University of Houston-Downtown

2001–2002 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 deans 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, and information on crime statistics may be found in the Campus Police Office.

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.

BLANK PAGE

Table of Contents

Excellence. Opportunity, Diversity. These three words describe the advantages you'll find at UH-Downtown.

At UHD, you'll find *excellence* in our high-quality academic programs, in the teaching skills of our dedicated faculty and in the service of our caring staff. You'll find *opportunity* through innovative class schedules and programs that are designed to help students succeed. And you'll find *diversity* all around you - represented by students from every background and life situation.

UHD is a unique institution. We are a public, four-year university beginning limited expansion into graduate programs. We now have master's degrees in two academic areas with outstanding track records - criminal justice and urban teacher education.

UHD's dedicated faculty ensure that our wide variety of academic degree programs are up-to-date and in-depth to help you prepare for the professional demands of the changing workplace. In addition, our classes are small, so you can benefit from more individual attention from professors.

Innovative course options offer more ways to get a high-quality education. UHD offers classes online, on videotape, and via live interactive television in a number of locations, including the UH System at Sugar Land, the UH System at Cinco Ranch, the University Center in the Woodlands, and San Jacinto College North. The Weekend College and evening classes put a degree within reach for students with full-time day jobs.

UHD's rich student diversity offers a tremendous advantage to individuals entering the multicultural workplace of the 21st century. Our students are diverse in every sense of the word—by age, ethnicity, culture, and life circumstances.

Because UHD is located in the heart of the city, our nearly 9,000 students can study, then take a break for recreation and entertainment in exciting downtown Houston.

So, come find excellence, opportunity and diversity at UHD, and find out how you can "Get a Life!"

Max Castillo, EdD
President

Fall 2001

August 22 ....Regular classes begin
August 25 ....Saturday classes begin
September 1-3 ....Labor Day Holidays
November 21-24..Thanksgiving Holidays
December 3 ....Last class day for regular classes
December 4–5..Reading Days
December 6-15..Finals
December 15 ....Commencement

Spring 2002

January 14 ....Classes begin
January 21 ....Martin Luther King, Jr. Day Holiday
March 4-9...Spring Holidays
April 29..Last class day for regular classes
April 30-May 1 ....Reading Days
May 2-8...Finals
May 11..Commencement

Summer 2002 Session 1

May 27 ....Memorial Day Holiday
May 28 ....Classes begin
June 28 ....Last class day
June 29..Finals

Summer 2002 Nine Weeks

May 28 ....Classes begin
July 4...Independence Day Holiday
July 17 ....Last class day
July 18..Finals

Summer 2002 Session II

July 8 ....Classes begin
August 6..Last class day
August 7 ....Finals

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.

About UH-Downtown

The university's dynamic campus is located in downtown Houston, easily accessed from all major freeways.

At UHD, the emphasis is on excellence in teaching and student success.

With dedicated faculty, small classes and innovative course options, UHD offers excellent educational opportunities through a wide variety of bachelor's degree programs in three colleges: Business, Humanities and Social Sciences, and Sciences and Technology.

In addition, UHD now offers two master's degrees—the M.S. in Criminal Justice and the M.A. in Teaching. As specific academic needs are identified, UHD will expand its service to the community by offering additional undergraduate and graduate degrees.

UHD is nationally recognized for its outstanding academic opportunities, including its accredited programs and productive community partnerships. One result of UHD's successful partnerships is the total amount of scholarships awarded to UHD students each year. More than $1.5 million in scholarships and grants was awarded to deserving students in the last academic year.

Flexible schedules and class options–such as live interactive television, videotape and computer modem–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, the University Center in The Woodlands, and San Jacinto College North. The Weekend College and evening classes put a degree within reach for students with full-time jobs.

UHD prepares individuals to thrive in the multicultural workplace of the 21st century through interaction with its student population, which is diverse in every sense of the word–in ethnicity, age, financial background and life situation. U.S. News and World Report names UHD one of the nation's most ethnically diverse institutions of higher learning.

UHD's "vertical campus" is multi-storied, offering all classes under one roof. The campus is especially accessible to students with physical disabilities, with elevators connecting every floor.

Students can easily find comfortable areas to gather with friends and classmates, and they have ready access to sports and recreation facilities. The adjacent Jesse H. Jones Student Life Center includes gymnasiums, a dance studio and a fitness center.

History and Future on the Bayou

UHD is creating an exciting future based on a fascinating past.

It all 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.

UHD's One Main Building was constructed in 1929 on the banks of White Oak and Buffalo Bayous as the Merchants and Manufacturers Building, which is listed on the National Register of Historic Places and by the Texas Historical Commission.

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

Within the last few years, the university's facility grew with the addition of the Academic Building, comprising more than 40 classrooms and lecture halls, the Technology Teaching and Learning Center, the Wilhelmina Cullen Robertson Auditorium and a food court, and the Student Life Center.

The renovated third floor of the One Main Building offers a "one-stop" student service center, UHD's most recent effort to more efficiently and effectively serve students. Students will be able to get information about UHD, register for classes, seek financial aid and scholarships, meet with advisors, and pay fees in one area.

Students may also go online to handle some of the "business" of going to college, by accessing student e-services on UHD's web-

site, www.uhd.edu. Through e-services, students can update personalized information such as address and phone number, check their payment status, look at their own class schedules and grades, check admission and enrollment status and more.

UHD is technologically up-to-date, with state-of-the-art computer labs located throughout the campus.

In the near future, UHD will seek to expand its space, to accommodate a growing student body. Enrollment in the fall semester of 2000 was approximately 8,900.

Campus Safety and Security

Information on campus safety and security, including three-year crime statistics, is provided by the UH-Downtown Police Department, on the UHD website at www.dt.uh.edu/pd/. Also available is 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 to award bachelor's and master's degrees. (1866 Southern Lane, Decatur, Georgia, 30033-4097; telephone number: 404-679-4501)

The bachelor of business administration programs of the College of Business are accredited by AACSB International–The Association to Advance Collegiate Schools of Business. Accreditation documentation is available in the Office of the Dean of Business (1009-North).

The Engineering Technology majors in Electrical/Electronics Design, Structural Analysis and Design, and Process and Piping Design are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology. Accreditation documentation for these programs is available in the Office of the Dean of Sciences and Technology (723-North).

Undergraduate Admission Policies and Procedures

Applications can be submitted or requested through the Office of Enrollment Services at:

> **Office of Enrollment Services, Rm 350S**
>
> **University of Houston-Downtown**
>
> **Houston, Texas 77002-1014**
>
> **713-221-8522**

Application deadlines and enrollment procedures are printed in the *Class Schedule* each semester. Students are encouraged to apply on-line via the internet at www.applytexas.org

New and Transfer Student Admission General Information

◆ Application. All new students must file an application for admission with **Enrollment Services** and pay the nonrefundable $10 application fee by the application deadline. The application fee for international students is $60. The application and fee is valid for a period of one year.

◆ Citizenship Status Documents. International students and U.S. citizens born outside the United States must provide original, valid immigration documents (I-551, I-688, I-94, passport or U.S. citizenship certificate).

◆ Official Transcripts. 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.

◆ College Transcript Requirements. Students with prior college experience must submit official transcripts from all previously attended colleges regardless of whether college credit was earned.

◆ Texas Academic Skills Program (TASP) Requirements. New and transfer students must take the TASP or a state-approved alternative test before they will be allowed to enroll for college-level courses.

◆ All students must satisfy all TASP obligations by the time they have earned 60 hours of college level credit, or they will not be permitted to take upper-level courses. See page 4 for more information about TASP.

◆ Other Requirements. New freshmen are expected to attend an orientation session and will be given information about orientation upon acceptance to the university. It is recommended that transfer students attend an orientation session as well.

Freshman Admission

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

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.

All new freshmen are expected to attend an orientation program.

Transfer Student Admission

Transfer applicants must file an application for admission, pay the nonrefundable application fee, and have official copies of transcripts from all prior colleges mailed directly from the issuing institution to the University of Houston-Downtown by the applica-

tion 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 a record of their TASP status. See page 4 for more information on the TASP 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 **Enrollment Services**, 713-221-8522.

Transfer students are also referred to page 81 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.

Readmission for Former Students

Students who have attended UH-Downtown but who were not enrolled during the preceding long semester must be readmitted to the university. Check with Enrollment Services to be certain that there are no holds on your record.

◆ **Reapplication.** Complete a readmission form in **Enrollment Services**.

◆ **Transcripts.** Arrange to have official transcripts from all colleges and universities attended since last enrolled at UH-Downtown sent to **Enrollment Services** by the application deadline.

International Student Admission

Individuals who hold nonimmigrant visas are classified as international students. International students seeking admission to the University of Houston-Downtown must apply through **Enrollment Services**. 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 **Enrollment Services** and pay the nonrefundable $60 application fee by the application deadline. The application and fee will be valid for a period of one year.

◆ **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 **Enrollment Services** at UH-Downtown prior to enrollment.

◆ **Affidavit of Support.** An Affidavit of Support must be submitted showing that a sponsor(s) 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 U.S. 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 TOEFL (Test of English as a Foreign Language) score of 550* or higher 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 policy must provide for a minimum of $50,000 health, minimum of $7,500 repatriation or life insurance and a minimum of $10,000 for medical evacuation. This insurance is provided through the university at a low cost.** If insurance is purchased elsewhere, a copy of the policy in English with U.S. dollars as the monetary unit must be provided to Student Health Services prior to registration each semester. Otherwise, students will be charged for health insurance as a part of their registration fees.

550 for the paper version or 213 for the computer-based version.

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. 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.

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
  U.S. History Studies Since Reconstruction
  U.S. Government (½ credit)

Economics ½ credit
  Economics

Physical Education 1½ credits
  Foundations of Personal Fitness (½ credit)
  Health Education (½ credit)
  Health Science Technology

Languages Other Than English 2 credits or 3* credits
  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 3 ½ credits or *2 ½ credits

Electives 1 credit

*One credit is equivalent to a one-year course

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

Required Testing—Undergraduate Programs

Texas Academic Skills Program (TASP)

TASP is a statewide testing and instructional program mandated by Texas law to ensure that students enrolled in Texas public colleges and universities have the basic academic skills needed to be successful in college-level work.

Who must take the TASP test?
All new and transfer students who do not qualify for an exemption must take the TASP test. Any student enrolling in the teacher certification program is required to take and pass the TASP test as a condition of certification, regardless of any other exemption.

Who is exempt from TASP?
The following students do not have to take the TASP test unless they are seeking teacher certification:

◆ Students with at least three hours of college-level credit earned prior to the fall of 1989

◆ Blind and/or deaf students who received at least three hours of college-level credit prior to the fall of 1995

◆ Summer transient students enrolled at an out-of-state or private institution during the previous spring semester (must provide appropriate documentation and sign a request for exemption form)

◆ Students who meet qualifying standards on the ACT, SAT, or TAAS tests:

  ACT composite score of 23 or higher with English and math part scores equal to or greater than 19

  SAT combined scores of 1070 or higher with verbal and math part scores equal to or greater than 500

  TAAS scale scores of TLI X-86 or higher in math, TLI X-89 or higher in reading, and 1770 or higher in writing.

Notes:
ACT and SAT scores may be no more than five years old, and exit-level TAAS scores may be no more than three years old.

Qualifying scores must be achieved at a single administration of the ACT or SAT, or the first attempt of the TAAS. Scores from separate test attempts cannot be combined to qualify for an exemption.

When must students take the TASP test?
All students entering a Texas public college or university must take the TASP test before they will be allowed to register for college-level courses.

I've never taken TASP. What should I do?
Entering students to UH-Downtown who have never taken the TASP test are encouraged to take the WritePlacer/AccuPlacer instead of TASP. These tests, which are given at UH-Downtown, count as the first TASP attempt and are also used as placement tests for math and English. They are given on a regular basis. Students who do not pass WritePlacer/AccuPlacer must take the TASP on all subsequent attempts.

The Testing Center administers WritePlacer/AccuPlacer, TASP and Quick TASP. Contact the Testing Center, Room 370 South, (713) 221-8027, for information about times, places, and cost.

May students enroll if they have not taken the TASP test?
Students who do not take the TASP test or an approved alternative test are not eligible to enroll in any courses other than developmental or other precollegiate courses until the tests have been taken and official score reports have been received. Students

enrolling in violation of this regulation will be administratively withdrawn from all college-level courses.

What happens if a student does not pass the TASP test?
Students who do not pass all three sections (reading, mathematics and writing) of the TASP test must participate continuously in a program of developmental education in the subject area(s) not passed. TASP-obligated students must enroll in these classes every semester until they pass the TASP, and they must retake the TASP test every semester after completing the required developmental courses. Students may be allowed to take other courses while participating in developmental education with the approval of an academic advisor.

Students not passing all sections of the TASP test by the completion of 60 credit hours may not enroll in any junior or senior-level course until all sections of the TASP test have been passed. Students enrolling in violation of this regulation will be administratively withdrawn from all upper-level courses.

Are there other ways to satisfy the TASP obligation?
Students who pass required developmental course(s) but who fail the TASP test may, upon the approval of an advisor, proceed into college-level courses. They may satisfy their TASP obligation by making a B or better in approved courses. See an advisor for more information.

Where can students get additional information?
Additional information concerning TASP may be obtained from the TASP Test Registration Bulletin available in the Information Center, Room 330-South, and in Testing Services, Room 370-South.

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 foundation courses, students are required to enroll, and to continue to enroll, for 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 probation or suspension, or may be subject to other academic sanctions.

Post baccalaureate applicants must meet all undergraduate transfer admission requirements, except that they must submit only an official 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 managing the graduate degree to be eligible to be enrolled in the courses.

Graduate Admission Policies and Procedures

General Information:

◆ 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 U.S. Department of Education and meet the minimum admissions criteria of the graduate program for which they wish to pursue a degree.

◆ Applicants must file an application for admission with Enrollment Services and pay the non-refundable $25 application fee by the application deadline. The application fee for international students is $60. The application and fee is valid for a period of one year.

◆ Applications can be requested and submitted through the Office of Enrollment Services at:

>Office of Enrollment Services, Rm 350S
>University of Houston-Downtown
>Houston, Texas 77002-1014
>713-221-8522

Application deadlines and enrollment procedures are printed in the Class Schedule each semester.

◆ Applicants must submit 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.

◆ An applicant must submit GRE/GMAT or any other standardized test scores or other evidence of preparation and likelihood of success as required by the program the applicant wishes to enter.

◆ An applicant must be accepted into a specific graduate program at UHD to be admitted to the university as a graduate student.

◆ 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 U.S. institution.

- Individuals who hold nonimmigrant 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 U.S. citizens born outside the United States must provide original, valid immigration documents (I-551, I688, I-94, passport or U.S. 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 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.

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 increase or decrease 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 resulting from post audits and corrections, including all fees and waivers; i.e., registration assessing errors, changing from on-campus to off-campus courses or courses delivered via tape, television or computer modem on-line, etc. 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 Learning Fees

Students enrolled in courses at off-campus sites or in courses delivered via tape, television or computer modem on-line may be subject to a distance learning fee depending on the mode of delivery.

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 **Enrollment Services**.

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 **Enrollment Services** by the official Day of Record found in the *Class Schedule* University Calendar for the semester to be considered.

Tuition for Excessive Undergraduate Hours

The Texas legislature has passed a law related to the tuition charged for certain excess credit hours of undergraduate students attending institutions of higher education. Beginning fall 1999, 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 **Enrollment Services**.

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 **Enrollment Services** by the Official Day of Record for the appropriate term. For further details regarding auditing, contact **Enrollment Services** and Records.

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.

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 which is not requested for refund 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) $10
Application for international admission (nonrefundable) $60
Laboratory (per laboratory class) .... Varies from $10 to $30
Telecourse $30
Advanced standing exam $15
Graduation application $25
Late registration (nonrefundable) $20
Returned check $20

Orientation fee $25
Field trip .... Students will be charged the amount
necessary to defray the cost of the trip
International student service fee $45
Student parking registration and permit: Semester $35
Summer Session $12

Fall 2001 Undergraduate Tuition and Fees

Sem. Credit Hours	Tuition		Fees				
	Resident	Non-Resident	Student Center	Student Service	Computer	Student Record	Int'l. Education
14–22	$67/hr.	$278/hr.	$25	$117	$80	$9	$1
10–13	$67/hr.	$278/hr.	$25	$9/hr.	$80	$9	$1
6–9	$67/hr.	$278/hr.	$25	$9/hr.	$8/hr.	$9	$1
4–5	$67/hr.	$278/hr.	$15	$9/hr.	$8/hr.	$9	$1
3	$201	$278/hr.	$15	$9/hr.	$8/hr.	$9	$1

Fall 2001 Graduate Tuition and Fees

Sem. Credit Hours	Tuition		Fees				
	Resident	Non-Resident	Student Center	Student Service	Computer	Student Record	Int'l. Education
14–22	$82/hr.	$280/hr.	$25	$117	$80	$9	$1
10–13	$82/hr.	$280/hr.	$25	$9/hr.	$80	$9	$1
6–9	$82/hr.	$280/hr.	$25	$9/hr.	$8/hr.	$9	$1
4–5	$82/hr.	$280/hr.	$15	$9/hr.	$8/hr.	$9	$1
3	$246	$280/hr.	$15	$9/hr.	$8/hr.	$9	$1

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

[2] *Does not include parking fees, special lab fees, incidental fees or telecommunication fee.*

[3] *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.*

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

◆ One-half payment of all tuition and fees 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.

Only one alternative may be selected by a student for any semester.

Each student electing to pay by installment will be charged a $24 processing fee. An additional fee of $10 per installment shall be collected from any student who is delinquent in making an installment payment.

Health Insurance and Installment ($24) fees shall be paid prior to the beginning of the semester.

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

Withdrawal from the university, for whatever reason, will not cancel the obligation to pay the full amount of the installment payment. Furthermore, no refund of tuition and fees will be made to a student who has failed to make full payment of tuition and fees.

Any student who has elected to pay tuition and fees by installment, and who is delinquent in making payment, is barred from attending 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.

Students who choose to pay the full cost of tuition and fees prior to the beginning of the semester may pay by cash, personal check, or credit card (VISA, Discover, or MasterCard only). In addition, UH-Downtown students may make installment payments using a credit card.

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 also could result in possible charges of late fees.

In addition to the above penalties, 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. 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

Withdrawal Date	Refund
Fall and Spring Semester	
Prior to the first class day	100% (minus $15 processing fee)
1st through 5th class day	80%
6th through 10th class day	70%
11th through 15th class day	50%
16th through 20th class day	25%
After 20th class day	No refund
Summer Session	
Prior to the first class day	100% (minus $15 processing fee)
1st through 3rd class day	80%
4th through 6th class day	50%
After 6th class day	No refund

Class days, including Saturdays, are counted from the beginning day of classes as indicated in the Academic Calendar.

Students who officially withdraw from all university courses may be eligible for a refund of tuition and mandatory fees. No refund will be made to a student until full payment has been made on any outstanding balance. All 100 percent refunds incur a $15 processing fee.

Partial Withdrawal

Students who officially drop 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 partial refund of tuition and certain fees at the end of the semester.

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. No refund will be issued if a student received financial aid; the refund will be credited to the appropriate financial aid account. The *Class Schedule* provides specific dates and deadlines.

Scholarships and Financial Aid

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 amount to meet individual student needs.

Because funds are limited in many programs, it is important that you 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 you must have all necessary applications 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:

Grants

Federal Pell Grant Any student who is a U.S. citizen or permanent resident who has proven financial need. Amount of award varies depending on EFC (estimated family contribution) number and enrollment status.

Federal Supplemental Equal Opportunity Grant* (SEOG) Any student who is a U.S. citizen or permanent resident who has proven financial need. Priority will be given to those students who will also be receiving a Pell Grant.

Leveraging Educational Assistance Partnership* (LEAP) 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 U.S. 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* (TPEG) This grant is funded by tuition revenues and is available to both Texas residents and nonresidents. 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 U.S. 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 students are enrolled at least half-time. Must be a U.S. 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 U.S. 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 (PLUS) A low interest loan for parents of dependent students enrolled at least half-time. Parent must be a U.S. 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.

Funds with an asterisk (*) next to them are limited. Early application is encouraged.

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 in Step Six. Our Title IV school code is 003612. 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 (OSFA) 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

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 OSFA. 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 coursework attempted. Graduate students must achieve and maintain a cumulative GPA of 3.0.

Completion Requirement: You must complete at least 73% of all coursework 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 the complete Satisfactory Academic Progress Policy to see how your progress will be monitored.

The OSFA 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 OSFA encourages you to obtain a complete copy of this policy from the OSFA and read it carefully. If you are thinking about withdrawing from all classes PRIOR to completing 60% of the semester, you should contact the OSFA 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 1st 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 therefrom (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; and

◆ Is not eligible for federal grants, including federally sponsored grants provided for veterans by the U.S. government.

◆ Not be in default on any federal or state student loans.

To obtain this exemption, the veteran must submit an application (available in Scholarships and Financial Aid office) 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.

Library

The W.I. Dykes Library is located on the entire fifth floor of the One Main Street building with the only entrance being from the Main Street elevators or stairwell. The library has holdings of more than 200,000 books, 37,000 bound periodical volumes, 140,000 microforms, and 1,900 current periodicals and serial subscriptions. The library also has a collection of 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 available for use in the library, if needed. The library has over 50 computers available to access 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 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. Access to the online catalog from a home computer or from the UHD computer lab supports research 24 hours per day. The catalog is available from the library's Web site listed above. 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. 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: ABI/Inform, Criminal Justice Index, Electric Library, Houston Chronicle, JSTOR, Periodical Abstracts, and Project Muse under the "Find Articles" section of the library's web site. Many additional electronic resources for finding citations or information about a topic can be accessed through links from the library's "Find Articles" section of the Web page as well.

The library also houses the Texas Education Collection, including Texas State state-adopted textbooks for K-12 and curriculum

guides for HISD. This collection is supplemented by holdings in juvenile books.

Reference librarians can offer individual assistance at the Reference Desk in utilizing the online catalog, print materials, or any of the electronic library resources. Tours and classes may be scheduled for group instruction. Library guides are also available in the Reference area with additional information or assistance.

Coin and card-operated machines are maintained for photocopying of materials. IBM Selectric typewriters are furnished free for student use in the library. A Kurzweil optical reader and three closed-circuit TVs that enlarge print are available for the visually impaired. 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 the book or journal article needed by a student, faculty, or staff member, then Interlibrary Loan can be used. The library will borrow the material for you from another library anywhere in the country. Interlibrary Loan is primarily a free service. If there will be a charge, your permission will be requested before UHD requests this material for you.

The library has additional services for UHD distance students. Just click on the Distance Education Students link on the library's Web site http://www.uhd.edu/library and you will have access to forms for requesting books, articles, reference assistance, as well as access to free Internet resources for finding articles.

A currently validated UHD identification card is used as the library card and must be presented when checking out materials. The card is obtained during registration and must be updated with a current sticker each semester. The library is open 7 days a week during full semesters and Monday through Saturday during the Summer semester. Check with the library for intersession and holiday hours. For reference information call 713-221-8187; for circulation information call 713-221-8186.

