3-0)**

*Prerequisite: A grade of C or better in MATH 2402.*

Probability and statistics useful for science and engineering applications. Topics include: probability distributions, statistical inference, estimation, testing of hypotheses, linear regression and analysis of variance. Standard statistical packages are used. Credit may not be earned for both STAT 3302 and STAT 3309.

**3309 Statistical Analysis for Business Applications I (3-3-0)**

*Prerequisite: MATH 1305 and MATH 1306.*

Basic concepts of statistics for business students are considered including descriptive statistics, probability concepts, Bayes theorem, random variables, probability distributions, expected values, point and interval estimations techniques and some hypothesis testing. Applications to a variety of business problems are stressed and computer statistical packages are used. Credit cannot be given for both STAT 3302 and STAT 3309.

**3310 Statistical Analysis for Business Applications II (3-3-0)**

*Prerequisite: STAT 3309 or department approval.*

Test of hypotheses, regression and correlation, introduction to analysis of variance, index numbers and introduction of time series and other special topics. Applications to a variety of business problems and use of computer statistical programs.

**3311 Statistical Analysis for Natural Science (3-3-0)**

*Prerequisite: MATH 1404 or MATH 1505.*

Basic concepts of statistics for natural science students are considered including collection of data, descriptive statistics, probability concepts, random variables, probability distributions, expected values, point and interval estimation techniques, hypothesis testing, bivariate data, linear regression, and analysis of variance. Natural science applications are stressed and computer statistical packages are used.

**4294 Senior Seminar (2-2-0)**

*(Cross-listed as CS 4294, MATH 4294. Credit may not be earned for more than one.)*

*Prerequisite: COMM 1304, ENG 3302, senior standing and de-*

*partment approval.*

An intense, structured seminar. Students are exposed to the world community as it relates to their major (involving a written and oral report on cultural issues as well as discussion of these topics); ethics is discussed as it relates to the subject. In addition, students prepare a written proposal for a senior project. Attendance at departmental colloquia is also required.

**4300 Statistical Quality Control (3-3-0)**

*Prerequisite: A grade of C or better in STAT 3302 or STAT 3309.*

Topics include x-bar and R charts, c charts, u charts, median charts, Pareto analysis, cause and effect analysis, process capability indexes and other statistical techniques.

**4303 Decision Mathematics (3-3-0)**

*Prerequisite: A grade of C or better in STAT 3302 or STAT 3310*

Applications of the most useful tools of decision mathematics. Topics are selected from probabilistic models, decision models, game theory, queuing theory, PERT/CPM, inventory methods, Bayesian inference and other relevant topics.

**4306 Mathematical Models and Computer Simulation (3-3-0)**

*(Cross-listed as CS 4306. Credit may not be earned for both.)*

*Prerequisite: MATH 3302 or STAT 3310, and CS 1408 or CS 1410.*

Quantitative modeling of industrial systems, computer simulation languages; and discussion of problems encountered in constructing simulation programs. This course may be used to fulfill the writing application course requirement with additional prerequisites including CS 4294 and department approval.

**4307 Time Series (3-3-0)**

*Prerequisite: A grade of C or better in STAT 3302 or STAT 3309.*

Topics include a study of auto-correlation and partial auto-correlation functions, multiplicative decomposition of a time series, construction and evolution of auto-regressive models, exponential smoothing procedures, classical regression analysis and Box-Jenkins methodology. Interpretation and computer analysis, using SAS or another appropriate package are emphasized.

**4309 Design and Analysis of Experiments (3-3-0)**

*Prerequisite: A grade of C or better in STAT 3302 or STAT 3310.*

Principles of design and analysis of experiments including randomized blocks, Latin, Greco-Latin and Youden squares, multiple comparisons and orthogonal contrasts. Introduction to factorial designs and split plots and use of computer statistical programs.

**4310 Applied Regression (3-3-0)**

*Prerequisite: A grade of C or better in STAT 3302 or STAT 3310.*

Basic theory and structure of regression, with applications in business, economics, science and behavioral science. Topics are selected from: simple linear regression, correlation, multiple linear and polynomial regression, R<sup>2</sup> and adjusted R<sup>2</sup>, significance tests multicollinearity, comparison with ANOVA, dummy variables and coding, stepwise regression, prediction and in-

ference in regression, analysis of covariance, interactions, time series, index numbers and forecasting. Emphasis on use of computer packages and interpretation of printouts.