Computing Services

The University of Houston-Downtown offers state-of-the-art computing equipment and software to its students, faculty, and staff. The primary academic computers are Compaq Proliant for PC support, Compaq Alpha for UNIX support and an IBM SP2 (scalable parallel processing) for parallel and research computing. The 16,000-square-foot Academic Computing Lab houses more than 250 PCs and printers. In addition, this facility, which is available to any currently enrolled student, has three electronic classrooms, seminar room, 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 Engineering Technology Department 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 Natural Sciences Department has a 60-station Science Learning Center that contains two state-of-the-art electronic classroom. The department also has a new 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 mathematics skills. There are over 15 specialized departmental computing labs serving subject specific needs.

The Technology Teaching and Learning Center (TTLC)

The Technology Teaching and Learning Center assists faculty to develop and implement interactive teaching and learning technologies which increase the effectiveness of their pedagogy. Offering a wide range of programs, tools and activities, the TTLC houses four electronic classrooms, a training/teleconference room, and 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.

Academic Support Center

The Academic Support Center offers tutoring, computer equipment and software to assist students in reading, mathematics, writing and TASP. The center is located in 925-North and is open to all UH-Downtown students. Hours are structured to fit day and evening student's schedules, and students may attend as often as they like.

Multimedia Services

Multimedia Services provides instructional support and media production services for students, faculty, and staff. Multimedia Services houses and distributes audiovisual equipment for classroom use and student activities. The staff assists in developing and producing audio, video, photographic and graphic presentations. The multimedia center contains a television studio, video and audio copying services, transparency making and lamination equipment, and an area for viewing videotapes. Multimedia Services is located in Room 930 South.

Academic Policies

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 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 are made 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

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.

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 2). An evaluation will be performed upon acceptance into 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.

No more than 66 semester hours of transfer credit from a junior or community college may be applied toward a degree. Declared majors should obtain approval from their degree granting college before taking additional courses to transfer to UHD.

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 which 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 receive the evaluation 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 Overseas

Students applying for admission with overseas college credits 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 the evaluating services are available at Enrollment Services.

Transfer Credit Dispute Resolution Procedures

Students who receive written notification from Enrollment Services 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 629-South.

Transfer Credit–Graduate

Transfer of graduate course credit is specified in the published master's degree handbooks.

Credit by Examination–Undergraduate

UH-Downtown currently accepts up to 24 hours of credit obtained from approved credit by examination courses. 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, American College Testing and Advanced Placement 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 used 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 (CLEP).

Advanced Placement Program (AP)

Examinations	UHD Equivalent Course	Minimum Grade	Semester Hours
Biology	BIOL 1301/1101	3 or 4	4
	BIOL 1301/1101; 1302/1102	5	8
Chemistry	CHEM 1307/1107	3 or 4	4
	CHEM 1307/1107; 1308/1108	5	8
Computer Science A	CS 1410	3	4
English—Language and Composition	ENG 1301	3	3
English—Literature and Composition	ENG 1302	3	3
Mathematics—Calculus AB	MATH 2401	3	4
Mathematics—Calculus BC	MATH 2401	3	4
Physics B	PHYS 1307/1107	3 or 4	4
	PHYS 1307/1107; 1308/1108	5	8
Physics C (Mechanics)		3	4
Physics C (Electricity and Magnetism)		3	4
Psychology	PSY 1303	3	3
Spanish	SPAN 2301 and 2302	3 or 4	6
Spanish	SPAN 2301, 2302, 3301	5	9

The College Level Examination Program at UH-Downtown

Subject Examination	Minimum Score	(Credit Hours) UHD Equivalence
American Government	50	(3) POLS 2304
American Literature	50	(6) ENG 2311/2312
Analyzing and Interpreting English Literature	50	(3) Sophomore literature
College Algebra	50	(3) Math 1301
College French	50	(8) FREN 1401/1402
College Level Spanish Language	50	(8) SPAN 1401/1402
English Literature	50	(6) ENG 2313/2314
Freshman College Composition	50	(3) ENG 1301
General Biology	50	(4) Biology
General Chemistry	50	(4) Chemistry
History of the United States I	50	(3) HIST 1305
History of the United States II	50	(3) HIST 1306
Human Growth and Development	50	(3) PSY 2310
Information Systems & Computer Applications	50	(3) CIS 1301
Introductory Psychology	50	(3) PSY 1303
Introductory Sociology	50	(3) SOC 1303
Principles of Accounting	50	(6) ACC 2301/2302
Principles of Macroeconomics	50	(3) ECO 2301
Principles of Microeconomics	50	(3) ECO 2302
Trigonometry	50	(3) MATH 1302
Western Civilization I	50	(3) HUM/SOS Elective credit
Western Civilization II	50	(3) HUM/SOS 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 which may be applied.

Auditing Courses

To audit a course is to enroll in a course on a noncredit basis. Students wishing to audit courses should contact **Enrollment Services**. 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

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. Academic honesty is the cornerstone of the academic integrity of the university. It is the foundation upon which the student builds personal integrity and establishes a standard of personal behavior. The honesty policy is designed to encourage honest behavior and is jointly administered by faculty and students.

The Honesty Code is the university's standard of honesty. It states: WE WILL BE HONEST IN ALL OUR ACADEMIC ACTIVITIES AND WILL NOT TOLERATE DISHONESTY.

The Academic Honesty Policy is designed to address, in a uniform manner, cases of alleged violation of the Honesty Code.

It is each student's responsibility to read and understand UH-Downtown's policy on Academic Honesty. For specific information contact the Student Affairs Office.

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 and no later than before 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 (In Progress) 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 (Satisfactory Passing) 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 within the first 12 days of classes during a long term or within the first four days of classes during a summer term.

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

Withdrawal deadlines are published in the academic calendar found in the *Class Schedule*.

Note: 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 the level 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.

This 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 (Incomplete), S (Satisfactory), **U (Unsatisfactory),** IP (In Progress) and grades marked with an asterisk (*) 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 in the following order: 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.

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

Undergraduate 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 1995, 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.

Undergraduate 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 (Fall, Spring, Summer I and Summer II combined) 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 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.

Fresh Start

A student wishing to take advantage of Fresh Start or readmission may apply only at the time of initial application or readmission at **Enrollment Services**.

Graduate Academic Probation and Suspension

The 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 with **Enrollment Services**. Requests may be made in person, in writing, or by fax.

Release of Student Records

UHD has a policy in conformity with the Family Rights and Privacy Act covering the release of student records. Under this law, UHD is permitted to release what is known as "directory information" without your consent unless you request in writing that we do not. Directory information at UHD may include your address, telephone number, dates of attendance, major field of study, degrees earned and full- or part-time status. The most common requests for directory information come from potential employers, lending agencies and others wanting to verify your enrollment or degree.

You may request that your information not be made available to the public by contacting **Enrollment Services**, 350-S, at any time during the semester. It is important that you understand, however, that requesting confidentiality applies to all requests. This means, for instance, that a creditor or employer to whom you have reported enrollment or degree information will be unable to verify that information.

Change of Name and Address

Any change in name or address must be reported to **Enrollment Services**. Name changes must be supported by legal documentation.

Graduation Requirements

General Degree Requirements for Graduation— Bachelor's Degree

For degree completion, at least 25 percent 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 in the upper division 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 which 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 to **Enrollment Services** 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.

General Degree Requirements for Graduation— Master's Degree

The graduation requirements for master's degrees, including residency and thesis requirements, are published in the specific graduate degree handbooks.

Graduation under a Specific Catalog

A student usually graduates under the degree provisions of the catalog in effect at the time of his 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 **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 and **Enrollment Services** 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 Affairs

The University of Houston-Downtown's Division of Student Affairs offers a wide variety of services, programs and activities designed to augment the academic experience of students and to facilitate their development as whole persons.

Dean: vacant

Student Services
Office of Enrollment Services

Juan B. Garcia, BA, MS, Director

The Office of Enrollment Services assumes leadership role in admissions and records function with emphasis on marketing, outreach, recruitment, registration, records and retention including enrollment support for new graduate programs. For information on admissions see page 2 and for Student Records see page 16.

Information Center

The Information Center generally serves as the central resource, referral and visitor center for the UH-Downtown community. As part of its specialized services, the center provides UHD students and prospective students with information and assistance regarding enrollment procedures, classes, schedules and general information about the university. It serves as the hub and coordinating body for all New Student Orientation Programs, and the "Connections" mentoring program.

The center also issues IDs and ID updates for students, faculty, staff and alumni. Students may obtain a Class Schedule, Student Handbook, a Catalog, or a TASP Bulletin from the Center. They may also purchase Scantron forms, and blue books when the Bookstore is closed.

Scholarships and Financial Aid

Lisa Beaudo, BA, Director

The Office of Scholarships and Financial Aid provides assistance for qualified students in obtaining scholarships, grants and loans and college work-study aid to support their educational activities. For information regarding specific programs and requirements, see page 7.

Counseling, Career and Student Health Services

Caroline Jurgens, EdD, Director

Counseling Services offers individual, couples and group counseling for a variety of academic and personal concerns. Appointments are recommended; however, walk-ins are welcomed. Emergency counseling is also available during regular office hours. Groups for support on particular issues can be formed with enough student interest. Examples of groups that have successfully met and helped students include the Women's Support, Relationship, and General Counseling Groups. Study skills and test anxiety groups are also popular. Psychiatric and other referral services are also provided free of charge. Strict confidentiality is observed.

Career Services provides support, information, and counseling to students who wish to explore career options. This office can help students develop academic and extracurricular programs to support and enhance their career interests. Information about self-help, personality style, majors, undergraduate and graduate schools, labor market trends, and career options can be accessed. Employer literature, listings of employment opportunities, and access to the Internet are also available.

Field Experience
Field Experience offers qualified students an opportunity to integrate classroom learning with work experience. The program grants semester credit hours which may apply toward the gradu-

ation requirements of degree programs. A student wishing to enroll in a Field Experience course must have completed at least 60 semester credit hours, be in good academic standing, and meet specific departmental requirements including approval by the department chair. No more than six semester credit hours in Field Experience instruction may be applied toward graduation. **Information is** available in each academic department and in Career Services (370-N).

Student Health Services focuses on health promotions and disease prevention. Our 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, confidential HIV testing and counseling are provided. The pharmacy will fill in-clinic prescriptions at low cost and also offers some non-prescription medications for sale. Our nurses provide counseling on a wide variety of health issues and offer special screenings and services throughout the year. Educational brochures on a variety of health related subjects are also available. Applications for student health insurance may be obtained at the office of Student Health Services, Room 380-North.

Student Activities

Thomas Corti, PhD, Director

While formal educational experiences provide students with one facet of learning, the Office of Student Activities encourages and challenges students to become involved in other components of campus life by participating in student organizations and activities. The Office of Student Activities coordinates the functions of the Student Government Association, Campus Activities Board, a variety of clubs and organizations, Crossroads Festival, Culture on the Bayou, Sports and Recreation and the leadership development series.

Student Government Association

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

Campus Activities Board

The Campus Activities Board (CAB) is the programming body that serves the UH-Downtown community through a variety of educational, social and multicultural programs and activities. Any student interested in developing creative ideas to enhance programs on the campus is encouraged to volunteer with CAB.

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 interests and goals to meet. There are also social clubs, cultural organizations and special interest groups. All clubs offer students educational opportunities, as well as personal enjoyment.

Student Publications

The Dateline
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 experiences in journalism.

Bayou Review
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 UH-Downtown 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 & Recreation

Sports & Recreation 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 & Recreation are open to all UHD students, faculty and staff at no additional fees. Alumni Association members may purchase a Sports & Recreation Membership at an annual $30.00 fee.

Facilities

The three-level, 30,000-square-foot Jesse H. Jones Student Life Center includes two ball courts, equipped for full or cross court basketball, volleyball, badminton, and indoor soccer, 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. Examples of some of the programs offered are: Aerobics, Karate, Tai Chi, Tae Kwon Do.

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 20 different sports. Leagues are created for competitive and just-for-fun participants alike, and there are several activities where men and women combine 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.

Gameroom

The Gameroom provides a place for students to relax and unwind between and after classes. Students may choose to play billiards, ping-pong, foosball, darts, video games, chess, cards, listen to the CD jukebox, watch television or purchase snacks from the snack bar. The Gameroom conducts various tournaments, programs and parties. Tournament winners may go on to represent UHD in regional competition.

Locker Rental

Lockers, located on the 2nd, 3rd and 4th floors, are available for students to rent. Per-semester rates are $5 for small, $7 for medium and $10 for large lockers. Lockers are assigned on a first-come (with receipt), first-served basis.

Special Services

Houston Resource Center (HRC)

The Houston Resource Center serves as a clearinghouse for both internal and external scholarship information.

International Students

Within Enrollment Services, 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 and provides immigration counseling. To ease the transition to living and studying in the United States, the office coordinates a special orientation for incoming international students and offers personal assistance whenever possible.

The office also provides cultural programming and immigration workshops for international students and serves as a resource to students and faculty with information about studying abroad, international exchange programs and conferences.

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. Programs occur early in the summer for new students entering the university during a summer session, later in the summer for those entering in the fall, and during the fall for those students preparing to enroll in the spring semester.

Orientation also offers currently enrolled students the opportunity to develop their leadership skills and make new friends by becoming leaders in the program.

Connections is a mentoring program available to all first-time students during their first semester at UH-Downtown. A new student is linked with a university student who serves as the new student's mentor. Mentors help new students achieve success during their first semester at UH-Downtown by pointing out useful resources, offering helpful hints for personal and academic growth, providing support, and serving as friends and advocates (as needed).

Partners in Leadership (PIL)

Partners in Leadership is a semester-long leadership development program offered to culturally diverse groups of UH-Downtown students. Selected students, in partnership with faculty, staff and community leaders, engage in experiential leadership training and seek ways to become agents for positive change in society. This program is currently offered during the fall semester.

The P.I.L.A. (Partnership in Leadership Association) is an alumni organization of the Partners in Leadership program. The goal of the association is to share what has been learned in the program with the UH-Downtown community and the larger community.

Preventing the Abuse of Substances and Self (PASS)

A special program, Preventing the Abuse of Substances and Self (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 Posse, a volunteer group devoted to fighting the war on drugs.

Testing Services

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), PRAXIS/School Leadership Series, Law School of Admission Test (LSAT), Medical College Admission Test (MCAT), Texas Academic Skills Program (TASP), 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, Room 370 South.

The WriterPlacer (WP) and Accuplacer, which are one of the four approved TASP alternatives recommended to new college freshmen is offered by Testing Services. The UHD TASP Alternative test is available to any student who has never taken TASP, QuickTASP (QT), or any TASP alternative before. QuickTASP and UHD TASP Alternative are offered for UHD students only.

Cultural Enrichment Center

The Cultural Enrichment Center

The Cultural Enrichment Center provides support for the recruitment and retention of minority students and engages in programs that offer greater access to higher education for students at UH-Downtown. The center also provides research and evaluation to promote effective program development, extend cooperative efforts with the Mexican-American and African-American Studies Programs at the University of Houston, and increase activities in support of outreach efforts with Houston area public schools.

The center has an activities fund to encourage the university community's participation in events that may be of special interest to minority students or that increase awareness of ethnic and cultural issues in society. The fund is offered in support of speakers, workshops, publicity and activities undertaken on behalf of the center.

General Information

Student Parking

Student parking is available at UH-Downtown in three different areas: Daly Street Lot (North Main and Daly), Shea Street Lot (North Main and Shea) and Naylor Street Lot (North Main and Naylor). 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 Facilities

Dining facilities are located on the third floor of the new Academic Building. The food court offers home-cooked entrees, pre-packaged salads, and deli sandwiches plus name brand items such as "Dunkin Donuts" and "Otis Spunkmeyer" cookies and muffins. There are five fast food franchises, Taco Bell, Pizza Hut, Burger King Express, Little Kim Son, and Subway Sandwiches. The coffeehouse features a variety of specialty coffees and "granitas."

Bookstore

The university bookstore is housed in the One Main Building. It offers new and used textbooks, academic trade and reference titles, school supplies, clothing and insignia items, and computer software. Also available are greeting cards, snacks, postage stamps, health and beauty aids, and magazines.

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 Ann Trask and the O'Kane Gallery Task Force select five to six exhibitions annually of artworks by emerging and established artists, exhibitions that serve the diverse interests of the students, faculty, and staff of the University of Houston-Downtown and those of the downtown Houston community. These shows of contemporary artwork, in all media, provide educational support to various university courses and to near-by schools, while the gallery itself functions as a site for university forums, meetings, and receptions. Exhibitions are free and open to the public.

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 the O'Kane Theatre. Participation is open to students, faculty, staff and alumni. The theatre, when not is use for theatrical productions, is used for various other university activities and events throughout the year.

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 on-line 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, The University Center in The Woodlands and San Jacinto College North. 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 (on-line, tape purchase, instructional television or at one of the off campus locations) may be assessed an off-campus course fee. Specific details about these off-campus fees are available through the UHD website and in the Class Schedule.

The Weekend College

The Weekend College gives students the opportunity to complete their college degree by taking classes on Saturdays or Friday evenings. 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.

On-Line Courses

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 the 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. Detailed information about online courses is available at uhdonline.uhd.edu.

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.uhsa.uh.edu/fb

William O'Neill, Coordinator
(281) 275-3323
email: O'Neill@dt.uh.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–Clear Lake, UH-Downtown, 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; video tape purchased for home viewing; KUHT-TV Channel 8 at home; and on-line.

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

On-site classes are held at either the Wharton County Junior College CentraPlex, 550 Julie Rivers Drive, Fort Bend, or the Houston Community College Stafford campus, 9910 Cash Road. Administrative offices and services are located at the CentraPlex.

For additional information, stop by the Information Center or the UHS at Sugar Land office, 550 Julie Rivers Drive, Sugar Land, or call 281-275-3301.

The University Center in The Woodlands

www.tuc.edu

The University Center
3232 College Park Drive
The Woodlands, Texas 77381

281-618-7140; 936-273-7510

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-division course work at one of the four colleges of the North Harris Montgomery Community College District. UHD offers the junior and senior courses leading to the degree. As at UHS-Sugarland, 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 on-line.

UHS at Cinco Ranch

www.uhsa.uh.edu/cr

4242 South Mason Road
Katy, Texas 77450
281-395-2800

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-Clear Lake, UH-Downtown, and UH-Victoria) and Houston Community College System.

Degrees offered by UHD include the Bachelor of Business Administration in Accounting, Bachelor of Business Administration in General Business and the Bachelor of Science in Interdisciplinary Studies. Students complete the lower division requirements for the undergraduate degree at one of the HCC System campuses. UHD provides the junior and senior level courses requried by the degree on-site at the Cinco Ranch location. As at the UHS Sugarland and The University Center, instruction is delivers 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.

San Jacinto College North

The University of Houston-Downtown teaches a number of courses on the campus of San Jacinto College North, 5800 Uvalde, Houston, 77049. These classes are in support of the Bachelor of Science, with a major in Criminal Justice, and the Bachelor of Arts, with a major in Interdisciplinary Studies (Elementary Education); but the courses may apply to any UHD degree program in which they are ordinarily accepted. The courses are being offered by UHD as off-campus courses. Students can take up to 18 hours of off-campus courses and count them toward a degree program. The courses meet in rooms of the San Jacinto College North Library Building.

> ## Continuing Education and Professional Development

Education and training are provided through three major units: the Applied Business and Technology Center, the Criminal Justice Center (see listing under the Criminal Justice department) and the English Language Institute.

Applied Business and Technology Center

G. V. Krishnan, MS, Director
606 South, 713-221-8032
email: abtc@dt.u.h.edu

The Applied Business and Technology Center 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 Applied Business and Technology Center 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, programming languages—C, C++, Visual Basic, and Java, Business Applications—Office 97 and Internet related training courses.

◆ The center has an extensive consulting service which 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

Gail Kellersberger, MA, MFA, Director
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 U.S. citizens who wish to improve their English language proficiency. ELI students typically represent more than 25 countries. The program's curriculum and programs promote English language and American culture learning. ELI is a member of the American Association of Intensive English Programs (AAIEP).

The ELI's intensive daytime program emphasizes preparation for university academic studies through course work in reading, writing, grammar, listening and speaking. Class work is supported by computers, videos, books and a listening laboratory. Content courses at upper levels use university topics such as literature, business and current events to initiate students into university study. The ELI's seven-level program also includes TOEFL (Test of English as a Foreign Language) preparation. However, students who successfully complete the advanced level of the program may be recommended to attend academic classes at UH-Downtown without the 550 TOEFL score generally required of international students applying to the university. ELI graduates receive three hours of UHD elective credit.

Field trips and social activities are an important function of the ELI. Students from other countries are given the opportunity to learn about American culture while they are learning the language. Course content supports this as well. Students learn how to navigate the American educational system during the ELI course.

The ELI program in Intercultural Communication for the Global Professional offers seminars in doing business with Mexico, Russia and other countries, as well as a variety of workshops which facilitate business dealings in multicultural settings. ELI provides special training for professions in language skills.

ELI faculty members participate in professional organizations such as Teachers of English to Speakers of Other Languages, the Association of International Educators, and the American Association of Intensive English Programs. The ELI also draws on the expertise of visiting professors from academic institutions in other countries, such as the Universidad Autónoma de Nuevo León in Monterrey, Mexico, to enhance its various programs. In addition, the ELI develops individual English language learning programs for special international groups sponsored by public or private agencies abroad.

American Humanics Program

The University of Houston-Downtown is affiliated with American Humanics, the only national organization dedicated to preparing and certifying future nonprofit professionals to work with America's youth and families. This innovative program of skill and knowledge competencies, co-curricular activities, internships, and course work complements and builds on a student's chosen academic major. Students completing this intense program of study and service are ensured that they have the best preparation for challenging careers in the youth and human service nonprofit sector. Application forms and detailed information about the program are available in the College of Humanities and Social Sciences, 1015 South.

Study Abroad Programs

The University of Houston-Downtown is a charter member of the Texas Consortium of Study Abroad Programs. Academic year and semester programs of study are available in Mexico, England, Ireland, France, Italy, Russia, Spain, the Czech Republic, Austria, Argentina, Australia, Japan, and South Africa. In addition to more formal courses of study, faculty-led programs are occasionally offered in conjunction with various academic classes. Recent faculty-led programs have visited China, Mexico, and Israel.

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. Depending on the cost, program length, and student interest in a particular study abroad program, 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, 629 South.

Disabled Student Services

Disabled Student Services meets the special needs of disabled students 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 testing time. In addition, the staff advises instructors on classroom accommodation techniques, tutoring, faculty liaison/advocacy and community agency liaisons.

Section 504 of the Rehabilitation Act of 1973 stipulates that disabled students must be accommodated so that they may achieve at a level at which they are capable. More detailed information may be found in the Disabled Requirements Handbook of the Federal Programs Advisory Service, U.S. Department of Education. Additional information may be obtained in 903-South.

Academic Programs

General Education

General Education and the College Curriculum

The granting of a college degree signifies that an individual has reached a level of intellectual development of sufficient merit to justify formal recognition. Intellectual development can be measured in terms of breadth and depth of knowledge, and a college degree is meant to signify growth in both dimensions. In most college programs students demonstrate their depth of knowledge through successful completion of courses required for a disciplinary major and their breadth of knowledge through successful completion of general education courses, which are required of students in all majors.

The general education program attempts to provide those experiences which define what it means to be a college-educated person, while the discipline major attempts to provide those experiences which define what it means to be a part of that discipline. The assumption behind a general education program is that the phrase "college-educated" has its own meaning, that it signifies a type of intellectual breadth and perspective which all students should exhibit regardless of their major. General education requirements are referred to as the core curriculum because they define what is central to the college experience and the common standards used to measure the intellectual development of all students.