**4311 Operations Research (3-3-0)**

*Prerequisite: A grade of C or better in MATH 1305 and MATH 3309, or MATH 2307.*

Applications of the most useful tools of operations research. Topics are selected from linear programming, the simplex method, the dual, the transportation model, networks, integer and dynamic programming and other topics.

**4395 Senior Project in Statistics**

*(Cross-listed as CS 4395, MATH 4395. Credit may not be earned for more than one.)*

*Prerequisite: COMM 1304, ENG 3302, grade of B or better in STAT 4294, 3.0 GPA, senior standing and departmental approval.*

Intensive study under the guidance of a member of the Computer and Mathematical Sciences faculty culminating in an individually researched and formally written report and oral presentation dealing with the applications of the statistical sciences in the student's area of specialization and related to one type of business or industry in the Houston area.

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**Pedrana, Angela Lopez** (2005) Assistant Professor of Education. BS, University of Wisconsin at Madison, 1981; BA, University of St. Thomas, 1989; MA, 1995; EdD, University of Houston, 2004.

**Pelaez, Rolando** (1986) Professor of Finance. BS, Louisiana State University, 1962; MA, 1964; PhD, University of Houston, 1973.

**Pelz, Mary Elizabeth** (1988) Associate Professor of Criminal Justice. BA, Stephen F. Austin State University, 1974; MA, 1976; PhD, Sam Houston State University, 1988.

**Penkar, Samuel H.** (1984) Associate Professor of Finance. M I M, American Graduate School of International Management, 1976. DBA, Mississippi State University, 1984.

**Phelps, David Gene** (1994) Lecturer in Accounting. BBA, Baylor University, 1962; MBA, Sam Houston State University, 1993.

**Phillips, Donna** (2005) Assistant Professor of Accounting. BS, McNeese State University, 1978; MBA, Henderson State University, 1983; PhD, Texas A&M University, 1991.

**Pincus, George** (1996) Professor of Engineering Technology. BS, Georgia Institute of Technology, 1959; MS, 1960; PhD, Cornell University, 1963; MBA, University of Houston, 1974; PE.

**Pointer, Lucille** (2002) Assistant Professor of Marketing. BS, Southern University, 1973; MBA, University of Wisconsin, 1974; PhD, Texas A&M University, 2000.

**Preuss, Gene** (2004) Assistant Professor of History. BA, Southwest Texas State University, 1990; MA, 1993; PhD, Texas Tech University, 2004.

**Rangel, Nicolas, Jr.** (2004) Instructor of Communication Studies. BA, California State University, Long Beach, 1996; MA, 2002.

**Rebhun, Herbert F.** (1977) Professor of Computer Information Systems. BBA, University of Pittsburgh, 1955; ML, 1956; PhD, Florida State University, 1974.

**Rhatigan, Deborah** (2005) Assistant Professor of Psychology. BA, The College of New Jersey, 1991; MS, Virginia Polytechnic Institute and State University, 1998; PhD, 2002.

**Robbins, Ruth R.** (1980) Professor of Computer Information Systems. BBA, Texas Southern University, 1971; MBA, University of Houston, 1974; EdD, 1986.

**Rodriguez, Dennis M.** (1976) Professor of Mathematical Sciences. BA, University of South Florida, 1965; MA, University of California at Riverside, 1966; PhD, 1969.

**Rosenthal-Simmons, Anna** (1991) Lecturer in Mathematical Sciences. BS, University of Houston, 1987; MS, 1995; MBA, 1990; MS, Texas A&M University, 1988.

**Roubicek, Henry L.** (1983) Professor of Communication Studies. BA, The Ohio State University, 1974; MA, Purdue University, 1976; EdD, University of Maryland, 1983.

**Rubin-Trimble, Carolyn** (1999) Lecturer in Reading. BA, University of Houston, 1970; MEd, 1991; PhD, 2001.

**Ruthstrom, Carl R.** (1990) Associate Professor of Management. BS, West Texas State University, 1965; MS, University of Northern Colorado, 1979; PhD, University of Texas at Austin, 1986. CPM.

**Ryden, David Beck** (2001) Assistant Professor of History. BA, Connecticut College, 1990; MA, University of Delaware, 1993; PhD, University of Minnesota, 1999.

**Santos, Adolfo** (1997) Assistant Professor of Political Science. BGS, University of Houston-Downtown, 1990; PhD, University of Houston, 1998.

**Schmertz, Johanna** (2000) Assistant Professor of English. BA, Carnegie-Mellon University, 1983; MA, State University of New York at Buffalo, 1990; PhD, Texas A&M University-Commerce, 2001.

**Serrett, Randy K.** (1999) Associate Professor of Accounting. BS, Louisiana State University, 1973; MS, University of Houston, 1983; PhD, 1986; CPA.

**Shea, Dan** (2005) Assistant Professor of English. BS, Frostburg State University, 1996; MA, Kansas State University, 1999; PhD, University of Oregon, 2005.

**Sheinberg, Edward R.** (1978) Assistant Professor of Engineering Technology. BS, Lamar University, 1968; ME, 1968; MME, University of Houston, 1971.

**Shelley, Deborah B.** (1993) Associate Professor of Communication Studies. BA, University of North Carolina at Chapel Hill, 1972; MA, San Francisco State University, 1974; PhD, Louisiana State University, 1976.

**Shelton, Margaret L.** (1989) Associate Professor of Accounting. BA, Rice University, 1971; MBA, University of Houston, 1980; PhD, 1986; CPA.

**Shiple, Margaret F.** (1987) Professor of Management. BS, Salisbury State College, 1969; MSIE, University of Pittsburgh, 1980; PhD, 1986.

**Sikka, Anjoo** (1994) Associate Professor of Education. BA, Maharaja Sayajirao University, India, 1983; MA, 1985; PhD, Mississippi State University, 1991.

**Simeonov, Plamen** (1999) Associate Professor of Mathematical Sciences. BS, Sofia University, 1990; MS, 1992; PhD, University of South Florida, 1997.

**Simms, John** (2004) Instructor of Accounting. BA, University of Houston, 1997; MBA, 1999.

**Sirisaengtaksin, Ongard** (1986) Professor of Mathematical Sciences. BSc, Chulalongkorn University, Thailand, 1976; ME, Lamar University, 1979; MS, 1981; PhD, University of Texas at Arlington, 1986.

**Slough, Scott** (2000) Associate Professor of Biology and Chemistry. BS, Stephen F. Austin State University, 1982; MEd, Sam Houston State University, 1992; MS, 1994; EdD, University of Houston, 1998.

**Smith, Charles** (1987) Professor of Finance. BS, McNeese State University, 1974; MBA, University of New Orleans, 1975; PhD, Texas A&M University, 1984.

**Smith, Charlotte** (2000) Lecturer in English. BS, University of Houston, 1986; MA, University of Houston-Clear Lake, 1988.

**Snell, Clete J.** (2005) Associate Professor of Criminal Justice. BS, Montana State University, 1990; MS, University of South Carolina, 1994; PhD, Sam Houston State University, 1999.

**Solomon, Frankie** (1993) Lecturer in Mathematical Sciences. BA, Grambling State University, 1971; MS, Texas Southern University, 1989.

**Spears, Larry G.** (1976) Professor of Chemistry. BS, University of Southwestern Louisiana, 1961; MS, 1963; PhD, University of Texas at Austin, 1966.

**Spilger, Ursula** (1990) Associate Professor of Business Law. BA, University of California at Berkeley, 1962; JD, University of Idaho, 1974; MBA, Boise State University, 1983; LL.M., University of Houston, 1991.

**Stading, Gary L.** (2001) Assistant Professor of Management. BS, University of Illinois, 1984; MBA, Miami University, 1988; PhD, Texas A&M University, 1999.

**Stanberry, Kurt** (1996) Associate Professor of Business Law. BBA, Yale University, 1972; MBA, Temple University, 1974; JD, University of Houston, 1977.

**Strain, Charles R.** (1994) Associate Professor of Marketing. BBA, University of Mississippi, 1974; MBA, University of Southern Mississippi, 1982; DBA, Mississippi State University, 1994.

**Strange, Joe C.** (2004) Assistant Professor of English. BS, University of Mississippi, 1975; MA, University of Arkansas Little Rock, 1991; EdD, 1996.