The basic goals of the general education program at UH-Downtown are that students, by the time of their graduation, should demonstrate:

◆ An ability to view events from a variety of perspectives including perspectives from different points of time, different cultures, different people and from that of the physical world;

◆ An awareness of the ways people pursue knowledge including knowledge of scientific standards, ethical standards, standards used in the Arts and Humanities and knowledge of new technologies; and

◆ An ability to communicate clearly and effectively and make use of different media for the transmission and processing of information.

The following section outlines the requirements set to accomplish these goals.

Common Core Requirements

Beginning fall 1999, a 42-semester credit hour common core is required of all students. The core curriculum is presented below along with course options available at UHD.

Core Curriculum Component Area	SCHs	UHD Core Course Options
Communication		
English rhetoric/ composition	6	ENG 1301, 1302
Speech	3	Any speech course
Mathematics	3	MATH 1301, 1310, or any other college-level mathematics course
Natural Sciences	6	Two lecture/laboratory courses from BIOL, CHEM, GEOL, or PHYS.
Humanities and Visual and Performing Arts		
Fine Arts	3	One course from ART, DRA, MUS
English Literature	3	Any sophomore literature course
Social and Behavioral Sciences		
U.S. History	6	Two courses selected from HIST 1305, 1306, 2303, and 2309
Political Science	6	POLS 2303, 2304
Social/Behavioral Science	3	One course selected from ANTH 2301, 2302; CJ 1301; ECO 1301; GEOG 1301, 1302; PSY 1303; or SOC 1303
Computer Literacy	3	One course selected from CIS 1301; CS 1305, 1408, 1410; ENGR 1400; HUM 2305
Total Hours	**42**	

Students transferring to UHD who have completed the core curriculum at another Texas institution of higher education will receive academic credit for each of the courses transferred and will not be required to take additional core curriculum courses at UHD.

A student who transfers from one institution of higher education to UHD without completing the core curriculum of the other institution will receive academic credit within UHD's core curriculum. The student must also satisfy any remaining UHD core course requirements.

Students concurrently enrolled at more than one institution of higher education will follow the core curriculum requirements in effect for the institution at which they are classified as degree-seeking students.

Application Course Requirements

To ensure that the communication and analytical skills learned in the common core are applied and further developed, the general education program also establishes a set of "application" course requirements. Application courses are required in the following areas:

Writing Skills
In addition to the common core requirements in English composition and literature, students must take additional upper-division courses having substantial written assignments. These courses, designated as "W" courses in the degree program, assure students of the opportunity to make use of and further refine writing skills within the context of the academic major.

All students are required to take two of these courses.

Nonverbal Analytical Skills
To aid in the development of nonverbal analytical skills, the common core requires that all students take one college-level mathematics course and one computer science course. In addition to the core requirements, students must take at least one additional course, designated as an "S" course in the degree program, which makes use of these skills in solving problems related to their major field of study.

Enhancement Course Requirements

Another effort to pursue general education objectives beyond the courses of the common core is through enhancement course work. Enhancement courses are courses that examine selected general education concerns with special relevance to students' major fields of study. These courses are designed to provide further understanding of those fields of knowledge that will enhance the students' capacities for effective and responsible action as they pursue academic and professional goals. Enhancement course requirements address the topics of ethics and morality and the world community. Each degree plan has been designed to incorporate these topics into its curriculum.

Writing Proficiency Examination

All students must take and pass a writing proficiency exam during their junior year. The exam must be taken after the completion of 60 hours and before completion of 75 or more semester hours. Transfer students with 75 or more hours must attempt the examination during their first semester at the university. The purpose of this examination is to determine if students have retained the language skills learned in their lower-level composition courses and to ensure that all students proceeding to upper-division work possess college-level writing skills. Procedures for registering for the writing exam and examination dates are given in the Class Schedule.

Time Frame for Completing General Education 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 baccalaureate education. The more 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.

Because skills in writing and computation are especially critical to future academic success, all students must enroll in ENG 1301, ENG 1302 and MATH 1301 (or any math course having it as a prerequisite) or MATH 1310 the first semester they are eligible to do so and must continue to enroll in those courses until they have been successfully completed.

Students are encouraged to complete all other core requirements before enrolling in any upper-division (3000 and 4000 level courses) course work. Students may not take the writing skills courses within their major until they have successfully completed the Writing Proficiency Examination.

University College

UNIVERSITY COLLEGE

Dan R. Jones, 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 issues. 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 coursework evaluations from previous colleges and universities that students may have attended.

Academic Counseling Center

Room 646 South, 648 South

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

The UH-Downtown Learners Community

Robin Davidson, Ph.D., Director
Room South 655-B, 713-221-828
e-mail: davidson@dt.uh.edu

UH-Downtown's Learners Community program, 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 that those students participating in the Learners Community will remain enrolled fall to fall, make satisfactory academic progress, and graduate within five to six years with a baccalaureate degree. Program components include: Linked Courses, Supplemental Instruction, Academic and Financial Aid Counseling, Midterm Grade Reporting, The Probation Recovery Program, Faculty Mentoring, Freshman Interest Groups, and The Laptop Pilot Project.

GEAR UP (Gaining Early Awareness and Readiness for Undergraduate Programs)

Amy Molina, M.S., Coordinator
Room: South 643-E, 713-221-2719
e-mail: molina@dt.uh.edu

The GEAR UP Program, funded by the U.S. Department of Education, is a partnership among Project GRAD, Houston Independent School District (Davis, Yates, and Wheatley feeder patterns), and partner universities (University of Houston-Downtown, University of Houston, Texas Southern University). GEAR UP 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, seventh, and eighth graders.

Educational Talent Search and Upward Bound

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.

Academic Outreach Programs

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.

COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

Michael R. Dressman, PhD, Dean
B. Christiana Birchak, PhD, Associate Dean
Anjoo Sikka, 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
Interdisciplinary Studies (Elementary Education)
History
Humanities
Social Sciences
Bachelor of Science with majors in:
Criminal Justice
Interdisciplinary Studies
Political Science
Professional Writing
Psychology
Social Sciences
Sociology

Master of Arts in Teaching
Master of Science with major in Criminal Justice

Teacher Education Program
The University of Houston-Downtown's teacher education program offers certification in elementary, secondary, and bilingual education. Students wishing to obtain elementary certification may choose teaching fields in English, history, mathematics, biology, or speech communication. Secondary certification majors may choose from mathematics, English, Social Studies, Science or generic (additional areas by advisement for post-baccalaureate students). An endorsement in English-as-a-Second Language is also available. For formal admission to teacher education students should have:

- Junior, senior, or post-baccalaureate standing;
- Passing scores on all three sections of the TASP; 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, SED, or PED courses. Students interested in the teacher education program should contact the

Department of Urban Education at 713-221-8906 or visit Room 601-South.

General Education Requirements in the College of Humanities and Social Sciences

All students seeking a bachelor's degree in the College of Humanities and Social Sciences must complete the general education requirements, including the common core courses, application courses, enhancement courses and the Writing Proficiency Examination required of all UH-Downtown graduates, as well as meet the specific requirements of the particular degree sought. Fulfillment of general education requirements may vary depending on the degree.

Common Core Requirements (42 hours)

The courses listed below fulfill the common core requirements. Equivalent courses taken at UH-Downtown or transferred from another institution may be substituted with a degree coordinator's permission. All placement and prerequisite regulations apply.

Communication Skills (9 hours of English composition and 3 hours of speech communication)

ENG 1301	Composition I
ENG 1302	Composition II

Any speech course.

Mathematical Skills (3 hours)

MATH 1301	College Algebra
	or
MATH 1310	College Mathematics for Liberal Arts
	or

Any mathematics course with MATH 1300 or 1301 as a prerequisite

Natural Sciences (6 hours)

Any two introductory courses (6 hours) in the natural sciences (biology, chemistry, geology or physics).

Computer Literacy (3 hours)

CIS 1301	Introduction to Computer Based Systems
	or
CS 1305	Introduction to Computer Technology
	or
HUM 2305	Computer Applications in the Humanities

Literary Arts (3 hours)
One of the following:

ENG 2301	Literature of the Western World: Ancient to Renaissance
ENG 2302	Literature of the Western World: Neoclassical to Modern
ENG 2311	American Literature to 1865
ENG 2312	American Literature from 1865
ENG 2313	British Literature to 1800
ENG 2314	British Literature from 1800
	or

Any college literature course, sophomore level or above

Fine Arts History or Appreciation (3 hours)
One of the following:

ART 1301	History of Art I
ART 1302	History of Art II
ART 1310	Art Appreciation
DRA 1301	Introduction to Theater
DRA 3303	History of Theater I
DRA 3304	History of Theater II
MUS 2301	Music Appreciation: Before 1750
MUS 2302	Music Appreciation: After 1750

Transfer courses in history or appreciation of architecture or dance are acceptable. Studio and performance courses do not fulfill this requirement.

Social & Behavioral Sciences
One of the following:

ANTH 2301	Physical Anthropology
ANTH 2302	Cultural Anthropology
ECO 1301	Introduction to Economics
GEOG 1301	Introduction to Geography
PSY 1303	General Psychology
SOC 1303	Principles of Sociology

American History (6 hours)
Two of the following:

HIST 1305	U.S. History to 1877
HIST 1306	U.S. History after 1877
HIST 2303	Texas History
HIST 2309	Ethnic Minorities in American History

Political System (6 hours)

POLS 2303	U.S. Government I
POLS 2304	U.S. Government II

Application Courses (9 hours)
Application courses are not additional course requirements.

They may already be included in a student's degree program and may, thus, fulfill other degree requirements. However, a potential graduate's program of studies must include application courses in writing skills and nonverbal analytical skills.

Writing Skills (6 hours)
Two upper-division courses in which there are substantial written assignments. Consult a degree advisor for specific courses which complement a particular degree. Courses commonly used to fulfill this requirement in the College of Humanities and Social Sciences include:

ENG 3302	Business and Technical Report Writing
ENG 3308	Legal Writing
ENG 4305	Advanced Composition

All upper-division courses in English literature and history

Nonverbal Analytical Skills (3 hours)
One course which fits with and supports a student's degree program and which employs mathematical or symbolic reasoning skills. Consult a degree advisor for specific courses which complement a particular degree. Courses commonly used to fulfill this requirement in the College of Humanities and Social Sciences include:

SOS 3312	Statistics in the Social Sciences
PHIL 4315	Symbolic Logic

Any additional course in mathematics, computer science or natural sciences. Courses in accounting, economics or music theory may provide additional possibilities, depending on the program.

Enhancement Courses (6 hours)

Enhancement courses are not additional course requirements. They may already be included in a student's degree program and may, thus, fulfill other degree requirements. However, a potential graduate's program of studies must include enhancement courses in ethics and morality and world community.

Ethics and Morality (3 hours)

One course which addresses topics of ethics and morality. Consult a degree advisor for specific courses which complement a particular degree. Courses commonly used to fulfill this requirement in the College of Humanities and Social Sciences include:

CJ 3311	Ethics of Social Control
PHIL 3301	Moral Issues, Personal and Professional

Other selected courses in philosophy

World Community (3 hours)

One course which addresses topics beyond American society. Consult a degree advisor for specific courses which complement a particular degree. Courses commonly used to fulfill this requirement in the College of Humanities and Social Sciences include:

Courses in geography, foreign languages and literature, or courses in history, political science, and humanities that focus on other cultures.

Writing Proficiency Examination

This examination should be taken as soon as possible after a student has completed ENG 1302 and has earned 60 hours. Five criteria are used to evaluate essays: (1) The essay must respond to the assigned topic. (2) The essay must adequately develop a point; i.e., it must have a central point which it supports at enough length and in enough detail. (3) The essay must be organized. Signs of organization, not all of which will necessarily appear in a successful essay, are: a) an introductory paragraph or section which states the main idea of the essay; b) a series of body paragraphs, each of which is unified by an idea relating to and advancing the main idea of the essay; c) an arrangement of these paragraphs in a logical progression; d) an ending which leaves the reader with a sense of completion. (4) The essay must be clearly worded. (5) The essay must be written in standard English. In standard English, the writing, though perhaps informal, is clearly that of an educated person.

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 Humanities and Social Sciences, a student must:

◆ Pass all portions of the Texas Academic Skills Program (TASP) test;

◆ 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 Humanities and Social Sciences' Coordinator of Academic Advising.

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

Art

Criminal Justice

English

Ethnic Studies

Gender Studies

History

Philosophy

Political Science

Professional Writing

Psychology

Quantitative Methods in Research

Sociology

Spanish

Speech Communication

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.

◆ 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 of Humanities and Social Sciences.

Bachelor of Science

Major in Interdisciplinary Studies

Cindy Kistenberg, PhD, Coordinator
Room 1009-South, (713) 221-7692

The College of Humanities and Social Sciences supervises the program of studies leading to the Bachelor of Science degree major in Interdisciplinary Studies. Course work in support of this program is offered in this college, as well as in the Computer and Mathematical Sciences Department and Natural Sciences Department which are in the College of Sciences and Technology. The Interdisciplinary Studies degree offers the student a broad-based, flexible curriculum in the arts and sciences so that the individual may design a course of study to meet his or her interests and needs, both personal and career-oriented.

At the lower level (freshman and sophomore years), the Interdisciplinary Studies student receives a solid foundation in the arts and sciences. In addition to these core requirements, students take courses in three broadly defined clusters of the arts and sciences: humanities (art, drama, English, communication, foreign language, music, philosophy and speech communication); social sciences (anthropology, geography, history, political science, psychology and sociology); and mathematics and science (biology, chemistry, computer science, geology, mathematics and physics).

On this foundation the student builds an upper-level program, either by pursuing interests in traditional arts and sciences or by structuring an interdisciplinary program suited to personal needs and interests. In addition, a student may use the large number of elective hours to gain proficiency in specific career areas.

In compliance with the accrediting principles of the American Assembly of Collegiate Schools of Business, the business content of nonbusiness programs is limited to 25 percent of the credit hours applied toward graduation.

When released by the 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 (located adjacent to the Office of the Dean of 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 percent 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 for all course work which could apply toward the degree at UHD.

Common Core Requirements (42 hours)

See listing under General Education Requirements in the College of Humanities and Social Sciences.

Lower-Division Cluster Requirements (18 hours)

Six hours of arts and humanities, excluding ENG 1300, RDG 1300, ENG 1105, SPCH 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-Division Requirements (36 hours)

At least 36 hours of upper-level work in the arts and sciences offered by the following departments at UH-Downtown: Arts and Humanities, English, Social Sciences, Natural Sciences, and Computer and Mathematical Sciences. Selected courses from Urban Education or the College of Business may apply with the coordinator's 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, MATH 0300, MATH 1300 and RDG 1300) may not apply to graduation requirements. No more than 25 percent of the hours presented for graduation may be credits in business.

DEPARTMENT OF ARTS AND HUMANITIES

Susan J. Baker, PhD, Chair
Room 1047-South, 713-221-8104

FACULTY

Professors:	Lyttle, Newsum, Roubicek
Associate Professors:	S. Baker, DeWitt, Hagen, Kendall, Kistenberg, , Mosier, Parham, Shelley, Wanguri
Assistant Professors:	Krupp, Mrak, Westerfelhaus
Instructor:	Padilla
Lecturers:	Cervenka, R. Wilson
Emeritus:	Wathen
Academic Areas:	Art, drama, French, humanities, music, Spanish, speech communication

Programs of Study

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

Mission and Objectives

The Department of Arts and Humanities aims at developing a student's potential for appreciation of life. 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 concerning B.S.I.S. under College of Humanities and Social Sciences) or the Bachelor of Arts with a major in Humanities.

Bachelor of Arts

Major in Communication Studies

Deloris McGee Wanguri, PhD, Coordinator
Room 1047-South, 713-221-8104

Degree Requirements

The Communication Studies major requires a minimum of 122 hours. For degree completion, at least 25 percent 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 General Education Requirements in the College of Humanities and Social Sciences.

Preparatory Requirements (26 hours)

Foreign language in one language (8 hours)
Fine Arts (3 hours)
Speech/lower-level (3 hours-SPCH 1304 required if not taken as part of core)
Speech/lower or upper-level (3 hours)
Philosophy (3 hours)
Social Sciences (6 hours)

Upper-Level Requirements (24 hours)

Requirement: SPCH 3320 Communication Theory (3 hours)
Additional courses in Speech Communication (21 hours)

Cognate Areas (15 hours)

Requirement:
ENG 3302   Business and Technical Report Writing (3 hours)

Additional courses may be 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 percent 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 1047-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 esthetic and philosophic response 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 percent 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 nonverbal analytical reasoning course, either as an elective or in fulfillment of a requirement.

Common Core Requirements (42 hours)

See listing under General Education Requirements in the College of Humanities and Social Sciences.

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
SPCH 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)
HUM 3310: Cultural Criticism (3 hours)
HUM 4350: Senior Seminar (3 hours)
30 hours upper-level courses from the following disciplines:
    Art
    Communication
    Drama
    English
    French
    History
    Humanities
    Music
    Philosophy
    Spanish
    Speech Communication
    Social Sciences: Political Science:
        POLS 4304, American Political Thought and
        POLS 4306, Women and Politics only
    Psychology: PSY 4301: History of Psychology 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 percent 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 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 Spanish
Minimum requirements:
    A grade point average of 2.0
    A grade of at least C in all Spanish courses
    A total of 9 upper-division hours in Spanish at UHD

Minor in Speech Communication
Minimum requirements:
    A grade point average of 2.0
    A grade of at least C in all speech courses
    A total of 18 hours in speech (including SPCH 1304 and at least 9 upper-division hours in speech at UHD

Minor in Theatre
Minimum requirements:
    A grade point average of 2.0
    A grade of at least C in all drama courses
    A total of 18 hours in drama (including at least 9 upper-division hours in drama at UHD)

DEPARTMENT OF CRIMINAL JUSTICE

Beth Pelz, PhD, Chair
Room 1001-South, 713-221-8943

FACULTY

Associate Professors:	Belbot, Pelz
Assistant Professors:	Engram, Glazier, Kellar, Long, Walsh, Wang
Instructor:	Jakovich
Lecturer:	Hill

Programs of Study

Bachelor of Science in Criminal Justice
Master of Science in Criminal Justice

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 Societies

Alpha Phi Sigma—National Criminal Justice Honorary
Pi Gamma Mu—International Social Sciences Honorary

Social Association

Criminal Justice Student Association

Bachelor of Science

Major in Criminal Justice

Robert Walsh, MS, Coordinator
Room 1001-South, 713-221-8501

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 percent 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 General Education Requirements in the College of Humanities and Social Sciences.

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)
SOS 3312	Statistics in the Social Sciences

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 which addresses topics beyond American society. Consult a degree advisor for specific courses which complement this degree. Courses commonly used to fulfill this requirement in the College of Humanities and Social Sciences include courses in geography, foreign languages and literatures, and history, political science and humanities courses which focus on other cultures. This requirement may be fulfilled through elective hours or in some other course applied to the degree.

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	Criminal Justice Methods
CJ 3301	Criminology

Criminal Justice Electives (27 hours)
Chosen from among criminal justice courses not applied to the criminal justice core. At least 21 hours must be at the upper level.

Supplemental Concentration (12 hours)
Students must select 12 hours of non-criminal justice course work of which nine hours must be 3000–4000 level courses which will supplement their chosen area of specialization within criminal justice. The courses must be approved by a faculty advisor.

Electives (12–15 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 percent 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 15.)

Minor in Criminal Justice (18 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 3301	Criminology

and 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

Barbara Belbot, JD, PhD, Coordinator
Room 1986-South, 713-221-8983

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 planning, implementation and evaluation 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:

◆ who wish to increase their professional knowledge and skills or are seeking employment in a criminal justice agency

◆ who have an interest in teaching at the junior college level

◆ who wish to pursue a doctoral degree.

Degree Requirements
A minimum of 36 semester hours for either thesis or non-thesis options; both thesis and non-thesis options require completion of the following core for a total of 18 hours.

6310	Issues in Criminal Justice
6320	Research Design and Methods
6321	Quantitative Analysis in Criminal Justice
6330	Advanced Criminology
6340	Administration in Criminal Justice
6350	Criminal Justice Policy Analysis

A minimum GPA of 3.0 for all coursework

Thesis Option
In addition to the common core, thesis option candidates are required to complete 12 hours of electives, 3 hours of Thesis Practicum and 3 hours of Thesis.

Thesis option candidates will be required to take and pass a comprehensive written examination, encompassing material covered in the following core courses: 6310; 6320; 6330; and 6350. The purpose of these examinations is to provide a structured situation in which the candidate can demonstrate proficiency in various areas of study.

Non-Thesis Option
In addition to the common core, non-thesis option candidates are required to complete 12 hours of electives and the following designated courses (6 hours):

6355	Program Analysis
6365	Communication & Technology in Criminal Justice

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 these examinations is to provide a structured situation in which the candidate can demonstrate proficiency in various areas of study.

Admissions Standards
Admission is competitive and selective, and is designed to identify those 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, an applicant should have the following:

◆ Baccalaureate degree or minor in criminal justice, or a degree in a related field from an accredited university. Applicants without a bachelor's degree in criminal justice will be required to complete additional preparatory coursework as a condition of admission to the program.

◆ Minimum GPA (grade point average): 3.0 for the final 60 semester hours of undergraduate study.

◆ Graduate Record Examination scores (GRE): verbal and quantitative GRE scores are examined separately and evaluated as one information source in the total application.

◆ Three letters of recommendation from individuals acquainted with the applicant's academic work and potential.

◆ Graduates of universities where English is not the native language; minimum score 550 with section scores 50 or higher for the TOEFL (Test for English as a Foreign Language).

Any student accepted into the MS program may be required to take remedial course work in Criminal Justice.

Students who have successfully completed graduate degress in a field other than criminal justice at an accredited institution and who meet all other admission requirements for the M.S. Criminal Justice degree are not required to submit GRE scores. They are required to submit all graduate transcripts.

Training Division

Rex White, Director
122-North, 713-221-8690

The University of Houston-Downtown has one of the largest criminal justice training centers in Texas. The mission of the Criminal Justice Center 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 center donate thousands of hours annually to activities leading to the improvement of the criminal justice professions and the community at large. The center has conducted more than 100 police academy classes, trained more than 15,000 students for the criminal justice professions, 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 center'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. Between 40 to 50 specialized and advanced courses are offered annually for police officers and other public sector practitioners. Basic and advanced management training ranging from one to 14 weeks in length is provided through the Police Management Institute.

Texas Department of Criminal Justice—Institutional Division Officer Training

The Pre-Service Academy for the Texas Department of Criminal Justice Institutional Division is a minimum 160 hour certification program, to train entry personnel as Correctional Officers for the T.D.C.J.–I.D. Once the academy is completed the graduates are offered paid positions within the Texas Prison system throughout Texas.

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 center co-sponsors the Certified Protection Officer Program. In cooperation with the Houston Police Department and the Houston Chapter of the American Society for Industrial Security, it 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.

DEPARTMENT OF ENGLISH

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

FACULTY

Professors:	Dressman, Harned, L. Thomas
Associate Professors:	Ahern, Bartholomew, Birchak, Cunningham, Farris, Gilbert, Jarrett,Jennings, D. Jones, Pavletich, Rizzo, Sullivan, T. Thomas
Assistant Professors:	Bernstein,Cheng-Levine, Chiaviello, Creighton, Dahlberg, Goleman, Kinloch, Moosally, Molly Johnson
Instructors:	Nelson, Read, Schmertz
Lecturers:	Brekke, Canetti-Rios, Coblentz, Corrigan, Fadely, Hanson, Kanter, Kuzmick, Rubin-Trimble, Charlotte Smith
Emeriti:	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 Professional Writing
Bachelor of Science with a major in Interdisciplinary Studies

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 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, including 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 Bachelor of Arts with a major in English gives students a grounding in the language and literature of English, making them aware of how cultural forces shape them and critical approaches illuminate them. Like the B.S. in Professional Writing, the B.A. 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.

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 Science

Major in Professional Writing

Robert L. Jarrett, 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 percent 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 General Education Requirements in the College of Humanities and Social Sciences. SPCH 3306 Business and Professional Speech Communication is recommended in fulfillment of the speech communication component.

Lower-Level Requirements (15 hours)
Philosophy (6 hours)
Literature (3 hours)
Approved lower-level electives: 6 hours, chosen with a concentration area in mind in consultation with the degree coordinator or college advisor.

Upper-Level Requirements (45–48 hours)

SPCH 3306	Business and Professional Speech Communication (may be omitted here if taken as part of the core curriculum)
ENG 3302	Business and Technical Report Writing (3 hours)
ENG 3304	Advanced Business and Technical Report Writing (3 hours)
ENG 3330	Desktop Publishing (3 hours)

ENG 3331	Advanced Desktop Publishing (3 hours)
ENG 4322	Editing, Rewriting and Copyreading (3 hours)
ENG 4380	Field Experience or approved substitute courses in English or communication (6 hours)

Any 3 upper-level literature courses (9 hours)
Any 3 upper-level writing/English language courses (9 hours), including one writing-for-special-purposes course, such as Science Writing, Medical Writing, Legal Writing, Documentation and Manuals, Proposal Writing, Public Relations, Feature Writing, Environmental Writing

Approved upper-level electives (6 hours), chosen with a concentration area in mind in consultation with a college advisor.

Electives (15–18 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 percent 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. ADSM 1301 is recommended for students who need keyboarding skills. Electives are an important part of the degree program and should be selected in consultation with an academic advisor.

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-Division Electives (6 hours), selected in consultation with an advisor from courses in Writing/English language (see Major in English).

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 percent 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 General Education Requirements in the College of Humanities and Social Sciences.

Lower-Level Requirements (29 hours)
Foreign language in one language (8 hours)
Fine Arts (3 hours)
Philosophy (6 hours)
Social Sciences (6 hours)
Literature, both halves of a survey of Western World, American, or British Literature (6 hours)

Upper-Level Requirements (36 hours)
Genre Courses (9 hours)
ENG 3311	Studies in Poetry (3 hours)
ENG 3312	Studies in Fiction (3 hours)
ENG 3313	Studies in Dramatic Literature (3 hours)

Writing/English language (6 hours), such as Essay Writing, Creative Writing, History of Rhetoric, Studies in the Theory of Rhetoric, Introduction to the Study of Language, or History of the English Language.
Literature/Theory (21 hours)

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 percent 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.

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.

DEPARTMENT OF SOCIAL SCIENCES

Linda Vaden-Goad, PhD, Chair
Room 1009-South, 713-221-8014
http://www.uhd.edu/academic/colleges/humanities/sos/
vaden-goad@dt.uh.edu

FACULTY

| Professors: | Brigman, Christian, Fairbanks, Hampton, Haney |
| Associate Professors: | Berry, Getz, McCaffrey, Thacker-Kumar, Turner, Vaden-Goad, Williams, Wilson |

Programs of Study

Bachelor of Arts (BA), majors in:
    History
    Social Sciences Bachelor of Science (BS), majors in:
Political Science
Psychology
Social Sciences
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 social sciences. Currently, six degrees may be taken in our department: History (BS), Political Science (BS), Psychology (BS), Sociology (BS), and Social Sciences (BA or BS). Please come visit us, or call and talk with us about your interest 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

Bachelor of Arts

Major in History

James McCaffrey, PhD, Degree Coordinator
Room 1023-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 percent of the Fsemester 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 General Education Requirements in the College of Humanities and Social Sciences.

Preparatory Requirements (29 hours)
These courses are preliminary requirements for the degree and are in addition to the core curriculum:

SOS 3312   Statistics in

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 or sociology

Three hours in the fine arts

Fourteen hours in a foreign language or second-year competency. If fourteen hours are not required due to advanced placement, see statement under Free Electives.

Major Requirements (24 hours)
Non-US history:

HIST 3315 World History to 1500 AD

HIST 3316 World History since 1500 AD

Three hours chosen from this list:

HIST 3301 Europe in Crisis

HIST 3308 History of Mexico

HIST 3309 Twentieth Century England

HIST 3310 Russia in Transition

HIST 3317 Middle Eastern History

HIST 4312 History of Modern China

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

HIST 4310 Research and Writing Seminar

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 percent 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 transcripted 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 Science

Major in Political Science

William E. Brigman, PhD, Degree Coordinator
Room 1027-South, 713-221-8424

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 percent 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 General Education Requirements in the College of Humanities and Social Sciences.

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)

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 percent 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.

Only 66 junior/community college hours will apply.

Bachelor of Science

Major in Psychology

Heidi E. Ziemer, PhD: Degree Coordinator
Room 1009-South, 713-221-8014

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 percent 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 General Education Requirements in the College of Humanities and Social Sciences. 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 the 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 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	Personnel Administration
MGT 3303	Negotiating Skills and Techniques
MKT 3301	Marketing Principles
SOS 3301	Social Gerontology
SOS 3304	Death and Dying
SOS 4302	The Study of the Future

Free Electives (18-21 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 percent 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, Ph.D., Degree Coordinator
Room 1009-S, 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 percent 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 General Education Requirements in the College of Humanities and Social Sciences. 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. Other 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

38

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 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	Personnel Administration
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 percent 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.

Programs of Study in Social Science (interdisciplinary degrees)

The Bachelor of Arts and Bachelor of Science degrees with majors in Social Sciences are interdisciplinary degrees meant to prepare the graduate with a general foundation across the social sciences. Also, 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 percent 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.

Bachelor of Arts

Major in Social Sciences

Linda Vaden-Goad, PhD, Degree Coordinator
Room 1009-South, 713-221-8014
vaden-goad@dt.uh.edu

Common Core Requirements (42 hours)

See listing under General Education Requirements in the College of Humanities and Social Sciences. 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 (3 hours)
SOS 3312	Statistics in the Social Sciences (3 hours)
ANTH 2301	Physical Anthropology (3 hours)
or	
ANTH 2302	Cultural Anthropology (3 hours)
SOC 1303	Principles of Sociology (3 hours)
PSY 1303	Introduction to Psychology (3 hours) (may be omitted here if taken as part of core curriculum)

Literature (3 hours)
Completion through sophomore year of a foreign language (14 hours). 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 (21 hours)

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.

Six hours upper-level courses in social sciences or related disciplines (6 hours)

PHIL 3301	Moral Issues or another course to fulfill the ethics requirement (3 hours)	
ENG 3302	Business and Technical Report Writing or another upper-division writing course (3 hours)	
SOS 4301	Special Projects in Social Sciences (3 hours)	
or		
SOS 4380	Field Experience in the Social Sciences (Recommended)	

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 percent 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

Linda Vaden-Goad, PhD, Degree Coordinator
oom 1009-South, 713-221-8014
vaden-goad@dt.uh.edu

Common Core Requirements (42 hours)

See listing under General Education Requirements in the College of Humanities and Social Sciences. 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 (3 hours)
SOS 3312	Statistics in the Social Sciences (3 hours)
ANTH 2301	Physical Anthropology (3 hours)
or	
ANTH 2302	Cultural Anthropology (3 hours)
SOC 1303	Principles of Sociology (3 hours)

Literature (3 hours)
Mathematics or Natural Sciences (3 hours)

Upper-Level Requirements (36 hours)

Twenty-one upper-level hours in social sciences from the following disciplines (21 hours)

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.

Six hours upper-level courses in social sciences or related disciplines (6 hours)

PHIL 3301	Moral Issues or another course to fulfill the ethics requirement (3 hours)	
ENG 3302	Business and technical Report Writing or another upper division writing course (3 hours)	
SOS 4301	Special Projects in Social Sciences (3 hours)	
or		
SOS 4380	Field Experience in the Social Sciences (*Recommended)	

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 percent 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.

Philosophy

Kathleen Haney, Area Coordinator
Room 1017-S, 713-221-8077

Students interested in philosophy may wish to consider the Bachelor of Arts with a major in Humanities, described in the catalog pages for the Department of Arts and Humanities.

Minor Program Requirements

Minor in History (18 hours minimum)

Six hours of U.S. History courses from the common core

Twelve additional hours of 3000/4000-level History courses

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
POLS 3308	Introduction to Political Thinking
HUM 3301	Foundations of Western Culture I
HUM 3302	Foundations of Western Culture II
SOS 3302	Development of Political Ideas I
SOS 3303	Development of Political Ideas 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

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 Coursework (9 hours)

MATH 3310   Statistical Analyses and Applications II (required)

Select Two:
     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 (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 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 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

William E. Brigman, PhD, Advisor
Room 1027-South, 221-8424

Students interested in pre-law studies, regardless of their major, may contact Dr. Brigman. Catalogs of many law schools also are available for review through the pre-law advisor.

DEPARTMENT OF URBAN EDUCATION

Maria Bhattacharjee, EdD, Chair
Room 601-South, 713-221-8906

FACULTY

Associate Professors: Bhattacharjee, R. Johnson, Key, Sikka
Assistant Professors: Brown, Chen, Cohen, Cmajdalka, Garcia, Hood, Middleton, Mullinnix, Thielemann, Van Horn, Woods-Stellman, Taylor
Lecturers: Paige
Academic Areas: Elementary Education, Bilingual Education, and Secondary Education

Degree Programs

Bachelor of Arts in Interdisciplinary Studies

Certification Areas:
     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

Master of Arts in Teaching

The Master of Arts in Teaching (MAT) with majors in Curriculum and Instruction, Elementary Education, Secondary Education, and Bilingual Education, is designed to support existing teachers and 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:

1. Characteristics and needs of learners in a multicultural settings;

2. Effective teaching practices that enhance student achievement for all students regardless of socioeconomic status, ethnicity, or language spoken;

3. Factors related to the development of effective teaching environments in urban classrooms;

4. Classroom-based research methodology to support "best" instructional practices; and

5. Enriched understanding of academic content areas of language arts, social studies, mathematics, or the natural sciences.

Undergraduate Degree Requirements

The degree programs in Urban Education require a minimum of 132 - 139 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:

a. Formal application to the program

b. 2.5 overall grade point average (GPA) for undergraduate majors or 2.5 overall GPA for post-baccalaureate students.

c. 2.5 GPA in Academic Major courses

d. 42 SCH of course work

e. Successful completion of TASP

f. Completion or Concurrent Enrollment in SOSE 3306 Culture of the Urban School.

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.

Post-baccalaureate Teacher Certification

Students who posses a baccalaureate degree may obtain certification through a deficiency plan. A deficiency plan sponsored by the University of Houston-Downtown requires a minimum of 30 SCH beyond a bachelor's degree. All courses taken in fulfillment of the deficiency plan are to be taken at the University of Houston-Downtown or through the Unversity of Houston System at Fort Bend sites unless a waiver is obtained from the Office of the Dean of Humanities and Social Sciences.

Graduate 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. Admission into the MAT program requires the following:

1. Baccalaureate degree from an accredited university

2. Teacher of record in an urban classroom

3. Acceptable scores on a matrix based on GRE scores (General, and Writing-Analytical) and GPA.

4. Acceptable score on the Test of English as a Foreign Language (TOEFL) for graduates of universities where English is not the native language.

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 (9-10 hours each) and are field-based in selected public schools within several Houston metropolitan area districts.

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:

(1) to observe and interact with master teachers and divergent learners within the school setting.

(2) to interact with children of diverse backgrounds and experiences to create an understanding of themselves, their own culture, and the cultures of others.

(3) to develop a community of learners which acknowledges the similarities of diverse members and appreciates differences.

(4) to plan and implement effective strategies which ensure academic success for all learners

(5) to 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.

PLEASE NOTE:

The State Board for Educator Certification (SBEC) has issued new teacher certification licensure levels.

The Department of Urban Education at UHD has developed new teacher preparation (degree/certification) programs to comply with these levels. Continual program revisions particularly in the secondary programs may occur over the next academic year. 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 which may affect degree plans. Thus constant monitoring of plans is necessary and students are urged to visit regularly with an academic advisor.

Bachelor of Arts in Interdisciplinary Studies

Students seeking a Bachelor of Arts in Interdisciplinary Studies degree will select 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

Early Childhood - Fourth Grade Elementary Generalist (132-137 SCH)

Common Core Requirements

See listing under General Education Requirements in the College of Humanities and Social Sciences. 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 General Psychology is recommended.

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 3305	Foundations of Literacy Development and Instruction EC-8
READ 3306	Language and Literacy (Prerequisite: READ 3305)
READ 3307	Language Arts Instruction (Prerequisite: READ 3305)
ECH 2311	Curriculum for the Early Childhood/Kindergarten Classroom
ECH 2313	The Early Childhood Learning Environment

Select 3 SCH:

ECH 2312	The Young Child
PSY 3303	Child Psychology (Prerequisites: PSY 1303)
GEOG 1302	World Geography

Select 3 SCH:

HIST 2303	Texas History (Prerequisite or Concurrent Enrollment: ENG 1301)
POLS 3309	Texas Politics (Prerequisites: POLS 2303, POLS 2304 and junior standing)
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)
MATH 3321	Math Concepts I (Prerequisites: MATH 1301, Admission to Teacher Education)
MATH 3322	Math Concepts II (Prerequisites: MATH 1301, Admission to Teacher Education)
ENG 3351	Children's Literature (Prerequisite: 3 SCH of literature)

Select 3 SCH:

ENG 3318	Advanced English Grammar for Writers (Prerequisite: ENG 1302 and junior standing)
ENG 3305	Essay Writing (Prerequisite: ENG 1302 and junior standing)

Select 3 SCH:

ENG 3319	Introduction to the Study of Language (Prerequisite: ENG 1302, junior standing)
ENG 3320	History of the English Language (Prerequisite: ENG 1302 and junior standing)
SOSE 3306	Culture of the Urban School (Prerequisite: Introductory course in social sciences)
SOSE 3320	Assessment and Evaluation of Children (Prerequisites: PSY 1303)
ETC 3301	Educational Technology (Prerequisite: CS 1305 or CIS 1301, or demonstrated competencies)
SPAN	3 -8 SCH (depending upon placement)
PED 3304	Aesthetic & Physical Development of Children (Prerequisite: Admission to Teacher Education)

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, READ 3306, MATH 3321, and MATH 3322. Additional Pre-requisite and/or Concurrent Enrollment: SOSE 3306, ETC 3301)

EED 3301	Understanding the Learner in Elementary School
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 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: 132-137 SCH

Early Childhood - Fourth Grade Bilingual Generalist (135-139 SCH)

Common Core Requirements

See listing under General Education Requirements in the College of Humanities and Social Sciences. 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 General Psychology is recommended.

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 Bilingual Generalist certification program.

READ 3305	Foundations of Literacy Development and Instruction EC-8

READ 3306   Language and Literacy Development
(Prerequisite: READ 3305)
ECH 2311   Curriculum for the Early Childhood/
Kindergarten Classroom
ECH 2313   The Early Childhood Learning Environment

Select 3 SCH:
    ECH 2312   The Young Child
    PSY 3303   Child Psychology (Prerequisites:
    PSY 1303 and 3 additional SCH in
    psychology)

Select 3 SCH:
    ENG 3318   Advanced English Grammar for
    Writers (Prerequisite: ENG 1302
    and junior standing)
    ENG 3305   Essay Writing (Prerequisite: ENG
    1302 and junior standing)
    ENG 3319   Introduction to the Study of
    Language

Select 3 SCH:
    ENG 3322   Mexican-American Literature
    (Prerequisite: 3 SCH of literature)
    ENG 3353   Social Class and Literature
    (Prerequisite: 3 SCH of literature)

Select 3 SCH:
    HIST 2303   Texas History (Prerequisite or
    Concurrent Enrollment: ENG 1301)
    POLS 3309   Texas Politics (Prerequisites:
    POLS 2303,   POLS 2304 and junior standing)
    HIST 2309   Ethnic Minorities in American
    History (Prerequisite or Concurrent Enrollment:
    ENG 1301)
    SOC 3304   Minorities in America
    (Prerequisite: SOC 1303)
    SOC 3306   Social Inequity (Prerequisite: SOC
    1303)
    NS 3310   Physical Science Studies (Admission to
    Teacher Education)
    NS 3312   Life Science Studies (Admission to Teacher
    Education)
    MATH 3321   Math Concepts I (Prerequisites: MATH
    1301, Admission to Teacher Education)
    MATH 3322   Math Concepts II (Prerequisites: MATH
    1301, Admission to Teacher Education)
    GEOG 1302   World Geography
    HUM 3330   Second Language Acquisition (Prerequisite:
    PSY 1303)
    SOSE 3306   Culture of the Urban School (Prerequisite:
    Introductory course in social sciences)
    SOSE 3320   Assessment and Evaluation of Children
    (Prerequisites: PSY 1303)
    ETC 3301   Educational Technology (Prerequisite:
    CS 1305 or CIS 1301, or demonstrated
    competencies)

Select 9 SCH: (depending upon placement)
    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 (SPAN 2302 or placement
    by examination)
SPAN 4310   Spanish Linguistics (Prerequisite: SPAN 3301
    or Approval of Chair)
PED 3304   Aesthetic & Physical Development of Children
    (Prerequisite: Admission to Teacher Education)
PED 3314   Children's Literature in Spanish
BED 3311   Foundations of Bilingual/ESL Education

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)
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: 138 SCH

Fourth - Eighth Grade Elementary Generalist (132-137 SCH)

Common Core Requirements

See listing under General Education Requirements in the College of Humanities and Social Sciences. 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 General Psychology is recommended.

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.

READ 3305   Foundations of Literacy Development and Instruction EC-8
READ 3309   Teaching Reading in the Content Areas 4 - 8 (Prerequisite: READ 3305)
READ 3307   Language Arts Instruction (Prerequisite: READ 3305)
ENG 3318   Advanced English Grammar for Writers (Prerequisites: ENG 1302, junior standing)

Select 3 SCH:
ENG 3302   Business and Technical Report Writing (Prerequisite: 3 SCH in literature)
ENG 3305   Essay Writing (Prerequisites: ENG 1302 and junior standing)

Select 3 SCH:
ENG 3351   Children's Literature (Prerequisite: 3 SCH of literature)
ENG 3355   Young Adult Literature (Prerequisite: 3 SCH of literature)

Select 3 SCH:
ENG 3319   Introduction to Language (Prerequisite: ENG 1302, junior standing)
ENG 3320   History of the English Language (Prerequisite: ENG 1302, junior standing)
GEOG 1302   World Geography
HIST 3316   World History since 1500 AD (Prerequisite: Junior Standing)

Select 3 SCH:
SOC 1303   Principles of Sociology (Prerequisite or Concurrent Enrollment: ENG 1301)
PSY 1303   General Psychology (Prerequisite or Concurrent Enrollment: ENG 1301)
ANTH 2302   Cultural Anthropology (Prerequisite or Concurrent Enrollment: ENG 1301)

Select 3 SCH:
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)

Select 3 SCH:
ECON 2301   Principles of Economics I (Prerequisites: MATH 1301 or MATH 1310)
ECON 2302   Principles of Economics II (Prerequisites: MATH 1301 or MATH 1310)
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)
MATH 3321   Math Concepts I (Prerequisites: MATH 1301, Admission to Teacher Education)
MATH 3322   Math Concepts II (Prerequisites: MATH 1301, Admission to Teacher Education)
SOSE 3306   Culture of the Urban School (Prerequisite: Introductory course in social sciences)
SOSE 3320   Assessment and Evaluation (Prerequisites: PSY 1303)
ETC 3301   Educational Technology (Prerequisites: CS 1305 or CIS 1301, or demonstrated competencies)
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
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: 132 - 137 SCH

Fourth - Eighth Grade Bilingual Generalist (138 SCH)

Common Core Requirements
See listing under General Education Requirements in the College of Humanities and Social Sciences. 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 General Psychology is recommended.

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 for students in the Early Childhood - Fourth Grade Bilingual Generalist.

READ 3305	Foundations of Literacy Development and Instruction EC-8
READ 3307	Language Arts Instruction (Prerequisite: READ 3305)
READ 3309	Teaching Reading in the Content Area 4-8 (Prerequisite: READ 3305)
BED 3311	Foundations of Bilingual/ESL Education

Select 3 SCH:
| ENG 3319 | Introduction to the Study of Language |
| ENG 3320 | History of the English Language |

Select 3 SCH:
| ENG 3322 | Mexican-American Literature (Prerequisite: 3 SCH of literature) |
| ENG 3353 | Social Class and Literature (Prerequisite: 3 SCH of literature) |

Select 3 SCH:
| ENG 3318 | Advanced English Grammar for Writers (Prerequisite: ENG 1302 and junior standing) |
| ENG 3305 | Essay Writing (Prerequisite: ENG 1302 and junior standing) |

Select 3 SCH:
HIST 2303	Texas History (Prerequisite or Concurrent Enrollment: ENG 1301)
POLS 3309	Texas Politics (Prerequisites: POLS 2303, POLS 2304 and junior standing)
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)
MATH 3321	Math Concepts I (Prerequisites: MATH 1301, Admission to Teacher Education)
MATH 3322	Math Concepts II (Prerequisites: MATH 1301, Admission to Teacher Education)
GEOG 1302	World Geography
HIST 3316	World History Since 1500 AD (Prerequisite: Junior standing)

Select 3 SCH:
ECON 2301	Principles of Economics I (Prerequisite: MATH 1301 or MATH 1310)
ECON 2302	Principles of Economics II (Prerequisite: MATH 1301 or MATH 1310)
SOSE 3306	Culture of the Urban School (Prerequisite: Introductory course in social sciences)
SOSE 3320	Assessment and Evaluation of Children (Prerequisites: PSY 1303)

Select 9 SCH:
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 (SPAN 2302 or placement by examination)
SPAN 4310	Spanish Linguistics (Prerequisite: SPAN 3301 or Approval of Chair)
ETC 3301	Educational Technology (Prerequisite: CS 1305 or CIS 1301, or demonstrated competencies)
PED 3314	Children's Literature in Spanish

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)

Common Core Requirements

See listing under General Education Requirements in the College of Humanities and Social Sciences. 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 General Psychology or SOC 1303 Principles of Sociology is strongly recommended.

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.