**Sullivan, M. Nell** (1996) Associate Professor of English. BA, Vanderbilt University, 1986; MA, Rice University, 1989; PhD, 1995.

**Supina, Joyce** (2004) Lecturer in Management. BA, University of Maryland, 1970; MA, Fairleigh Dickinson University, 1974; MA, University of Houston, 1987; PhD, University of Texas at Austin, 1993.

**Tecarro, Edwin** (2004) Assistant Professor of Mathematical Sciences. BS, University of the Philippines, 1983; MS, Southern Methodist University, 1991; PhD, University of Houston, 2000.

**Thacker-Kumar, Leena** (1993) Associate Professor of Political Science. BA, Scottish Church College, 1982; MA, Miami University, 1988; PhD, 1993.

**Thielemann, Jane** (1991) Associate Professor of Education. BS, University of Houston-Clear Lake, 1978; MA, University of Houston, 1991; EdD, 1999.

**Thomas, Lorenzo** (1987) Professor of English. BA, Queens College, City University of New York, 1967.

**Thomas, Tammis** (1995) Associate Professor of English. BA, University of Texas at Austin, 1984; MA, State University of New York at Buffalo, 1989; PhD, 1995.

**Tokic, Damir** (2002) Assistant Professor of Finance. AA, Odessa College, 1994; BBA, Sam Houston State University, 1995; MBA, 1996; PhD, University of Texas-Pan American, 2002.

**Turner, Stephanie** (2003) Assistant Professor of English. BA, Ball State University, 1982; MA, 1985; PhD, Purdue University, 2002.

**Turski, Jacek** (1990) Professor of Mathematical Sciences. BS University of Warsaw, Poland, 1976; MS, McGill University, 1982; PhD, 1986.

**Usnick, Lee** (2003) Assistant Professor of Business Law. BA, Connecticut College, 1975; MSSW, University of Texas at Arlington, 1978; MA, Webster University, 1981; JD, University of Houston, 1984.

**Uzman, Akif J.** (1997) Associate Professor of Biochemistry and Biology. BS, University of Michigan, 1975; MS, 1976; PhD, University of California-Berkeley, 1983.

**Van Horn, Leigh** (2000) Assistant Professor of Education. BS, University of Houston, 1992; MS, University of Houston-Clear Lake, 1995; EdD, University of Houston, 2000.

**Verma, Rahul** (2004) Assistant Professor of Finance. BA, Ranchi University, 1992; MBA, Institute for Technology and Management, 1995; PhD, University of Texas-Pan American, 2004.

**Villarreal, Beatrice** (2001) Assistant Professor of Education. BA, University of St. Thomas, 1972; MEd, Stephen F. Austin State University, 1977; PhD, The Pennsylvania State University, 1982.

**Vobach, Carol** (1969) Associate Professor of Mathematical Sciences. BA, Marymount College, 1962; MA, University of North Carolina at Chapel Hill, 1965; EdD, University of Houston, 1984.

**Wadhwa, Darshan L.** (1984) Professor of Accounting. BS, KGK College, Moradabad, India, 1964; MS, Roorkees University, Roorkees, India, 1967; MBA, Louisiana Tech University, 1972; DBA, 1988; CPA.

**Walden, Elizabeth** (2002) Assistant Professor of Psychology. BS, Augusta College, 1972; MS, 1979; PhD, University of Georgia, 1984.

**Walker, James** (2003) Instructor of English. BA, University of California, Riverside, 1991; MA, University of Colorado at Boulder, 1997.

**Waller, William A.** (1983) Associate Professor of Mathematical Sciences. AA, Eastfield College, 1978; BS, North Texas State University, 1981; MS, 1983; PhD, University of Houston, 1989.

**Walsh, Robert T.** (1976) Assistant Professor of Criminal Justice. BS, Michigan State University, 1970; MS, Eastern Kentucky University, 1974.

**Wang, Hsiao-Ming** (2001) Assistant Professor of Criminal Justice. BC, Fen-China University, 1977; MBA, University of St. Thomas, 1992; PhD, Sam Houston State University, 1998.

**Wanguri, Deloris McGee** (1984) Professor of Communication Studies. BA, University of Houston, 1973; MA, 1975; PhD, University of Texas at Austin, 1984.