READ 3305   Foundations of Literacy Development and Instruction EC-8
READ 3309   Teaching Reading in the Content Area 4-8 (Prerequisite: READ 3305)
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:
    ENG 3319   Introduction to the Study of Language (Prerequisite: ENG1302, junior standing)
    ENG 3320   History of the English Language (Prerequisite: ENG 1302, junior standing)
    GEOG 1302 World Geography
    HIST 3316   World History since 1500 A.D. (Prerequisite: Junior standing)

Select 3 SCH:
    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:
    SOC 1303   Principles of Sociology (Prerequisite or Concurrent Enrollment: ENG 1301)
    PSY 1303   General Psychology (Prerequisite or Concurrent Enrollment: ENG 1301)

Select 3 SCH:
    ECON 2301 Principles of Economics I (Prerequisites: MATH 1301 or MATH 1310)
    ECON 2302 Principles of Economics II (Prerequisites: MATH 1301 or MATH 1310)

Select 3 SCH:
    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)

Select 3 SCH:
    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)
    SOSE 3306   Culture of the Urban School
    SOSE 3320   Assessment and Evaluation of Children
    ETC 3301   Educational Technology (Prerequisite: CS 1305 or CIS 1301, or demonstrated competencies)
    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

Elementary Education

Bachelor of Arts in Interdisciplinary Studies (120–139 hours)

Students seeking certification in elementary education within the Bachelor of Arts in Interdisciplinary Studies degree will choose the following courses:

Common Core Requirements (42 hours)
See listing under General Education Requirements in the College of Humanities and Social Sciences. Students who have not yet completed their history requirement in the core are urged to fulfill 3 hours of the requirement by taking HIST 2309* Ethnic Minorities in American History. In fulfillment of the Behavioral Sciences requirement, PSY 1303 General Psychology is recommended. If not taken in the core, PSY 1303 should be added to the following preparatory requirements. Students who have not taken 6 hours of science in the core are encouraged to take 6 hours from Natural Sciences 3310, 3311, or 3312.

Preparatory Requirements (24–32 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:
ENG 3302   Business and Technical Report
                Writing
Three hours of mathematics above the level of MATH 1300
ANTH 2302*   Cultural Anthropology
PSY 1303   General Psychology
SOC 1303   Principles of Sociology
SOSE 3306*   Culture of the Urban School
SOSE 3320   Assessment and Evaluation of
                Children
One of the following:
    PSY 2310   Human Growth and Development
    PSY 3303   Child Psychology
    PSY 3305   Adolescent Psychology
    PSY 4304   Learning

Spanish (3–8 hours)
Depending upon placement, either two semesters of lower division Spanish* or SPAN 3301 Advanced Spanish Grammar (While Spanish is the requirement, other languages may be accepted upon appeal.)

Major Requirements and Academic Specializations
Courses required for all (18 hours):
GEOG 1302   World Geography (may be omitted
                here if transferred as part of the core
                curriculum)
MATH 3321   Math Concepts I
MATH 3322   Math Concepts II
ENG 3351   Children's Literature
READ 3305   Foundations of Reading
One course in linguistics:
    ENG 3319   Introduction to the Study of Language
                    or
    ENG 3320   History of the English Language
Within this degree, one elementary academic specialization in either English, History, Speech Communication, Biology or Mathematics must be chosen. Each specialization requires a minimum of 18 hours. Listed here are the required hours not already included in other parts of the degree program:

Academic Specialization in English (9 unduplicated hours)
Six hours in sequence of sophomore survey (three hours from core curriculum can be applied).
    ENG 2301–2302   Literature of the Western World
    ENG 2311–2312   American Literature
    ENG 2313–2314   British Literature
Three hours from genre courses:
    ENG 3311   Studies in Poetry
    ENG 3312   Studies in Fiction
    ENG 3313   Studies in Dramatic Literature
Three hours of upper division English electives by advisement

Academic Specialization in History (12 unduplicated hours)
In addition to the six hours of U.S. History courses from core curriculum, this specialization requires
Three hours of World History
    HIST 3315   World History I or
    HIST 3316   World History II
Nine hours of upper-division History electives approved by the advisor

Academic Specialization in Speech Communication (15 unduplicated hours)
Three hours of lower division speech courses (may be met in core curriculum)
    SPCH 1304   Introduction to Speech
Communication
    SPCH 1385   Communication in the Classroom
    SPCH 2307*   Intercultural Communication
Six hours from:
    SPCH 1302   Oral Interpretation of Literature
    SPCH 1304   Introduction to Speec Communication
    SPCH 2303   Argumentation and Debate
    SPCH 2307
    SPCH 2309   Interpersonal Communication
Nine hours from:
    SPCH 3304   Public Speaking
    SPCH 3306   Business and Professional Speech
                    Communication
    SPCH 3308   Family Communication
    SPCH 3310   Women, Men and Communication
    SPCH 4310   Communication with the Organization
    SPCH 4390   Issues in Speech Communication

Academic Specialization in Biology (12–20 hours)

BIOL 1301/1101	General Biology I with Lab (may be omitted here if taken as part of the core curriculum)
BIOL 1302/1102	General Biology II with Lab (may be omitted here if taken as part of the core curriculum)
BIOL 3305/3105	Comparative Anatomy with Lab
BIOL 3320/3120	Comparative Animal Physiology with Lab

Four hours from:

BIOL 3303/3103	General Genetics with Lab
BIOL 3304/3104	Vertebrate Embryology with Lab
BIOL 3330/3130	Plant Biology with Lab

Academic Specialization in Mathematics (9–12 unduplicated hours)

MATH 1301 College Algebra (may be omitted here if taken as part of the core curriculum or the preliminary requirements)
Six lower level hours, with MATH 1301 as a prerequisite, such as:

MATH 1305	Finite Mathematics and Applications
MATH 1306	Fundamentals of Calculus with Applications

Three upper level hours, for example:

MATH 3309	Statistical Analysis for Business Applications I
MATH 4312	History of Applied Mathematics

Professional Development Sequence (28 hours)

Courses in the professional development sequence must be taken as a block of courses. These courses will not be offered as individual courses. These blocks will be offered at various times to accommodate student schedules. Blocks I and II each require 15 clock-hours weekly for a semester, 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. Admission to these blocks is by approval of the advisor/coordinator of the Urban Education Department.

Interdisciplinary Block I (10 hours)

EED 3301	Understanding the Learner in the Elementary School
EED 3311	Integrating Language Arts and Social Studies in the Elementary Classroom
READ 3303	Emergent Literacy Curriculum, Instruction and Assessment for Early Childhood
CS 1105	Technology in Education Lab

Interdisciplinary Block II (9 hours)

EED 3302	Enhancing Student Achievement in the Elementary School
EED 3312	Using Effective Teaching Strategies in Math and Science
READ 3304	Literacy Curriculum, Instruction and Assessment in Grades 3–8

Interdisciplinary Block III (9 hours)

SOSE 4303*	Current Issues in Urban Teaching
EED 4301	Student Teaching in the Elementary Classroom
EED 4302	Student Teaching in the Elementary Classroom

Bilingual Education

Bachelor of Arts in Interdisciplinary Studies (126–137 hours)

Students seeking certification in bilingual education within the Bachelor of Arts in Interdisciplinary Studies degree will choose the following courses.

Common Core Requirements (42 hours)

See listing under General Education Requirements in the College of Humanities and Social Sciences. Students who have not yet completed their history requirement in the core are urged to fulfill 3 hours of the requirement by taking HIST 2309* Ethnic Minorities in American History. In fulfillment of the Behavioral Sciences requirement, PSY 1303 General Psychology is recommended. If not taken in the core, PSY 1303 should be added to the following preparatory requirements.

Preparatory Requirements (27–30 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 courses that may have been taken as part of the core:

ANTH 2302*	Cultural Anthropology
PSY 1303	General Psychology
SOC 1303	Principles of Sociology
SOSE 3306*	Culture of the Urban School
SOSE 3320	Assessment and Evaluation of Children
PSY 2310	Human Growth and Development
SPAN 2301	Intermediate Spanish I or SPAN 2311 Spanish I for Native Speakers (may be bypassed by placement exam)
SPAN 2302	Intermediate Spanish II or SPAN 2312 Spanish II for Native Speakers (may be bypassed by placement exam)
MATH	3 hours above 1300
ENG 3302	Business and Technical Report Writing

Major Requirements

Bilingual Delivery System and Courses for Elementary School Teachers (30–36 hours)

GEOG 1302	World Geography
MATH 3321	Math Concepts I
MATH 3322	Math Concepts II
ENG 3351	Children's Literature
SPAN 3301	Advanced Composition and Grammar
SPAN 4310	Spanish Linguistics
HUM 3330	Second Language Acquisition

ENG 3322	Introduction to Mexican American Literature or another literature course with the advisor's approval
READ 3305	Foundations of Reading

Three hours from:
ENG 3319	Introduction to the Study of Language
ENG 3320*	History of the English Language

Six hours from:
HIST 3313*	Urban History
SOC 3304*	Minorities in America
HUM 3321*	Hispanic Culture and Civilization
HUM 3304*	American Ethnic Heritage
HUM 3320*	Foreign Literature in Translation

Or, with the advisor's approval, other courses that explore culture and ethnicity

Professional Development Sequence (28 hours)

Courses in the professional development sequence must be taken as a block of courses. These courses will not be offered as individual courses. These blocks will be offered at various times to accommodate student schedules. Blocks I and II each require 15 clock-hours weekly for a semester, 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. Admission to these blocks is by approval of the advisor/coordinator of the Urban Education Department.

Interdisciplinary Block I (10 hours)
BED 3301	Understanding the Second Language Learner
BED 3311	Foundations of Bilingual/ESL Education
READ 3304	Literacy Curriculum, Instruction and Assessment in Grades 3–8
CS 1105	Technology in Education Lab

Interdisciplinary Block II (9 hours)
BED 4301	Teaching Language Arts and Reading in Spanish
BED 4311	Integrating Curriculum in a Bilingual Classroom
READ 3303	Emergent Literacy Curriculum, Instruction and Assessment for Early Childhood

Interdisciplinary Block III (9 hours)
SOSE 4303*	Current Issues in Urban Teaching
EED 4301	Student Teaching in the Elementary Classroom
EED 4303	Student Teaching in the Bilingual/ESL Classroom

Secondary Education

Anjoo Sikka, PhD, Coordinator
Room 601-South, 713-221-8906

Students seeking secondary certification with their undergraduate degree will select from the following:

Bachelor of Science in Biological and Physical Sciences with Life–Earth Science Certification

Bachelor of Science in Biologicial and Physical Sciences with Physical Science Certification

Any two of the above science teaching fields may be combined for certification and a bachelor's degree in Biological and Physical Sciences.

Bachelor of Science in Biological and Physical Sciences with Composite Science certification, including teaching fields in biology, chemistry, geology and physics

Bachelor of Science in Social Sciences with Composite Social Studies certification, including teaching fields in government, history, geography, and economics

Bachelor of Arts in English with English Certification

Students seeking secondary certification must be advised in their program by the Department of Urban Education, and they should also consult an advisor in the department offering the degree major for degree-specific assistance. Formal admission to teacher education through the Urban Education Department requires the following: 2.5 overall grade point average, 2.5 GPA in teaching field, 60 hours of course work, successful completion of TASP (Reading: 230, Writing: 220, Math: 230), completion or concurrent enrollment in SOSE 3306 Culture of the Urban School, and completion or concurrent enrollment in a public speaking course such as SPCH 1304, 1385, or 2307.

Graduation requires successful completion of all course work including the three interdisciplinary blocks. In addition, certification requires acceptable scores on state-mandated ExCET examinations and recommendation from the Department of Urban Education. Urban Education will determine when a student is eligible to take the ExCET exam.

Teaching Field—English
(Bachelor of Science in Professional Writing)
(36-hour teaching field)
ENG 3302	Business and Technical Report Writing
ENG 3304	Advanced Business and Technical Report Writing
ENG 3330	Production I
ENG 3331	Production II
ENG 4322	Editing, Rewriting and Copyreading

Twelve additional hours in writing and/or English language
Nine hours of upper level literature and/or theory
(Additional twelve hours in directly related fields in humanities and fine arts are found within the degree requirements.)

Teaching Field—Mathematics
(Bachelor of Science in Applied Mathematics)
(49-hour teaching field)
MATH 1301	College Algebra
MATH 1505	Introduction to Analysis
MATH 2305	Discrete Mathematics

MATH 2307	Linear Algebra
MATH 2401	Calculus I
MATH 2402	Calculus II
MATH 2403	Calculus III
MATH 3301	Differential Equations
MATH 3302	Statistics
MATH 3308	Numerical Methods
MATH 4294	Senior Seminar

Three hours from:

| MATH 3306 | Applied Modern Algebra or |
| MATH 3307 | Intermediate Analysis |

Nine hours of senior-level mathematics courses by advisement from CMS department including a W-course or MATH 4395.

Teaching Field—Biology
(Bachelor of Science in Biology—Biology Certification)
(36-hour teaching field)
Basic Science and Math (39 Hours)
Computer Literacy—CS 1408 or 1410
Seven hours from Mathematics; MATH 1404 and 2300 or SOS 2307
Biology 1301/1101
Biology 1302/1102
Microbiology 2305/2105
Chemistry 1307/1107
Chemistry 1308/1108
Physics 1307/1107
Physics 1308/1108

Upper Level Science (31–34 Hours)
Chemistry 3301/3201
Chemistry 3302/3202
Chemistry 4304/4104
Biology 3303/3103
Three hours from BIOL 4320, 4325, 4230, 4330 or 4390
Three hours from BIOL 3310/3110, 3330/3130, 3340/3140, or 4390
Six hours from BIOL 3304/3104, 3305/3105, 3320/3120, 4303, 4310/4110, 4313/4113, or 4390
Three hours from BIOL 3301, 4260, 4340, 4350, 4360, or 4390

Bachelor of Science in Chemistry—Chemistry Certification
Basic Science and Math (44 Hours)
Computer Literacy—CS 1408 or 1410
Math 1404
Math 2401
Math 2402
Math 2403
Biology 1301/1101
Biology 1302/1102
Chemistry 1307/1107
Chemistry 1308/1108
Physics 1307/1107
Physics 1308/1108
Upper Level Science (29 Hours)
Chemistry 3301/3201
Chemistry 3302/3202
Chemistry 3310/3110
Chemistry3320
Chemistry 3330/3130

Chemistry 4340/4140
Four hours of 4000-level electives in chemistry

Bachelor of Science in Biological and Physical Sciences
Life–Earth Science Certification
Basic Science and Math (44 Hours)
Computer Literacy—CS 1408 or 1410
Math 1404
Biology 1301/1101
Biology 1302/1102
Chemistry 1307/1107
Chemistry 1308/1108
Geology 1305/1105
Geology 1306/1106
Geology 1309
Fours hours of Chemistry electives
Upper Level Science (22 Hours)
Biology 3305/3105 or 3320/3120
Biology 4320
Biology 4360
Geology 3411
Five hours of Biology and/or Geology electives

Bachelor of Science in Biological and Physical Sciences
Physical Science Certification
Basic Science and Math (39 Hours)
Computer Literacy—CS 1408 or 1410
Math 1404
Biology 1301/1101
Biology 1302/1102
Chemistry 1307/1107
Chemistry 1308/1108
Physics 1307/1107
Physics 1308/1108
Geology 1305/1105

Upper Level Science (25 Hours)
Chemistry 3301/3201
Chemistry 3310/3110
Chemistry 4340
Chemistry 4362
Chemistry 4362
Six hours of Chemistry and/or Physics electives
Four hours of Biology electives

Any two of the above science teaching fields may be combined for certification and a Bachelor's Degree in Biological and Physical Sciences.

Teaching Field—Science Composite with certification in Biology, Chemistry, Geology, and Physics
(Bachelor of Science in Biological and Physical Sciences)
(56-hour teaching field)

Bachelor of Science in Biological and Physical Sciences
Science Composite Certification (Biology, Chemistry, Physics, Geology)
Basic Science and Math (40 Hours)
Computer Literacy—CS 1408 or 1410
Math 1404
Biology 1301/1101
Biology 1302/1102

Chemistry 1307/1107
Chemistry 1308/1108
Geology 1305/1105
Geology 1306/1106
Physics 1307/1107
Physics 1308/1108

Upper Level Science (24 Hours)
Six hours of Biology and/or Chemistry 4000-level lecture electives
Eighteen hours of Science electives*
(must include at least 3 hrs. Geology)
*Electives should be chosen to give a total of 12 hours in at least one area of science.

**Teaching Field—Social Studies with certification in government, history, geography and economics
(48-hour teaching field)**
History I (Hist 1305, 1306, 2303 or 2309)
History II (Hist 1305, 1306, 2303 or 2309)
Political Science 2303
Political Science 2304
9 hours of upper level history with advisor approval
9 hours of upper level political science with advisor approval
Geography 1301
Geography 1302
Economics 2301
Economics 2302
3 hours from POL 4390, HIST 3399, or HIST 4309, SOS 4301

**Teaching Field—English
(Bachelor of Arts in English)
(36-hour teaching field)**
Sophomore Literature 23XX
*3 hours of sophomore literature in sequence with core
English 3311
English 3312
English 3313
6 hours from ENG 3309, 4305, 3316, 3317, 3319, 3320
21 hours of upper level literature or theory with advisor approval

Professional Development Sequence (28 hours)
Courses in the professional development sequence must be taken as a block of courses. These courses will not be offered as individual courses. These blocks will be offered at various times to accommodate student schedules. Blocks I and II each require 15 clock-hours weekly for a semester, 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. Admission to these blocks is by approval of the advisor/coordinator of the Urban Education Department.

Interdisciplinary Block I (10 hours)

SED 3301	Understanding the Learner in the Secondary School
SED 3311	Curriculum Foundations for Teaching in the Urban Secondary School
READ 3311	Teaching Reading in the Secondary School Content Area
CS 1105	Technology in Education Lab

Interdisciplinary Block II (9 hours)

SED 3302	Enhancing Student Achievement in the Secondary School
SED 3312	Curriculum in the Secondary School
SOSE 3321	Assessment and Evaluation in the Classroom

Interdisciplinary Block III (9 hours)

SOSE 4303*	Current Issues in Urban Teaching
SED 4301	Student Teaching in the Secondary School
SED 4302	Student Teaching in the Secondary School

Post-baccalaureate Teacher Certification

Students who possess a baccalaureate degree may obtain certification through a deficiency plan. Certification is available in elementary, secondary and bilingual education.

A deficiency plan sponsored by the University of Houston-Downtown requires a minimum of 30 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 Humanities and Social Sciences. Students enrolled in the Fort Bend Multi-Institutional Teaching Center may consider courses taken at the UHS at Fort Bend sites as "at UHD."

Master of Arts in Teaching

Director of Graduate Studies: Shirley Key, Ed.D.

Students seeking a Master of Arts in Teaching degree will select among four options:
> Elementary Education (Certification Track)
> Bilingual Education (Certification Track)
> Secondary Education (Certification Track)
> Curriculum & Instruction (For Certified Teachers only)

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 Certification of Educators in Texas, and upon recommendation of the Director of Graduate Studies.

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 will select three semester hours from:

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
SPCH 6301	Speech Communication for the Elementary/Middle School Teacher
SPCH 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

NS 6301	Selected Topics in Earth and Environmental Science
NS 6311	Selected Topics in Life Science
NS 6321	Selected Topics in Physical Science
BIOL 6301	Selected Topics in Advanced Biology
CHEM 6301	Selected Topics in Advanced Chemistry
GEOL 6331	Selected Topics in Advanced Geology and Physics

Social Studies Strand

GEOG 6301	World Cultural Geography
HIST 6301	Seminar in Modern European History
HIST 6302	Seminar in U.S. 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

MAT with Major in Secondary Education (with initial teacher certification)

MAT 6307	Managing the Secondary Environment for Student Success
MAT 6308	Curriculum and Instruction in Secondary Schools
MAT 6309	Assessment and Evaluation in 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

Total: 39 hours

Sciences and Technology

COLLEGE OF SCIENCES AND TECHNOLOGY

George Pincus, PhD, PE, Dean
Kenneth Oberhoff, PhD, Assistant 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 which the faculty accomplish 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.

The UHD Scholars Academy

Coordinator: Phyllis Griffard, PhD
Room 740-South, 713 221-8471

The Scholars Academy is a new, 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, U.S. Army Research Office and the U.S. 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 a graduate 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 TASP math, reading and writing component scores of 250 each; and be enrolled as a full-time student and major within one of the degree programs in the College of Sciences and Technology.

Programs of Study

The College of Sciences and Technology offers degree programs leading to:

Bachelor of Science with majors in:
    Applied Mathematics
    Applied Microbiology
    Applied Physics
    Biological and Physical Sciences
    Biology
    Biotechnology
    Chemistry
    Computer Science
    Industrial Chemistry
    Quantitative Methods

Bachelor of Science in Engineering Technology with majors in:
    Control and Instrumentation Networks*
    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

General Requirements

Prerequisites
Registration for any course offered by the College of Sciences and Technology which 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.

COMPUTER AND MATHEMATICAL SCIENCES DEPARTMENT

Kenneth Oberhoff, PhD, Chair
Room 705-South, 713-221-8012

Faculty

Professors:	Aló, Barnes, Deeba, de Korvin, London, Rodriguez, Sirisaengtaksin
Associate Professors:	Becerra, Beheshti, Berrached Hodgess, Hu, Oberhoff, Turski, Vobach, Waller, Xie
Assistant Professors:	Anderson, DeLaViña, Simeonov, Tharp, Yoon, Zafiris
Lecturers:	Baker, Gad, Leveille, Nadler-Blumberg, Nakamura, Nguyen, Rosenthal-Simmons, Solomon
Emeriti:	Wood, 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. Academic progress by a departmental major is periodically evaluated by the departmental Academic Screening Committee, 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, optimally, 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 percent (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 which 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

Elias Deeba, DA, 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, SPCH 1304 and ENG 3302.

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 satisfactorily complete a prescribed set of courses (see departmental application for advising form) in the prospective degree plan. Students must achieve a grade of "C" or better in the prescribed courses to be accepted as a major. 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

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 22)
Additional General Education Requirements: Students majoring in applied mathematics are also required to take ENG 3302, SPCH 1304 and CS 1410.
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 4306; MATH 4312; MATH 4301; MATH 4328.

Mathematical Sciences Requirements (44 hours)
MATH 2305, 2401, 2402, 2403, 2307, 3301, 3302, 3306, 3307, 3308, 4294. Nine hours of additional upper-level senior mathematical sciences courses other than MATH 3309, including a W course or MATH 4395.

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

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 applications, as well as for positions designing and building the computer applications of tomorrow.

General Education and Core Requirements (see page 22)
Additional general education requirements for students majoring in Computer Science are ENG 3302 and SPCH 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 4312; CS 4301; CS 4328.

Mathematics Requirements (20 hours)
MATH 2305, 2401, 2402, 2307, 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

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 digital computers and technological advances being made in this area have encouraged the development of, and have resulted in, important advances that constitute significant mathematical tools for such areas as the life sciences, administrative/managerial sciences and the social/behavioral sciences. The major in Quantitative Methods, through its core of courses, emphasizes those tools of discrete mathematics that have impacted greatly the development and advancement of areas such as those mentioned above. Consequently, this major complements the major in Computer Science and Applied Mathematics and will be selected by students desiring a quantitatively oriented program that emphasizes statistics and the decision sciences.

General Education and Core Requirements (see page 22)
Additional general education requirements for students majoring in quantitative methods are: ENG 3302; PHIL 2303; SPCH 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; MATH 4306; MATH 4312; MATH 4301; MATH 4328.

Mathematical Sciences Requirements (39 hours)
CS 1408 or CS 1410, MATH 1305, 1306, 2305, 2307, 3309, 3310, 4294, 4395 (or approved W course) and four courses chosen from MATH 4300, 4303, 4307, 4309, 4310, 4311. The sequence 2401, 2402, 3302 may be substituted for 1305, 1306, 3309, 3310.

Minor (18 hours minimum)
Any university-approved minor will satisfy this requirement.

Electives (27 hours to complete a minimum of 128 hours)

Minors Programs

Minor in Applied Mathematics (21 hours minimum)

Required Courses
MATH 2401, MATH 2402, MATH 2403, MATH 2307. Six hours required from: MATH 3301, MATH 3302, MATH 3306, MATH 3307, MATH 3308, MATH 4301, MATH 4302, MATH 4304, and MATH 4305. The six upper level hours must be completed at UH-D. All hours counted toward the minor must be "C" or better.

Minor in Computer Science (19 hours minimum)

Required Courses:
CS 1410; CS 2310; six hours beyond CS 1305 and six hours of upper-level Computer Science. The six upper level hours must be completed at UH-D. All hours counted toward the minor must be "C" or better.

Minor in Statistics (18 hours minimum)

Required Courses:
The sequence MATH 1305, MATH 1306, MATH 3309 or the sequence MATH 2401, MATH 2402, MATH 3302; and nine hours required from: MATH 3310, MATH 4300, MATH 4306, MATH 4307, MATH 4309 and MATH 4310. Six upper level

hours must be completed at UHD. All hours counted toward the minor must be "C" or better.

Minor in Decision Sciences (18 hours minimum)

Required Courses:
The sequence MATH 1305, MATH 1306, MATH 3309 or the sequence MATH 2401, MATH 2402, MATH 3302; and 9 hours required from: MATH 4303, MATH 4306, MATH 4307 and MATH 4311.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 designed 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 UH-D 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 extremely active.

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: Groendyke, 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 and 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 a diverse social, educational, and ethnic background. The Department is committed to maintain an educational environment where students can significantly enhance their academic standings, computer application experience, problem-solving, communication and team-working skills. With a strong sense of professionalism, the 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 Great Houston Area. The close partnership forged between the Department and local industries ensures our academic programs are dynamic and most up-to-date. Such a partnership also benefits the graduate placement opportunities.

Our academic programs include solid foundation courses in 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 curriculum of all Engineering Technology majors to promote the philosophy of productivity. Design oriented semester projects embedded in technological courses give students ample opportunities in gaining practical experience and preparing themselves to be productive engineering technologists after graduation.

The Department provides an innovative teaching and learning environment. Classroom lecturing is typically combined with laboratory experiments and computer simulation studies. The degree programs aim at empowering students with lifelong learning and continuous improvement capabilities. Furthermore, the team of highly qualified engineering technology faculty is committed to provide extended support to students' learning activities both inside and outside classrooms; the open-door policy and flexible schedule accommodates the needs of working students; the mentoring system ensures each student having individual consulting time; and the existence of a number of student chapters within the Department 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 Institutions
The Engineering Technology Department houses the home base of the Society of Piping Engineers and Designers (SPED).

Facilities
The modern laboratory facilities in 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

The labs are equipped with experiment material, equipment, instruments, PCs and computer networks, and various up-to-date design and application software tools of 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 admissions to Engineering Technology degree programs, declaration of major,

transferability of courses, and requirements for graduation, please contact Department office at 738N, 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 TASP test, complet ing 30 hours of course credits which are applicable to the Engineering Technology degree programs and be in good academic standing. Engineering Technology faculty will recommend course selection and provide sequencing guidelines to ensure that students make optimum 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 from an engineering technology major comply with the UHD academic policy on Graduation Requirements. In addition, the student should complete all the requirements listed for the specific degree program. It is students' responsibility to become familiarized with the requirements listed in this catalog and in their degree plan and 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 that also includes the summer periods. Careful planning is required if a student intend 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 business, humanities and sciences, and also to enhance the employment prospects of students enrolled in non-technical majors. Laboratories associated with the courses give the 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

1. Sample for students pursuing the BBA, major in Purchasing & Materials Management:

   ENGR 1401, ET 2401 or ENGR 1400, EET 1411 and EET 2431 or other courses chosen in consultation with engineering technology adviser.

2. Sample program for students pursuing the Bachelor of Science, major in Computer Science:

EET 1412, EET 2431, EET 2421 and EET 3435 and EET 3451 or other courses chosen in consultation with engineering technology adviser.

Control and Instrumentation Electronics Design Technology Major (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 Control and Instrumentation Electronics Technology degree program is the application of computer technology and modern electronics to industrial process control and instrumentation systems. As such, the program prepare graduates who

- Have a sound foundation in the analysis, design, testing, and implementation of instrumentation and control systems. Be proficient in applying their knowledge (in mathematics, sciences, and engineering) and standard tools, especially computer software and hardware tools, for technical problem solving.

- Are all-around individuals with strong social skills, able to work in team environments, competent in communication and information presentation, and have 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 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 on computer technology, electrical/electronic systems and communication systems. The broad technical background of control and instrumentation graduates opens up a bright employment prospect, from process industries to telecommunications.

General Education Core Requirements

ENGR 1400	PC Applications in Engineering
ENG 1302*	Composition II
HIST 1305	U.S. History to 1877
HIST 1306	U.S. 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	U.S. Government I
POLS 2304	U.S. Government II
PSY 1303	General Psychology
SPCH 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)	
Writing Proficiency Examination	

Control and Instrumentation Electronics Design Requirements
Lower Division

EET 1411	Electric Circuits with Lab
ENGR 2410I	Analysis of Engineering Networks
EET 2421	Electronic Devices with Lab
EET 2431	Digital Logic Design
MATH 2402	Calculus II

Upper Division

ET 4323	Technology Seminar
ET3308	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 off Automation and Control
EET 3451	Instruments and Transducers with Lab
EET 3461	Analog andDigital Communications 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

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 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 prepare 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, for technical problem solving.

• Are all-around individuals with strong social skills, able to work in team environments, competent in communication and information presentation, and have 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 Houston area due to the growing demand from process industries (petrochemical and oil refining), power companies,

and energy industry. Safety and Fire engineering technology has its basis on computer technology, thermodynamics, fluid mechanics, materials science and data communications. The broad technical background of safety and fire graduates opens up a bright employment prospect, from process industries to energy industry.

General Education Core Requirements

ENGR 1400	PC Applications in Engineering
ENG 1302	Composition II
HIST 1305	U.S. History to 1877
HIST 1306	U.S. 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	U.S. Government I
POLS 2304	U.S. Government II
PSY 1303	General Psychology
SPCH 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)
Writing Proficiency Examination

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
ENGR2407	Surveying with GIS-GPS
ENGR 2410	Analysis of Engineering Networks

Upper Division

ET 3307	Applied Thermodynamics
ET 3308	Materials Science
ENGR3311	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

Career Electives (9 hours)

ENG 3302 and ET 4323 satisfy the W and S application course requirements of the General Education Program.

Process Piping Design Major (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 Process Piping Engineering Technology degree program is the application of modern technology to design, layout, analysis, construction, operation, and maintenance of pining systems. As such, the program prepare graduates who

• Have a sound foundation in the analysis, design, construction, and operation of piping systems including pipes, pumps, reactors and pressure vessels. Be proficient in applying their knowledge (in mathematics, sciences, and engineering) and standard tools, especially computer software and hardware tools, for technical problem solving.

• Are all-around individuals with strong social skills, able to work in team environments, competent in communication and information presentation, and have a strong sense of professionalism.

• Are committed to continuous improvement and lifelong learning.

Process piping specialists are among the most sought-after personnel in Houston area due to the growing demand from process industries (petrochemical and oil refinery), power companies, and energy industries. Process piping engineering technology has its basis on computer technology, materials science, thermodynamics, engineering mechanics, stress analysis and plant layout. The broad technical background of process piping graduates opens up a bright employment prospect, from oil companies to process industries.

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	U.S. History to 1877
HIST 1306	U.S. 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	U.S. Government I
POLS 2304	U.S. Government I
PSY 1303	General Psychology
SPCH 1304	Introduction to Speech Communication
ENG 3302	Business and Technical Report Writing
ENG 23xx	Literature
Fine Arts	Fine Arts (three hours)

Literature (three hours, sophomore level or above)
Writing Proficiency Examination

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 Major (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, construction techniques to the design of structures. As such, the program prepare graduates who

- Have a sound foundation in the analysis, design, testing, and construction of civil structures (Bridges, buildings and communication towers). Be proficient in applying their knowledge (in mathematics, sciences, and engineering) and standard tools, especially computer software and hardware tools, for technical problem solving.

- Are all-around individuals with strong social skills, able to work in team environments, competent in communication and information presentation, and have a strong sense of professionalism.

- Are committed to continuous improvement and lifelong learning.

Structural analysis specialists are among the most sought-after personnel in 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 on computer technology, construction systems and material science. The broad technical background of structural analysis graduates opens up a bright employment prospect, from construction industries to telecommunications and transportation systems.

General Education Core Requirements

ENGR 1400	PC Applications in Engineering
ENG 1302	Composition II
HIST 1305	U.S. History to 1877
HIST 1306	U.S. 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	U.S. Government I
POLS 2304	U.S. Government II
SPCH 1304	Introduction to Speech Communication
ENG 3302	Business and Technical Report Writing
PSY 1303	General Psychology
Fine Arts	Fine Arts (three hours)

Literature (three hours, sophomore level or above)
Writing Proficiency Examination

Structural Analysis and Design Requirements

Lower Division

CHEM 1307/1107	General Chemistry with Lab
ENGR 1401	Engineering Graphics I
EET 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 (9) 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.

NATURAL SCIENCES DEPARTMENT

Larry Spears, PhD, Chair
Room 813-North, 713-221-8015

FACULTY

Professors:	Capeheart, Hoffmann-Pinther, Loftin, Merrill, Spears
Associate Professors:	Abramowitz, Christmas, Driy, Flosi, Montgomery
Assistant Professors:	Derrick, Farnsworth, Gulati, Lyons, McCullough, Merkle, Morris-Smith, Slough, Uzman
Lecturer:	Griffard
Emeriti:	Fefer, 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:
    Applied Microbiology
    Applied Physics
    Biology
    Biological and Physical Sciences
    Biotechnology
    Chemistry
    Industrial Chemistry

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 interested in biology may pursue the Bachelor of Science in Biology. 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 Applied Microbiology. Students who are interested in physics may pursue the Bachelor of Science in Applied Physics. Students interested in environmental science or science education may seek the Bachelor of Science program in the Biological and Physical Sciences. The department anticipates approval of a Bachelor of Science in Biotechnology during 2000–2001.

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 TASP, 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 (655 South). All students accepted into the department will be assigned an advisor. The advising of students interested in a particular health professions area will be coordinated by the department's Health Professions Advisory Committee. 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 percent 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
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.

For the above, no upper-level courses with grades of D will be counted; no transfer credits with grades of D can be applied; must have a minimum GPA of 2.0 in the applied courses; and the upper-level courses must be taken at UH-Downtown. Credit for directed studies, field experiences, honors thesis and undergraduate research cannot apply.

Science Certification Programs

Scott Slough, EdD, Coordinator
Room 724-A 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, State of Texas. Detailed curriculum guides are available for each program in room 813N.

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 or CHEM or GEOL or 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 Applied Microbiology

Joan Abramowitz, PhD, Coordinator
Room 807-North, 713-221-8486

The Bachelor of Science degree in Applied 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 Applied Microbiology Major (129–130 hours)

The program consists of three basic areas. The first area contains courses which 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 which 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 (33 hours)

ENG 1301, 1302, 3302 and 2000-level literature course; three hours of fine arts; SPCH 1304 or 3306, POLS 2303 and 2304, Social and Behavioral Sciences (one of the following: ANTH 2301, ANTH 2302, CJ 1301, ECO 1301, GEOG 1301, GEOG 1302, PSY 1303, SOC 1303), and two of the following: HIST 1305, 1306, 2303 and 2309

Basic Mathematics and Science (43 hours)

CS 1408 or 1410, MATH 1404*, 2300 and 2401, BIOL 1301/1101 and 1302/1102, CHEM 1307/1107 and 1308/1108, PHYS 1307/1107 and 1308/1108, MBIO 2305/2105

Major Area of Emphasis (41 or 42 hours)

BIOL 3303/3103 and 4320, CHEM 3301/3201, 3302/3202, and 4340/4140, and MBIO 4110 (two credits), 4310/4111, 3320, 4320/4120 and 4340/4140, and one of the following: CHEM 3310/3110, CHEM 4342, BIOL 4310/4110 or BIOL 4313/4113

Electives (12 hours)

Six of the 12 hours may be satisfied by appropriate field experience.

Bachelor of Science

Major in Applied Physics

Peter Hoffmann-Pinther, PhD, Coordinator
Room 811-North, 713-221-8174

The Bachelor of Science in Applied Physics is designed to provide a firm knowledge of the foundations of physics necessary to understand and analyze physical problems of current interest in different fields, coupled with the mathematical and laboratory skills to address those problems successfully. Bachelor's degree physicists are employed in a variety of fields in industrial and government laboratories. They make contributions to such diverse areas as energy, aerospace and medicine. Currently UHD has a cooperative program with NASA, and other programs are being developed.

The program has two tracks: computational physics and scientific instrumentation. The computational physics track emphasizes the use of computers and mathematical models in solving physical problems. Individuals with this background often act as liaison between engineering groups and their science and mathematics counterparts.

The scientific instrumentation track focuses on the tools necessary to implement industrial and laboratory applications of measurement and control through the use of computers and sensing devices. Both tracks are intertwined with other disciplines: computational physics with the Department of Computer and Mathematical Sciences and scientific instrumentation with the Department of Engineering Technology. While pursuing the program, students obtain an interdisciplinary background in physics, mathematics, computers and electronics.

Course Requirements for the Applied Physics Major (128–131 hours)

The program consists of 128 to 131 semester credit hours, of which 33 are for general education courses, 80 to 83 hours are in the sciences and mathematics and 15 hours are electives. The core curriculum is designed to provide a well-rounded graduate and consists of courses in English composition, speech, literature, fine arts, American history and political science, behavioral sciences, mathematics, natural sciences and computer science. All general requirements for graduation in the Department of Natural Sciences apply to this degree.

General Education Requirements (33 hours)

ENG 1301, 1302, and 3302 or 4306; 3 hours of sophomore literature; 3 hours of Fine Arts; POLS 2303, 2304; two of the following: HIST 1305, 1306, 2303 and 2309; SPCH 1304 or 3306; Social and Behavioral Sciences (one of the following: ANTH 2301, ANTH 2302, CJ 1301, ECO 1301, GEOG 1301, GEOG 1302, PSY 1303, SOC 1303)

Basic Mathematics and Science (59 hours)

PHYS 2401/2101, 2402/2102, 3401, 3307, 3330, 3393, 4308, 4401; CHEM 1307/1107, 1308/1108; MATH 2401, 2402, 2403, 3301, 4304; CS 1408 or 1410

Major Area of Emphasis

Computational Physics (21 hours)

MATH 2307, 4302; CS 3308; and 12 hours from PHYS 3300, 3399, 4320, MATH 3302, 3315, 4305, 4311; CS 4301

Scientific Instrumentation (21-24 hours)

EET 3432, 3435, 4434 and three of the following: EET 3433, 3451, 3461, ET 4302, PHYS 3300, 3399

Electives (15 hours)

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 which 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 (*44-48* hours)

ENG 1301, 1302 and a 2000-level literature course; SPCH 1304 or 3306; two of the following: HIST 1305, 1306, 2303 and 2309; POLS 2303 and 2304; CS 1408 or 1410; 6 hours of behavioral and social sciences; 3 hours of arts and humanities; 3 hours of fine arts; MATH 1404 or 1505.

Lower-Level Science Requirements (22-26)

Select six of the following lecture/laboratory courses: BIOL 1301/1101, 1302/1102; CHEM 1307/1107, 1308/1108; GEOL 1305/1105,1306/1106 or GEOL 1307, 1308; PHYS 1307/1107, 1308/1108 or 2401/2101, 2402/2102.

Upper-Level Requirements (36 hours)

At least 18 hours of the 3000-4000 level course work must be in the natural sciences with a minimum science grade point average of 2.0 or better and at least 7-8 hours must be in 4000-level science lecture courses with at least one laboratory course. Field experience or thesis credit cannot be used to satisfy this requirement.

Electives (17–21 hours)

Electives at any level chosen with advisor approval.

NOTE: No more than 28 hours of natural science courses (not including the hours of science listed under the Lower-Level Science Requirement) of the 126 hours of course work in this degree plan may be in a single discipline, and no more than 18 hours of the required upper-level science may be in a single discipline. The Department of Natural Sciences has five disciplines: biology, chemistry, geology, microbiology and physics.

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 curriculum 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 interest 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 (33 hours)

ENG 1301, 1302 and a 2000-level literature course; one of the following: ENG 3302, 3325, 3324, or 4306; one of the following: SPCH 1304, 3304, or 3306; two of the following: HIST 1305, 1306, 2303 and 2309; POLS 2303 and 2304; 3 hours of behavioral or social sciences; 3 hours of fine arts.

Basic Mathematics and Science (39 hours)

BIOL 1301/1101 and 1302/1102; CHEM 1307/1107 and 1308/1108; CS 1408 or 1410; MATH 1404 and 2300 or SOS 3312; MBIO 2305/2105; PHYS 1307/1107 and 1308/1108.

Upper-Level Science (31–34 hours)

BIOL 3303/3103; CHEM 3301/3201, 3302/3202 and 4304/4104; one of the following: BIOL 4320, 4325, 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 (27 hours)

Must include at least eight hours of upper-level electives.

Bachelor of Science

Major in Biotechnology

Akif Uzman, PhD, Coordinator

Room 810-North, 713- 221-8488

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 masters 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 (33 hours)

ENG 1301, 1302, and a 2000-level literature course; one of the following ENG 3302, 3325, or 4306; one of the following SPCH 1304, 3304, or 3306; two of the following HIST 1305, 1306, 2303, 2309; POLS 2303 and 2304; 3 hours of behavioral or social sciences; 3 hours of fine arts.

Basic Mathematics and Science (43 hours)

BIOL 1301/1101 and 1302/1102; CHEM 1307/1107 and 1308/1108; CS 1408 or 1410; 11 hours of mathematics to include MATH 1404 and 2401, MATH 2300 or SOS 3312; MBIO 2305/2105; and 8 additional hours of lower-level biology or physics.

Upper-Level Science (39-41 hours)

BIOL 3303/3103; BIOL 3330/3130; BIOL 4230, BIOL 4330; CHEM 3301/3201; CHEM 4340/4140; MBIO 4310/4111; MBIO 4320/4120; BIOL 4290 (Computational Biology); BIOL 4210 (Seminar in Biology) or MBIO 4210. Choose one of the following: BIOL 4325; BIOL 4313/4113; CHEM 3310/3110. Choose 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*

The Bachelor of Science in Chemistry provides a flexible, broad-based curriculum in the Liberal Arts and the Natural Sciences for students pursuing a degree in chemistry. The program allows the student to tailor a degree program to his/her unique needs, yet does so within the confines of a traditional major in chemistry. This degree is particularly appropriate for students interested in pursuing post-graduate studies in medicine or related health professions or those who wish to prepare for a career in secondary education.

Course Requirements for the Chemistry Major (135 hours)
The approved degree plan for this program will be determined through consultation between the student, his/her advisor, and the chairperson of the Department of Natural Sciences. A minimum of 135 hours of university-level course work will be required. A maximum of 66 hours from a junior or community college may be approved as credit toward this degree.

General Education Requirements (36 hours)
ENG 1301, 1302; ENG 3302, or 4306; and three hours of 2000-level literature; SPCH 1304 or 3306; two of the following: HIST 1305, 1306, 2303 and 2309; POLS 2303 and 2304; one of the following: ART 1301, 1302, 1310,3301; DRA 1301, 3303, 3304; MUS 2301, 2302; Behavioral Sciences one of the following: ANTH 2302, PSY 1303, SOC 1303, SOSE 3306; and 3 hours of enhancement not already met by the curriculum.

Basic Science and Mathematics (44 hours)
CS 1408 or 1410; MATH 1404, 2401, 2402, & 2403: BIOL 1301/1101 & 1302/1102, CHEM 1307/1107 & 1308/1108; PHYS 1307/1107 & 1308/1108.

Upper-Level Chemistry Courses (28 hours)
CHEM 3301/3201 & 3302/3202
CHEM 3310/3110
CHEM 3320
CHEM 3330/3130
CHEM 4340/4140
Three additional hours of 4000-level electives in chemistry

Approved Electives (27 hours)
Must include at least eight hours of upper-level courses.

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 rigorous program that prepares the student for a wide variety of technical positions in the chemical and petroleum industries of the greater Houston area, an area 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. Courses required for this program also provide students with the knowledge needed to pursue graduate studies in chemistry or related scientific fields.

Course Requirements for the Industrial Chemistry Major (133 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 of chemistry that are important to the world of industrial chemistry. Some of the courses included in this area are organic chemistry, physical chemistry, instrumental analysis, environmental chemistry, poly-

mer chemistry and industrial organic 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 (36 hours)
ENG 1301, ENG1302 ; ENG 3302 or 4306 and a 2000-level literature course; three hours in fine arts; three hours in economics; SPCH 1304 or 3306; POLS 2303 and 2304; two of the following: HIST 1305, 1306, 2303 and 2309; PSY 1303 or SOC 1303 or ANTH 2302

Basic Mathematics and Science (43 hours)
CS 1408 or 1410; MATH 2401, 2402 and 2403; BIOL 1301/1101 and 1302/1102; CHEM 1307/1107/1101 and 1308/1108; GEOL 1307; PHYS 1307/1107, 1308/1108

Major Area of Emphasis (45 hours)
CHEM 3301/3201, 3302/3202, 3310/3110, 3320, 3330/3130, 3332/3132, 4310, 4360, 4362, 4364 and 4340/4140; PHYS: 3401

Electives (9 hours)
Six of the nine 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, 1306/1106; ENG 1301/1302, and 6 hours of sophomore English; POLS 2303, 2304; 3 hours of mathematics; HIST 1305, 1306; PSY 1303; SOC 1303; SPCH 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, GOV 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, 1306; CHEM 1305/1105, 1306/1106, ENG 1301, 1302; POLS 2303, 2304; HIST 1305, 1306; MATH 2300 or SOS 2307; 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, 1306; 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 4340/4140; ENG 1301, 1302, and 6 hours of sophomore English; POLS 2303, 2304; HIST 1305, 1306; MATH 1404, 2401, 2300; MBIO 2305/2105; PHYS 1307/1107, 1308/1108; PSY 1303; SOS 3312; 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 (Pharm.D) 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 Technological 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, 2300; MBIO 2305/2105; PHYS 1307/1107, PSY 1303, PSY 2302 or SOC 1303; SPCH 1304, 3304 or 3306; 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.

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; ENG 1301, 1302; POLS 2303, 2304; HIST 1305, 1306; MATH 1301 and 2300; PHYS 1307/1107, 1308/1108; PSY 1303, 2310; SOC 1303; SPCH 1304. 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 60 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, 2300, MBIO 2305/2105, nine hours of behavioral and social sciences; eight hours of electives in health-related areas.

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, 1306; CHEM 1307/1107, 1308/1108, 3301/3201, 4340/4140; MATH 2401 or 2300; MBIO 2305/2105; PHYS 1307/1107, 1308/1108; SPCH 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 TASP 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.