**Webb, John** (2001) Assistant Professor of Psychology. BA, Mary Hardin-Baylor College, 1975; MA, St. Mary's University, 1978; MA, University of Houston, 1983; PhD, 1985.

**Williams, Frank P.** (2003) Visiting Professor of Criminal Justice. BS, Florida State University, 1968; MS, 1973; PhD, 1976.

**Williams, Marvin J.** (1988) Associate Professor of Accounting. BBA, University of Houston, 1980; MBA, 1982; JD, 1986; CPA, CMA.

**Williams, Patrick S.** (1990) Associate Professor of Psychology. BS, Michigan State University, 1971; MEd, Northeastern University, 1974; PhD, Texas Tech University, 1987.

**Wilson, Robert G.** (1991) Director of the UHD Civic Jazz Orchestra and Lecturer in Music. BA, Sam Houston State University, 1969; MA, 1970.

**Woods, Molly R.** (1961) Professor of Administrative Services Management. BA, Sam Houston State University, 1959; MEd, 1961; EdD, University of Houston, 1985.

**Woods-Stellman, Donna** (1997) Assistant Professor of Education. BA, Louisiana Tech University, 1975; MEd, Louisiana State University, 1988; EdD, Oklahoma State University, 1992.

**Xie, Shishen** (1990) Professor of Mathematical Sciences. BS, East China Normal University, China, 1982; MS, Texas Tech University, 1987; PhD, 1990.

**Yoon, Jeong-Mi** (1999) Associate Professor of Mathematical Sciences. BS, Seoul National University, 1981; BS, 1984; MS, 1986; MS, University of California at Los Angeles, 1991; PhD, 1999.

**Yuan, Shengli** (2004) Assistant Professor of Mathematical Sciences. BS, Fudan University-Shanghai, 1991; MS, University of Missouri-Columbia, 1995; PhD, University of Texas at Dallas, 2004.

**Zafiris, Vasilis** (1999) Assistant Professor of Mathematical Sciences. BS, Mississippi State University, 1984; MS, 1987; PhD, University of Houston, 1996.

## Emeritus Faculty

**Bartholomew, Barbara G.** (1981) Associate Professor Emerita of English.

**Eckles, Robert** (1984) Professor Emeritus of Marketing.

**Fefer, Jean A.** (1981) Associate Professor Emeritus of Chemistry.

**Franks, Nicholas** (1979) Assistant Professor Emeritus of English.

**Freeman, Marjorie S.** (1961) Assistant Professor Emerita of Mathematics.

**Hebert, Mary Margaret** (1977) Associate Professor Emerita of Administrative Services Management.

**Hoffmann-Pinther, Peter H.** (1981) Professor Emeritus of Physics.

**Levy, Sylvia S.** (1958) Associate Professor Emerita of English and Philosophy.

**McNeill, I. Eugene** (1984) Professor Emeritus of Accounting.

**Robinson, W. Clyde** (1982) Associate Professor Emeritus of Business Law.

**Rooney, Walter** (1976) Associate Professor Emeritus of Management.

**Sherman, Ruth** (1975) Professor Emerita of Biology.

**Small, Jo Ann** (1975) Associate Professor Emerita of Psychology.

**Tinkler, James C.** (1983) Professor Emeritus of Petroleum Land Management.

**Tyson, Martha H.** (1968) Associate Professor Emerita of Psychology.

**Umland, Jean B.** (1981) Associate Professor Emerita of Chemistry.

**Wilkinson, Edward S., Sr.** (1969) Associate Professor Emeritus of Purchasing.

**Williams, Raymond J.** (1963) Assistant Professor Emeritus of History.

**Wright, Ray G.** (1966) Professor Emeritus of Philosophy.

## Faculty Awards

### Award for Excellence in Teaching

1982	R. Bowen Loftin, Natural Sciences
1983	Nancy T. Rich, Applied Mathematical Sciences
1984	John H. Hummel, Behavioral Sciences
1985	Shannon Doyle, Social Sciences
1986	Hank Roubicek, Arts and Humanities
1987	James C. Tinkler, Business Management and Administrative Services
1988	Susan K. Ahern, English
1989	Philip Castille, English
1990	Merrilee Cunningham, English
1990	Shohreh Hashemi, Finance, Accounting and Computer Information Systems
1991	Ray Wright, Social Sciences
1992	Jeffrey Flosi, Natural Sciences
1993	André de Korvin, Computer and Mathematical Sciences
1994	Jean Umland, Natural Sciences
1995	Dennis Rodriguez, Computer and Mathematical Sciences
1996	Linda Vaden-Goad, Social Sciences
1997	Byron Christmas, Natural Sciences
1998	Elias Deeba, Computer and Mathematical Sciences
1999	Lisa Waldner, Social Sciences
2000	Madeline Johnson, Management, Marketing, and Business Administration
2001	Tyra L. Montgomery, Natural Sciences
2002	Steven J. Maranville, Management, Marketing and Business Administration
2003	Joan S. Abramowitz, Natural Sciences
2004	Anisul Islam, Finance, Accounting and Computer Information Systems
2005	Jane Creighton, English

### Award for Excellence in Service

1982	Shannon Doyle, Social Sciences
1982	Hakumat Israni, Engineering Technology
1983	Gail S.M. Evans, Business Management and Administrative Services
1983	James David Fairbanks, Social Sciences
1984	R. Bowen Loftin, Natural Sciences
1984	Herbert F. Rebhun, Finance, Accounting and Computer Information Systems
1985	R. Bowen Loftin, Natural Sciences
1986	William E. Brigman, Social Sciences
1987	Molly R. Woods, Business Management and Administrative Services
1988	Thomas Lyttle, Arts and Humanities
1989	Ruth Sherman, Natural Sciences
1990	Robert Rhea, Engineering Technology
1991	Dan Jones, English
1992	Shohreh Hashemi, Finance, Accounting and Computer Information Systems
1993	Madeline Johnson, Business Management and Administrative Services
1994	Herbert Rebhun, Finance, Accounting and Computer Information Systems
1995	Carl Ruthstrom, Business Management and Administrative Services
1996	Margaret Shelton, Finance, Accounting and Computer Information Services
1997	Jeff Flosi, Natural Sciences
1998	Linda Vaden-Goad, Social Sciences
1999	Peter Hoffmann-Pinther, Natural Sciences
2000	Anjoo Sikka, Urban Education
2001	Elias Deeba, Computer and Mathematical Sciences
2002	Anisul Islam, Finance, Accounting and Computer Information Systems

- 2002 Johnny R. Leavins, Finance, Accounting and Computer Information Systems
- 2003 Poonam Gulati, Natural Sciences
- 2004 Larry G. Spears, Natural Sciences
- 2005 M. Nell Sullivan, English

### Award for Excellence in Scholarly and Professional Activity

- 1989 Elias Deeba, Computer and Mathematical Sciences
- 1989 Robert Fisher, Social Sciences
- 1990 André de Korvin, Computer and Mathematical Sciences
- 1991 Glen Merrill, Natural Sciences
- 1992 André de Korvin, Computer and Mathematical Sciences
- 1993 Lorenzo Thomas, English
- 1994 Kathleen Haney, Social Sciences
- 1995 Elias Deeba, Computer and Mathematical Sciences
- 1995 Orapin Duangploy, Finance, Accounting and Computer Information Systems
- 1996 Thomas Lyttle, Arts and Humanities
- 1997 Margaret Shipley, Business Management and Administrative Services
- 1998 Anisul Islam, Finance, Accounting and Computer Information Systems
- 1999 André de Korvin, Computer and Mathematical Sciences
- 1999 Chenyi Hu, Computer and Mathematical Sciences
- 2000 James McCaffrey, Social Sciences
- 2000 Khursheed Omer, Finance, Accounting and Computer Information Systems
- 2001 Lorenzo Thomas, English
- 2002 Orapin Duangploy, Finance, Accounting and Computer Information Systems
- 2003 Floyd E. Newsum, Arts and Humanities
- 2003 Shishen Xie, Computer and Mathematical Sciences
- 2004 Sandra L. Dahlberg, English
- 2004 Janice Nath, Urban Education

- 2005 Kathryn Laity, English

### Elias Deeba Award

For faculty who have won the awards for excellence in teaching, service, and scholarly and professional activity

- 2005 Anisul Islam, Finance, Accounting and Computer Information Systems

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