Business

COLLEGE OF BUSINESS

Bobby G. Bizzell, PhD, Dean
Herbert F. Rebhun, PhD, Assistant Dean
Room 1009-North, 713-221-8179

Business Student Records Office, 1039-North, 713-221-8689, Email: cobadvise@dt.uh.edu

MANAGEMENT, MARKETING & BUSINESS ADMINISTRATION DEPARTMENT

Carl Ruthstrom, PhD, Chair
Caroline Ashe, EdD, Assistant Chair
Room 1005-North, 713-221-8017

FACULTY

Professors:	Bizzell, Efraty, Evans, Jackson, Johnson, Shipley, Woods
Associate Professors:	Ashe, Aven, Hagedorn, Ruthstrom, Spilger, Stanberry, Strain
Assistant Professors:	Jones, Kaser, Kauffman, Maranville, Mitchell
Emeriti:	Eckles, Hebert, Robinson, Rooney, Tinkler, Wilkinson
One year appointments:	Bradshaw, Cuevas, P. K. Ghosh

Programs of Study

Bachelor of Business Administration with major programs in:
    Administrative Management
    General Business

Management
Marketing
Purchasing and Supply Management
Minor programs in:
Administrative Services Management
General Business (open only to students outside the College of Business)
Management
Marketing
Professional Land Management
Purchasing

FINANCE, ACCOUNTING AND COMPUTER INFORMATION SYSTEMS DEPARTMENT

Asghar Nazemzadeh, PhD, Chair
David Durr, PhD, Assistant Chair
Room 1005-North, 713-221-8017

FACULTY

Professors:	Duangploy, Islam, Leavins, Nazemzadeh, Rebhun, Smith, Wadhwa
Associate Professors:	Durr, Hashemi, Marvasti, Omer, Pelaez, Penkar, Robbins, Shelton, Williams
Assistant Professor:	Bressler, DeVries, Serrett
Emeritus:	McNeill
One-Year Appointments:	McMahon, Phelps

Programs of Study

Bachelor of Business Administration with major programs in:
Accounting
Computer Information Systems
Finance
International Business
Minor programs in:
Accounting
Computer Information Systems
Economics
Finance
International Business

Accreditation

The programs of the College of Business are accredited by AACSB International —The Association to Advance Collegiate Schools of Business

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 which 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 which 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 two 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.

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—Admission, Declaration of Major, Advising, Graduation
In order to declare a major in the College of Business, the student must first be admitted to the College. The admission policy is described in the "Academic Requirements for the College of Business," which is available in the Office of Business Student Services in Room 1041 North. The Application for Admission to the College of Business is obtained from the University College in Room 655 South. A student may be admitted to the College of Business as early as the completion of 30 hours of college-level work. Once admitted, the student must declare a major by the completion of 60 hours of college-level credit.

Information concerning requirements for admission to the college, declaration of major, transferability of courses and requirements for graduation are available from the Office of Business Student Services in Room 1041-North.

An advisor must authorize registration for any course in the college which has a course prerequisite. A student may register by telephone if eligible. A student generally will not be allowed to register for any junior or senior-level course in the College of Business until he/she has been admitted to the College of Business and has completed 60 hours of college-level work. Students not admitted to the College of Business who desire to take junior and senior level courses in the College of Business must have an overall grade point average of 2.0 on course work completed at the University of Houston-Downtown and be authorized by a College of Business 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.

Students are responsible for meeting the requirements for graduation of the College of Business as well as those of the university. Therefore, students should become familiar with the academic requirements of the College of Business and should refer to them each time they plan their semester program of study. One requirement is that students must have a minimum 2.0 GPA on all course work taken in the College of Business to receive a BBA.

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 percent 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. 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. These minors can be selected by

both students pursuing a Bachelor of Business Administration degree and those pursuing other degrees offered by the university. 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 percent of the credit hours applied toward graduation.

Information concerning the procedures for declaring a minor are available from the Office of Business Student in Room N-1039.

Bachelor of Business Administration

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.

Major in Accounting

Marvin Williams, JD, Coordinator
Room N1024, 713-221-8918

Accounting Faculty: Duangploy, Leavins (Fiesta Chair), Omer, Serret, Shelton, 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 (any major), [2] two basic accounting courses plus an additional 30 hours of accounting, [3] 20 hours of business related courses, and [4] 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 (5125055599) for clarification of part-time student exemptions and the 150 hour grace period.

General Education Core Requirements

CIS 1301	Introduction to Computer-Based Systems
ENG 1301	Composition I
ENG 1302	Composition II
HIST 1305	U.S. History to 1877
HIST 1306	U.S. History after 1877
MATH 1301	College Algebra
POLS 2303	U.S. Government I
POLS 2304	U.S. Government II

Social and Behavioral Sciences (one of the following: ANTH 2301, ANTH 2302, CJ 1301, ECO 1301, GEOG 1301, GEOG 1302, PSY 1303, SOC 1303)
Fine Arts (3 hours)
Literature (3 hours, sophomore level or above)
Natural Science (6 hours)
Speech (3 hours) SPCH 3306 will satisfy requirement
Satisfactory completion of the Writing Proficiency Examination

Application Course Requirements
The writing skills requirement of the University General Education core requirements is satisfied by ENG 3302 and ADM 4301 which are listed as requirements in the business core below. The Nonverbal Analytical Skills requirement of the University General Education Core requirements is satisfied by MATH 1306 which is listed as a requirement in the business core below.

Enhancement Course Requirements
The general education core content 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 these dimensions should not be studied in isolation; that 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.

Business Core Requirements
Lower Division

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
BA 2301	Business Cornerstone

Upper Division

BA 3301	Legal Environment of Business
ENG 3302	Business and Technical Report Writing
FIN 3302	Business Finance
MATH 3309	Statistical Analysis for Business Applications I
MGT 3301	Management of Organizations
MKT 3301	Principles of Marketing
MGT 3332	Quantitative Decision Making
ADM 4301	Business Communications
BA 4302	Business Strategy

Accounting major requirements

ACC 3300	Analysis of Financial Reporting
ACC 3301	Intermediate Accounting I
ACC 3302	Intermediate Accounting II
ACC 3303	Cost Accounting
ACC 3304*	Accounting Information Systems (instead of CIS 3302)
ACC 4301	Individual Income Taxation
ACC 4302	Corporation Taxation
ACC 4303	Advanced Accounting
ACC 4304	Auditing

Lower-level electives: 3 hours

Upper-level Business electives: 3 hours

Upper-level Accounting electives: 3 hours

*for Accounting majors only

Total number of hours for BBA with major in Accounting: 126

Major in Administrative Management

Carolyn Ashe EdD, Coordinator
Room 1018-North, 713-221-8051, E-mail: ashe@dt.uh.edu

Administrative Management Faculty: Ashe, Jones, Kaser

In today's global society, business in the United States and abroad continues to expand. With this expansion comes an increased demand for qualified personnel who possess a high level of technical skills, and also managerial skills to guide and direct other people. The Administrative Management major provided students the opportunity to develop in such areas as records and information management, human resource management, information processing, and other administrative responsibilities. Students will acquire an understanding of the decision-making approach to office and virtual workplace management.

The International Association of Administrative Professionals offers certification as a professional.

General Education Core Requirements

CIS 1301	Introduction to Computer-Based Systems
ENG 1301	Composition I
ENG 1302	Composition II
HIST 1305	U.S. History to 1877
HIST 1306	U.S. History after 1877
MATH 1301	College Algebra
POLS 2303	U.S. Government I
POLS 2304	U.S. Government II

Social and Behavioral Sciences (one of the following: ANTH 2301, ANTH 2302, CJ 1301, ECO 1301, GEOG 1301, GEOG 1302, PSY 1303, SOC 1303)
Fine Arts (3 hours)
Literature (3 hours, sophomore level or above)
Natural Science (6 hours)
Speech (3 hours) SPCH 3306 will satisfy requirement
Satisfactory completion of the Writing Proficiency Examination

Application Course Requirements

The writing skills requirement of the University General Education core requirements is satisfied by ENG 3302 and ADM 4301 which are listed as requirements in the business core below. The Nonverbal Analytical Skills requirement of the University General Education Core requirements is satisfied by MATH 1306 which is listed as a requirement in the business core below.

Enhancement Course Requirements

The general education core content 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 these dimensions should not be studied in isolation; that 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.

Business Core Requirements
Lower Division

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

Upper Division

ENG 3302	Business and Technical Report Writing
MATH 3309	Statistical Analysis for Business Applications I
BA 3301	Legal Environment of Business
CIS 3302	Management Information Systems
FIN 3302	Business Finance
MGT 3301	Management of Organizations
MKT 3301	Principles of Marketing
MGT 3332	Quantitative Decision Making
ADM 4301	Business Communications
BA 4302	Business Strategy (Policy)

The Administrative Management major requirements

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
Choose one:	
MGT 3304	Labor Management Relations or
MGT 3306	Compensation Management
ADM 4302	Supervisory Problems
ADM 4303	Administrative Management
ADM 4311	Seminar in Administrative Management

**Lower/Upper-level Outside College of Business electives:
3 hours**

Upper-level Business electives: *3* hours

Total number of hours for BBA with major in Administrative Management: 126

Major in Computer Information Systems

Ruth Robbins, EdD, Coordinator
Room N1044, 713-221-8594

Computer Information Systems Faculty: DeVries, Hashemi, Hogan, Rebhun, Robbins

The Computer Information Systems (CIS) program has been designed in consultation with business computer practitioners and employers of business computer personnel. The program is patterned after the national model curriculum developed by educators and computer professionals, endorsed by the Association for Information Technology Professionals (AITP) and adopted by many universities throughout the nation. The CIS program received national recognition when it was named one of the outstanding undergraduate programs in the United States by the Data Processing Management Association (DPMA) and the DPMA Education Foundation.

Graduates of this program are prepared to design and implement computer information systems for small to medium-sized companies or to work in larger firms as business application programmers, programmer/analysts, systems analysts or in other computer information systems related positions. Graduates have experience programming and using software packages in mainframe, client–server and microcomputer environments. This program has been designed for the computer professional who is involved in increasing the operating efficiency and profitability of a business. It builds upon a sound general education base and combines courses in accounting, economics, management, marketing and finance with computer-based information systems courses.

General Education Core Requirements:

CIS 1301	Introduction to Computer-Based Systems
ENG 1301	Composition I
ENG 1302	Composition II
HIST 1305	U.S. History to 1877
HIST 1306	U.S. History after 1877
MATH 1301	College Algebra
POLS 2303	U.S. Government I
POLS 2304	U.S. Government II

Social and Behavioral Sciences (one of the following: ANTH 2301, ANTH 2302, CJ 1301, ECO 1301, GEOG 1301, GEOG 1302, PSY 1303, SOC 1303)
Fine Arts (3 hours)
Literature (3 hours, sophomore level or above)
Natural Science (6 hours)
Speech (3 hours) SPCH 3306 will satisfy requirement
Satisfactory completion of the Writing Proficiency Examination

Application Course Requirements
The writing skills requirement of the University General Education

core requirements is satisfied by ENG 3302 and ADM 4301 which are listed as requirements in the business core. The Nonverbal Analytical Skills requirement of the University General Education Core requirements is satisfied by MATH 1306 which is listed as a requirement in the business core.

Enhancement Course Requirements
The general education core content 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 these dimensions should not be studied in isolation; that 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.

Business Core Requirements
Lower Division

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
BA 2301	Business Cornerstone

Upper Division

BA 3301	Legal Environment of Business
ENG 3302	Business and Technical Report Writing
FIN 3302	Business Finance
MATH 3309	Statistical Analysis for Business Applications I
MGT 3301	Management of Organizations
MKT 3301	Principles of Marketing
MGT 3332	Quantitative Decision Making
ADM 4301	Business Communications
BA 4302	Business Strategy

Computer Information Systems major requirements

CIS 2301	Computer Algorithms and Problem Solving
CIS 2303	Introduction to Business Application Programming
CIS 2304	Intermediate Business Application Programming
CIS 3301	Systems Analysis and Design
CIS 3303	Computer Hardware, System Software and Architecture
CIS 3305	Communications and Distributed Processing Systems
CIS 3306	Data Files and Data Bases
CIS 4312	Systems Development Project

Lower-level/Business electives: 3 hours

Upper-level Non-Business electives: 3 hours

Upper-level CIS electives: 6 hours (only 3 hours in either CIS 3399 or CIS 4380 are allowed)

Total number of hours for BBA with major in Computer Information Systems: 126

Major in Finance

Samuel H. Penkar, DBA, Coordinator
Room 1035-North, 713-221-8965, E-mail: penkar@dt.uh.edu

Finance Faculty: Durr, Pelaez, Penkar, Smith

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 (CFA) or as a Certified Financial Planner (CFP). 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 Core Requirements

CIS 1301	Introduction to Computer-Based Systems
ENG 1301	Composition I
ENG 1302	Composition II
HIST 1305	U.S. History to 1877
HIST 1306	U.S. History after 1877
MATH 1301	College Algebra
POLS 2303	U.S. Government I
POLS 2304	U.S. Government II

Social and Behavioral Sciences (one of the following: ANTH 2301, ANTH 2302, CJ 1301, ECO 1301, GEOG 1301, GEOG 1302, PSY 1303, SOC 1303)
Fine Arts (3 hours)
Literature (3 hours, sophomore level or above)
Natural Science (6 hours)
Speech (3 hours) SPCH 3306 will satisfy requirement
Satisfactory completion of the Writing Proficiency Examination

Application Course Requirements

The writing skills requirement of the University General Education core requirements is satisfied by ENG 3302 and ADM 4301 which are listed as requirements in the business core below. The Nonverbal Analytical Skills requirement of the University General Education Core requirements is satisfied by MATH 1306 which is listed as a requirement in the business core below.

Enhancement Course Requirements

The general education core content 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 these dimensions should not be studied in isolation; that 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.

Business Core Requirements

Lower Division

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
BA 2301	Business Cornerstone

Upper Division

BA 3301	Legal Environment of Business
CIS 3302	Management Information Systems
ENG 3302	Business and Technical Report Writing
FIN 3302	Business Finance
MATH 3309	Statistical Analysis for Business Applications I
MGT 3301	Management of Organizations
MKT 3301	Principles of Marketing
MGT 3332	Quantitative Decision Making
ADM 4301	Business Communications
BA 4302	Business Strategy

Finance major requirements

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

Lower-level Business electives: 3 hours

Upper-level Business electives: 3 hours

Upper-level Finance Electives: 6 hours

Total number of hours for BBA with major in Finance: *126*

Major in General Business

Kurt Stanberry, JD, MBA
Room 1056-North, 713-221-8672

General Business Faculty: Spilger, Stanberry

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.

General Education Core Requirements

CIS 1301	Introduction to Computer-Based Systems
ENG 1301	Composition I
ENG 1302	Composition II
HIST 1305	U.S. History to 1877
HIST 1306	U.S. History after 1877
MATH 1301	College Algebra
POLS 2303	U.S. Government I
POLS 2304	U.S. Government II

Social and Behavioral Sciences (one of the following: ANTH 2301, ANTH 2302, CJ 1301, ECO 1301, GEOG 1301, GEOG 1302, PSY 1303, SOC 1303)
Fine Arts (3 hours)
Literature (3 hours, sophomore level or above)
Natural Science (6 hours)
Speech (3 hours) SPCH 3306 will satisfy requirement
Satisfactory completion of the Writing Proficiency Examination

Application Course Requirements

The writing skills requirement of the University General Education core requirements is satisfied by ENG 3302 and ADM 4301 which are listed as requirements in the business core below. The Nonverbal Analytical Skills requirement of the University General Education Core requirements is satisfied by MATH 1306 which is listed as a requirement in the business core below.

Enhancement Course Requirements

The general education core content 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 these dimensions should not be studied in isolation; that 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.

Business Core Requirements

Lower Division

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

Upper Division

ENG 3302	Business and Technical Report Writing
MATH 3309	Statistical Analysis for Business Applications I
BA 3301	Legal Environment of Business
CIS 3302	Management Information Systems
FIN 3302	Business Finance

MGT 3301	Management of Organizations
MKT 3301	Principles of Marketing
MGT 3332	Quantitative Decision Making
ADM 4301	Business Communications
BA 4302	Business Strategy (Policy)

General Business Major requirements are

BA 3302	Commercial Law

Upper level elective: 3 hours outside the College of Business. 27 hours of business courses (beyond the core requirements) from at least three of the following areas:

- Accounting (ACC)
- Administrative Management (ADM)
- Business Administration (BA)
- Computer Information Systems (CIS)
- Economics (ECO)
- Finance (FIN)
- Management (MGT)
- Marketing (MKT)
- Professional Land Management (PLM)

No more than 12 hours of the 27 hours can be taken in any one area. At least 21 of these 27 hours must be designated as junior or senior level courses which are not being counted toward a second business major. 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 advanced hours.

At least *fifty percent (50%)* of the upper division business credits must be taken from the University of Houston-Downtown.

Total number of hours required for BBA with major in General Business: 126

Major in International Business

Anisul Islam, PhD, Coordinator
Room N1029, 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 Core Requirements

CIS 1301	Introduction to Computer-Based Systems
ENG 1301	Composition I
ENG 1302	Composition II
HIST 1305	U.S. History to 1877
HIST 1306	U.S. History after 1877
MATH 1301	College Algebra
POLS 2303	U.S. Government I
POLS 2304	U.S. Government II

Social and Behavioral Sciences (one of the following: ANTH 2301, ANTH 2302, CJ 1301, ECO 1301, GEOG 1301, GEOG 1302, PSY 1303, SOC 1303)
Fine Arts (3 hours)
Literature (3 hours, sophomore level or above)
Natural Science (6 hours)
Speech (3 hours) SPCH 3306 will satisfy requirement
Satisfactory completion of the Writing Proficiency Examination

Application Course Requirements

The writing skills requirement of the University General Education core requirements is satisfied by ENG 3302 and ADM 4301 which are listed as requirements in the business core below. The Nonverbal Analytical Skills requirement of the University General Education Core requirements is satisfied by MATH 1306 which is listed as a requirement in the business core below.

Enhancement Course Requirements

The general education core content 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 these dimensions should not be studied in isolation; that 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.

Business Core Requirements
Lower Division

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
BA 2301	Business Cornerstone

Upper Division

BA 3301	Legal Environment of Business
CIS 3302	Management Information Systems
ENG 3302	Business and Technical Report Writing
FIN 3302	Business Finance
MATH 3309	Statistical Analysis for Business Applications I
MGT 3301	Management of Organizations
MKT 3301	Principles of Marketing
MGT 3332	Quantitative Decision Making
ADM 4301	Business Communication/
BA 4302	Business Strategy

International Business Requirements
Required Course: (18 hours from the following 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

Language Requirement: (6 to 8 hours)
Depending upon placement, either two semesters (8 hours) of lower division or 6 hours of more advanced language courses.

Business Electives: (6 hours from 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 take one of the following courses:

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

Foreign Language courses in addition to the above 8 hours.

Total number of hours required for BBA with major in International Business: 126

Major In Management

Margaret Shipley, PhD, Coordinator
Room 1060-North, 713-221-8571, E-mail: shipley@dt.uh.edu

Management Faculty: Aven, Bizzell, Efraty, Maranville, Mitchell, Shipley

The management major introduces the student to the dynamics of the management of organizations. It exposes 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 Core Requirements

CIS 1301	Introduction to Computer-Based Systems
ENG 1301	Composition I
ENG 1302	Composition II
HIST 1305	U.S. History to 1877
HIST 1306	U.S. History after 1877
MATH 1301	College Algebra
POLS 2303	U.S. Government I
POLS 2304	U.S. Government II

Social and Behavioral Sciences (one of the following: ANTH 2301, ANTH 2302, CJ 1301, ECO 1301, GEOG 1301, GEOG

1302, PSY 1303, SOC 1303)
Fine Arts (3 hours)
Literature (3 hours, sophomore level or above)
Natural Science (6 hours)
Speech (3 hours) SPCH 3306 will satisfy requirement
Satisfactory completion of the Writing Proficiency Examination

Application Course Requirements
The writing skills requirement of the University General Education core requirements is satisfied by ENG 3302 and ADM 4301 which are listed as requirements in the business core below. The Nonverbal Analytical Skills requirement of the University General Education Core requirements is satisfied by MATH 1306 which is listed as a requirement in the business core below.

Enhancement Course Requirements
The general education core content 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 these dimensions should not be studied in isolation; that 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.

Business Core Requirements
Lower Division
MATH 1305	Finite Math with Applications
MATH 1306	Fundamentals of Calculus with Applications
ACC 2301	Financial Accounting
ACC 2302	Managerial Accounting
BA 2301	Business Cornerstone
ECO 2301	Principles of Economics I
ECO 2302	Principles of Economics II

Upper Division
ENG 3302	Business and Technical Report Writing
MATH 3309	Statistical Analysis for Business Applications I
BA 3301	Legal Environment of Business
CIS 3302	Management Information Systems
FIN 3302	Business Finance
MGT 3301	Management of Organizations
MKT 3301	Principles of Marketing
MGT 3332	Quantitative Decision Making
ADM 4301	Business Communications
BA 4302	Business Strategy (Policy)

Management major requirements
MGT 4308	Applied Organizational Behavior
MGT 4330	Project Management

18 Credit hours are to be selected from the following courses
Minimum of 12 credit hours (four courses) selected from:
MGT 3302	Human Resource Management
MGT 3304	Labor Management Relations
MGT 3305	Planning and Budgeting
MGT 3306	Compensation Management
MGT 3307	Equal Opportunity Management
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 6 credit hours (two courses) selected from:
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

Upper Level Business electives: 6 hours

Lower/Upper Level Open Electives: 3 hours

Total number of hours for BBA with Major in Management: 126.

Major In Marketing

Gary Jackson, PhD, Coordinator
Room N1046, 713-221-8915

Marketing Faculty: Jackson, Johnson, 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 the 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 Core Requirements
CIS 1301	Introduction to Computer-Based Systems
ENG 1301	Composition I
ENG 1302	Composition II
HIST 1305	U.S. History to 1877
HIST 1306	U.S. History after 1877
MATH 1301	College Algebra
POLS 2303	U.S. Government I
POLS 2304	U.S. Government II

Social and Behavioral Sciences (one of the following: ANTH 2301, ANTH 2302, CJ 1301, ECO 1301, GEOG 1301, GEOG 1302, PSY 1303, SOC 1303)
Fine Arts (3 hours)
Literature (3 hours, sophomore level or above)
Natural Science (6 hours)
Speech (3 hours) SPCH 3306 will satisfy requirement
Satisfactory completion of the Writing Proficiency Examination

Application Course Requirements

The writing skills requirement of the University General Education core requirements is satisfied by ENG 3302 and ADM 4301 which are listed as requirements in the business core below. The Nonverbal Analytical Skills requirement of the University General Education Core requirements is satisfied by MATH 1306 which is listed as a requirement in the business core below.

Enhancement Course Requirements

The general education core content 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 these dimensions should not be studied in isolation; that 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.

Business Core Requirements

Lower Division

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

Upper Division

ENG 3302	Business and Technical Report Writing
MATH 3309	Statistical Analysis for Business Applications I
BA 3301	Legal Environment of Business
CIS 3302	Management Information Systems
FIN 3302	Business Finance
MGT 3301	Management of Organizations
MKT 3301	Principles of Marketing
MGT 3332	Quantitative Decision Making
ADM 4301	Business Communications
BA 4302	Business Strategy (Policy)

Marketing Major Requirements:

MKT 4305	Consumer Behavior
MKT 4306	Marketing Research
MKT 4309	Marketing Management & Strategy

12 credit hours are to be selected from the following courses:

MKT 3302	Personal Selling
MKT 3303	Business Marketing
MKT 3304	International Marketing
MKT 3305	Promotional Strategy
MKT 3399	Directed Study in Marketing
MKT 4307	Traffic & Transportation
MKT 4308	Exporting & Importing
MKT 4390	Selected Topics in Marketing

Upper Level Business Electives: 6 hours
Upper Level Electives outside the COB: 6 hours
Total number of hours for BBA with Major in Marketing: 126

Major in Purchasing and Supply Management

Ralph Kauffman, PhD, Coordinator
Room N1017, 713-221-8962

Purchasing Faculty: Kauffman, Ruthstrom

Every year over $1,500 billion of materials are purchased by manufacturing firms alone. Federal, state and local governments purchase 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 represent either a dollar available for another project or for tax reductions.

Career opportunities in the Purchasing and Supply 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 Purchasing and Supply 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 the only AACSB International accredited Purchasing and Supply Management major 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 Core Requirements

CIS 1301	Introduction to Computer-Based Systems
ENG 1301	Composition I
ENG 1302	Composition II
HIST 1305	U.S. History to 1877
HIST 1306	U.S. History after 1877
MATH 1301	College Algebra
POLS 2303	U.S. Government I
POLS 2304	U.S. Government II

Social and Behavioral Sciences (one of the following: ANTH 2301, ANTH 2302, CJ 1301, ECO 1301, GEOG 1301, GEOG 1302, PSY 1303, SOC 1303)
Fine Arts (3 hours)
Literature (3 hours, sophomore level or above)
Natural Science (6 hours)
Speech (3 hours) SPCH 3306 will satisfy requirement
Satisfactory completion of the Writing Proficiency Examination

Application Course Requirements

The writing skills requirement of the University General Education core requirements is satisfied by ENG 3302 and ADM 4301 which are listed as requirements in the business core below. The Nonverbal Analytical Skills requirement of the University General Education Core requirements is satisfied by MATH 1306 which is listed as a requirement in the business core below.

Enhancement Course Requirements:
The general education core content 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 these dimensions should not be studied in isolation; that 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.

Business Core Requirements
Lower Division

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

Upper Division

ENG 3302	Business and Technical Report Writing
MATH 3309	Statistical Analysis for Business Applications I
BA 3301	Legal Environment of Business
CIS 3302	Management Information Systems
FIN 3302	Business Finance
MGT 3301	Management of Organizations
MKT 3301	Principles of Marketing
MGT 3332	Quantitative Decision Making
ADM 4301	Business Communications
BA 4302	Business Strategy (Policy)

Purchasing and Supply Management requirements

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

Upper-level Business electives: 6 hours

Upper Level Elective Outside the College of Business: 3 hours

Note: Recommended electives for Purchasing and Supply Management Majors include BA 3302, ECO 3303, ECO 4301, MGT 4312, MGT 4313, MGT 4330, MKT 3303, MKT 3304, and MKT 4308.

Total number of hours for BBA with major in Purchasing and Supply Management: 126

Minor Programs

General Academic Requirements for Minor:

◆ 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 may be applied to a minor program (ACC 4380, ADM 4380, BA 4380, CIS 4380, FIN 4380, MGT 4380, MKT 4380, or PLM 4380).

◆ 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 which 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, E-mail: cobadvise@dt3.dt.uh.edu.

Minor in Accounting (21 hours total)
Required Courses (15 hours)

ACC 2301	Financial Accounting
ACC 2302	Managerial Accounting
ACC 3300	Analysis of Financial Reporting
ACC 3301	Intermediate Accounting I
ACC 4301	Individual Income Taxation

Elective Courses (6 hours)
Choose any two of the following:

ACC 3302	Intermediate Accounting
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 4323	International Accounting

Minor in Administrative Management (18 hours total)
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 any 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 (21 hours total)
Required Courses (18 hours)

CIS 2301	Computer Algorithms and Problem Solving

CIS 2303	Introduction to Business Application Programming
	OR
CIS 2304	Intermediate Business Application Programming
CIS 3301	Systems Analysis and Design
CIS 3303	Computer Hardware-System Software and Architecture
CIS 3305	Communications and Distributed Processing Systems
CIS 3306	Data Files and Databases

Elective Courses (3 hours)
Choose any 4000 level CIS course

Minor in Economics (18 hours total)
Required courses (6 hours)
| ECO 2301 | Principles of Economics I |
| ECO 2302 | Principles of Economics II |

Elective Courses (12 hours)
Choose any four upper level (3000 or 4000 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 Finance (18 hours total)
Required Courses (12 hours)
FIN 3305	Money and Banking
FIN 4305	Investments
FIN 4309	Seminar in Finance
FIN 4303	International Finance

Elective Courses (6 hours)
Choose two additional upper level (3000 or 4000 level) FIN courses

Minor in General Business (18 hours total)
Open only to Non-Business Majors. At least 12 of the 18 hours must be upper division (3000 or 4000 level).
Required Courses (6 hours)
| MGT 3301 | Management of Organizations |
| MKT 3301 | Principles of Marketing |

Elective Courses (12 hours)
Select four courses from those with the following designations:
ADM	Administrative Management
BA	Business Administration
MGT	Management
MKT	Marketing
PLM	Professional Land Management

No more than six hours in any one field (Administrative Management, Business Administration, Management, Marketing, Professional Land Management,) can be counted toward a minor in General Business.

Minor in International Business (18 hours total)
Required course (3 hours)
| BA 3320 | International Business |

Elective courses (15 hours)
Choose five courses from 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

One elective course may be chosen from the following:
SPCH 2307	InterCultural Communication
POLS 4303	International Politics
PHIL 3322	World Religions

Minor in Management (18 hours total)
Required Courses (6 hours)
| MGT 3301 | Management of Organizations |
| MGT 4308 | Applied Organizational Behavior |

Elective Courses (12 hours)
Minimum of 6 credit hours (2 courses) selected from:
MGT 3302	Human Resource Management
MGT 3304	Labor Management Relations
MGT 3305	Planning and Budgeting
MGT 3306	Compensation Management
MGT 3307	Equal Opportunity Management
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

Maximum of 6 credit hours (two courses) selected from:
MGT 3303	Negotiating Skills and Techniques
MGT 3308	Purchasing Management
MGT 3309	Materials Management
BA 3305	Entrepreneurship
BA 3308	Business Ethics

Minor in Marketing (18 hours total)
Required Courses (12 hours)
Twelve hours of upper-level (3000 or 4000) courses designated MKT.
Elective Courses (6 hours)
Choose two courses from 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 Professional Land Management (18 hours total)
Required Courses (9 hours)
PLM 2301	Introduction to the Oil Business
PLM 4301	Legal Aspects of Oil and Gas Law
PLM 4303	Land Management Practices

Elective Courses (9 hours)
Choose three courses from the following:
ACC 3307	Oil and Gas Accounting
BA 3303	Environmental Issues in Business
BA 3309	Real Estate Law
FIN 3311	Real Estate Valuation
MGT 3303	Negotiating Skills and Techniques

Minor in Purchasing and Supply Management (18 hours total)
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 courses from the following:
    MGT 4311   Federal Government Procurement
    MGT 4314   Quality Management
    MGT 4315   Supply Chain Management
    MKT 3303   Industrial Marketing
    MKT 3304   International Marketing
    MKT 4307   Traffic and Transportation
    BA 3302   Commercial Law
    MGT 4330   Project Management

UHD	Common Course Number	UHD	Common Course Number	UHD	Common Course Number
ACC 2301	ACCT 2301	CS 2401	COSC 2425	MATH 2403	MATH 2415
ACC 2302	ACCT 2302	CJ 1301	CRIJ 1301	MBIO 1105	BIOL 2120
ADSM 2303	OFAD 2304	CJ 2301	CRIJ 2328	MBIO 1305	BIOL 2320
ANTH 2301	ANTH 2301	CJ 2302	CRIJ 1306	MBIO 2105	BIOL 2121
ANTH 2302	ANTH 2302	CJ 2303	CRIJ 2313	MBIO 2305	BIOL 2321
ART 1301	ARTS 1303	DRA 1301	DRAM 1310	MUS 1304	MUSI 1311
ART 1302	ARTS 1304	DRA 1303	DRAM 1351	MUS 1305	MUSI 1312
ART 1303	ARTS 1311	DRA 1304	DRAM 1352	MUS 2301	MUSI 1308
ART 1304	ARTS 1312	DRA 1305	DRAM 1330	MUS 2302	MUSI 1309
ART 1305	ARTS 1316	ECO 2301	ECON 2301	PHIL 1301	PHIL 1301
ART 1306	ARTS 1317	ECO 2302	ECON 2302	PHIL 2301	PHIL 2316
ART 1310	ARTS 1301	ENGR 1301	ENGR 1304	PHIL 2302	PHIL 2317
ART 2303	ARTS 2316	ENGR 2308	ENGR 2301	PHIL 2303	PHIL 2303
ART 2304	ARTS 2317	ENGR 2310	ENGR 2302	PHYS 1105	PHYS 1111
BIOL 1101	BIOL 1106	ENGR 2407	ENGR 1407	PHYS 1106	PHYS 1112
BIOL 1102	BIOL 1107	ENG 1301	ENGL 1301	PHYS 1107	PHYS 1101
BIOL 1103	BIOL 2101	ENG 1302	ENG 1302	PHYS 1108	PHYS 1102
BIOL 1104	BIOL 2102	ENG 2301	ENGL 2332	PHYS 1305	PHYS 1311
BIOL 1108	BIOL 1108	ENG 2302	ENGL 2333	PHYS 1306	PHYS 1312
BIOL 1109	BIOL 1109	ENG 2311	ENGL 2327	PHYS 1307	PHYS 1301
BIOL 1301	BIOL 1306	ENG 2312	ENGL 2328	PHYS 1308	PHYS 1302
BIOL 1302	BIOL 1307	ENG 2313	ENGL 2322	PHYS 2101	PHYS 2125
BIOL 1303	BIOL 2301	ENG 2314	ENGL 2323	PHYS 2102	PHYS 2126
BIOL 1304	BIOL 2302	FIN 2301	REAL 1301	PHYS 2401	PHYS 2425
BIOL 1306	BIOL 1322	FREN 1401	FREN 1411	PHYS 2402	PHYS 2426
BIOL 1308	BIOL 1308	FREN 1402	FREN 1412	POLS 2303	GOVT 2301
BIOL 1309	BIOL 1309	FREN 2301	FREN 2311	POLS 2304	GOVT 2302
BA 1301	BUSI 1301	FREN 2302	FREN 2312	PSY 1303	PSYC 2301
CHEM 1101	CHEM 1106	GEOG 1302	GEOG 1303	PSY 2302	PSYC 2319 or SOCI 2326
CHEM 1105	CHEM 1105	GEOL 1105	GEOL 1103		
CHEM 1106	CHEM 1107	GEOL 1106	GEOL 1104	PSY 2306	PSYC 2315
CHEM 1107	CHEM 1111	GEOL 1305	GEOL 1303	SOC 1303	SOCI 1301
CHEM 1108	CHEM 1112	GEOL 1306	GEOL 1304	SOC 2302	SOCI 1306
CHEM 1305	CHEM 1305	HIST 1305	HIST 1301	SOC 2306	SOCI 2361
CHEM 1306	CHEM 1307	HIST 1306	HIST 1302	SPAN 1305	SPAN 1300
CHEM 1307	CHEM 1311	HIST 2303	HIST 2301	SPAN 1401	SPAN 1411
CHEM 1308	CHEM 1312	HIST 2309	HUMA 2319	SPAN 1402	SPAN 1412
COMM 1302	COMM 1307	MATH 1301	MATH 1314	SPAN 1411	SPAN 2313
CIS 1301	COSC 1301	MATH 1302	MATH 1316	SPAN 1412	SPAN 2315
CIS 2301	COSC 2390	MATH 1305	MATH 1324	SPAN 2301	SPAN 2311
CIS 2303	COSC 1332	MATH 1306	MATH 1325	SPAN 2302	SPAN 2312
CS 1305	COSC 1306 or COSC 1316	MATH 1310	MATH 1332	SPCH 1301	SPCH 1342
CS 1410	COSC 1435	MATH 1404	MATH 2412	SPCH 1302	SPCH 2341
CS 1408	COSC 1417	MATH 2300	MATH 1342	SPCH 1304	SPCH 1311
CS 2310	COSC 2335 or COSC 2330	MATH 2305	MATH 2305	SPCH 1385	SPCH 2320
		MATH 2307	MATH 2318	SPCH 2303	SPCH 2335
		MATH 2401	MATH 2413		
		MATH 2402	MATH 2414		

Course Credit and Numbering System

Progress in 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 for freshmen, 2000 for sophomores, 3000 for juniors and 4000 for seniors. The second digit indicates the number of semester credit hours which the course carries.

The three numbers in parentheses after each course title indicate in order, the number of semester credit hours, the number of class hours per week and the number of additional laboratory or activity hours per week.

In this catalog, the common course number is indicated in parentheses at the end of the course description. In addition, an index is provided on page 70 listing all UH-Downtown courses for which a common course number exists.

The Texas Common Course Numbering System

The University of Houston-Downtown is a participant in the Texas Common Course Numbering System. This system ensures that if a student takes the courses UH-Downtown has designated as common, the courses will be accepted in transfer and treated as if they had been taken at UH-Downtown.

The common course number has a standard 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, while COSC is the common prefix for computer science courses. The four-digit numbers following the prefix identifies specific courses 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, the common course number is indicated in parentheses at the end of the course description. In addition, an index is provided on page 70 listing all UH-Downtown courses for which a common course number exists.

The Office of Admissions (Room 326-South; telephone 713-221-8533) is available to provide more information about the Texas Common Course Numbering System.

Accounting (ACC)

2301 Financial Accounting (3-3-0)
Prerequisite: MATH 1300.
Development of analytical skills necessary to construct and to understand financial statements. The conceptual framework used to explain financial accounting and the economic information generated in the accounting process. (ACCT 2301)

2302 Managerial Accounting (3-3-0)
Prerequisite: ACC 2301.
Cost analysis and control concepts used in providing internal accounting information for management. (ACCT 2302)

3300 Analysis of Financial Reporting (3-3-0)
Prerequisites: A grade of C or better in ACC 2301 and ACC 2302 and junior standing.
Review the development, construction and composition of principles of financial reporting and of financial statements and the techniques used to interpret such reports; designed to aid the student in developing techniques for investment decisions and credit extensions.

3301 Intermediate Accounting I (3-3-0)
Prerequisite: A grade of C or better in ACC 3300.
Further development of analytical skills necessary for measuring and reporting of assets and liabilities. Accounting principles underlying the preparation of financial statements are studied in depth. Additional special topics will be included.

3302 Intermediate Accounting II (3-3-0)
Prerequisite: A grade of C or better in ACC 3301.
Continuation of ACC 3301. Emphasis on measuring and reporting stockholder's equity. Other topics include: earnings per share, accounting for price changes, leases, pensions, accounting changes and error analysis. Additional special topics will be included.

3303 Cost Accounting (3-3-0)
Prerequisite: A grade of C or better in ACC 2302 and junior standing.
Cost accounting principles and techniques used in assembling data for product costing as well as for managerial use in planning, control and decision making. Topics include: cost terminology, job order and process costing, budgeting, cost-volume-profit analysis, standard costs and relevant costs for decision making.

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. Course replaces ACCT 4324. Credit will not be given for both courses.

3305 Governmental Accounting (3-3-0)
Prerequisite: ACC 2302 and junior standing.
Special features of budgetary and fund accounting as applied to nonprofit entities: municipalities, other governmental units and institutions such as schools and hospitals.

3307 Oil and Gas Accounting (3-3-0)
Prerequisite: ACC 2302 and junior standing.
Accounting systems and procedures generally applicable to the oil and gas industry.

3323 International Accounting
Prerequisite: 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.

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: ACC 2302 and junior standing.
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)
Prerequisites: ACC 3304 and MATH 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.

4305 Advanced Auditing (3-3-0)
Prerequisites: A grade of C or better in ACC 4304.
To further develop professional auditing standards, including accounting and review services, quality control and review standards; also covers the advanced topics of auditing EDP systems and problems in statistical sampling.

4307 Advanced Cost Accounting (3-3-0)
Prerequisites: ACC 3303 and MATH 3309 or equivalent.
This course is a continuation of cost accounting with major emphasis on quantitative decision-making.

4309 EDP Audit and Controls (3-3-0)
Prerequisites: ACC 2302, CIS 1301 and junior standing.
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. Credit will not be given for both ACC 4308 and CIS 4309.

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
Prerequisites: 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 (3-3-0)
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.

Administrative Management (ADM)

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.
Introductory course emphasizing the development of basic information processing skills including preparation of standard correspondence such as business letters; memos; reports; and merged letters; development of a presentation using software and integration of spreadsheets into basic correspondence. Students also learn basic desktop publishing skills required for development of newsletters, brochures and manuscripts. The semester project is a desktop published newsletter.

3301 Records Management (3-3-0)
Prerequisite: Junior standing.
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 department approval.
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)
Prerequisite: MGT 3301 or department approval.
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. Credit will not be given for both ADM 3303 and MGT 3307.

3304 Information Processing II (3-3-0)
Prerequisite: ADM 2303 or department approval.
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)
Prerequisite: Junior standing.
A theoretical examination of the bases for moral business decisions, raising of the moral recognition level and blending of theory with practice. Credit will not be given for both BA 3308 and ADM 3308.

3309 Management of the Virtual Workplace (3-3-0)
Prerequisite: Junior Standing or instructor approval.
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 office management; intensive individual study under the guidance of a faculty member.

4301 Business Communications (3-3-0)
Prerequisites: Senior standing in a business degree program.
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: ADM 3302 or department approval.
A case study course investigating supervisory problems in business, government and industry.

4303 Administrative Management (3-3-0)
Prerequisite: ADM 3301.
Capstone course of the Administrative Services Management curriculum. Methods of hiring, training and supervising office personnel are included, along with technology, people and procedures within the organization.

4305 Information Processing Management
Prerequisites: 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)
Prerequisites: ADM 4303 and senior standing in major.
Special problems in office management.

4380 Field Experience
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
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.

American Studies (AS)

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.

Anthropology (ANTH)

2301 Physical Anthropology (3-3-0)
Prerequisite: Enrollment in or credit for ENG 1301.
Humans as physical beings, through the study of evolution, ancestry, prehistory and genetics. (ANTH 2301)

2302 Cultural Anthropology (3-3-0)
Prerequisite: Enrollment in or credit for 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
Prerequisites: 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
Prerequisite: 3 hours in Anthropology or permission of the instructor.
Selected topics in anthropology. Topics may vary form semester to semester and may be repeated for credit.

Art (ART)

1301 History of Art I (3-3-0)
Prerequisite: Enrollment in or completion of ENG 1301.
The study of art forms from a Western perspective from the ancient to the Gothic periods, with emphasis on enjoyment and understanding. (ARTS 1302)

1302 History of Art II (3-3-0)
Prerequisite: Enrollment in or completion of ENG 1301.
The study of art forms from a Western perspective from the Renaissance to the present, with emphasis on enjoyment and understanding. (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)

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.

3302 History of Modern Art (3-3-0)
Prerequisite: ENG 1301 and ART 1301, 1302, or 1310.
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
Prerequisite: ART 1303 (Design and Materials) 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.

Biology (BIOL)

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)
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: 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, ani-

mal behavior, evolution and the ecology of biological communities. (BIOL 1307)

1303 Human Anatomy and Physiology I (3-3-0)
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.
Continuation of the study of the human body, with emphasis on the endocrine, circulatory, respiratory, digestive, excretory and reproductive systems. (BIOL 2302)

1306 Fundamentals of Nutrition (3-3-0)
Prerequisite: Credit or enrollment in ENG 1301. Credit or enrollment in BIOL 1303 and CHEM 1305 is recommended.
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)

1310 Introduction to Biology I (3-2-2)
Laboratory fee required: $12.
Prerequisites: Credit or enrollment in ENG 1301.
An integrated lecture/laboratory approach to biology 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)
Laboratory fee required: $12.
Prerequisite: BIOL 1310.
Integrated lecture/laboratory course designed 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.

2201 Medical Terminology (2-1-2)
Prerequisites: ENG 1302 and 8 hours of biology.
A lecture/multimedia-based course in biological and medical terminology. The most frequently used and important suffixes and word roots will be presented along with the rules for interpreting, forming, and using Greek and Latin-based scientific terms. This is not a lab-

oratory science course. (Pending Coordinating Board approval)

3102 General Ecology Laboratory (1-0-3)
Prerequisites: 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)
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)
Prerequisites: 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)
Prerequisites: 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 biology research under the direction of a selected faculty member.

3301 Evolution of the Earth and its Inhabitants (3-3-0)
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: 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)
*Prerequisites: BIOL 1302/1102 and credit or enroll-
ment in BIOL 3110.*
A study of the principles of naming, identification and
classification of plants with an emphasis on the charac-
teristics of select families of flowering plants.

3320   Human Physiology (3-3-0)
*Prerequisites: 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 sys-
tems 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)
*Prerequisites: BIOL 1302/1102, CHEM 1308/1108,
and credit or enrollment in BIOL 3130.*
Comprehensive analysis regarding the biology of
plants, including plant taxonomy, morphology, anato-
my, physiology, reproduction, development, ecology,
ethnobotany and biotechnology.

3340   Biology of Fungi (3-3-0)
*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)
Prerequisites: BIOL 1302/1102
The biology of birds, including evolutionary history,
functional morphology, physiology, ecology, and
behavior. The course will explore the adaptations char-
acteristic 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 the
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 pre-
sented in BIOL 4310.

4113   Parasitology Laboratory (1-0-3)
*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 pre-
sented in BIOL 4313.

4210   Biology Seminar (2-2-0)
*Prerequisites: Senior standing and majoring in an area
of life science.*
Presentations and discussions related to recent research
accomplishments in biology and biotechnology includ-
ing student research presentations.

4230   Techniques in Cell and Molecular Biology (2-0-6)
*Prerequisites: BIOL 3303 and permission of instructor.
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)
*Prerequisites: 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)
Prerequisites: BIOL 3303/3103
A study of inherited traits in humans with emphasis on
the mapping of the human genome, molecular mecha-
nisms of disease, Karyotyping and chromosomal
abnormalities, genetic testing, gene therapy, and ethical
issues associated with human genetics.

4310   Histology (3-3-0)
*Prerequisites: 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 histochem-
istry, tissue culture and pathophysiology.

4313   Parasitology (3-3-0)
*Prerequisites: 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 develop-
ment for parasitic diseases.

4320   Cellular Biology (3-3-0)
Prerequisites: 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)
Prerequisites: 16 hours of laboratory-based science which includes 8 hours at the upper level, and approval of course 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.

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)
Prerequisites: 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)
Prerequisites: 8 hours of biology, ENG 1302, PSY 1303 or SOC 1303, and junior-level 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)
Prerequisites: 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.

4380   Field Experience
Prerequisites: At least 85 hours and departmental approval.
Field experience integrates theory learned in biology courses 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 science faculty.

4190-   Selected Topics in Biology
4490   *Prerequisites: Will vary according to topic offered.*
Selected topics in upper-level biology according to the needs and interests of the students. Example topics include physiological ecology of vertebrates (4390A).

4399   Senior Honors Thesis
Prerequisites: 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.

6301   Selected Topics in Advanced Biology (3-3-0)
Prerequisites: Graduate Standing
Possible topics include modern genetics, biotechnology, immune disorders and health, urban science and ecology, computational biology, and advanced investigative methods in biology.

Business Administration (BA)

2301   Business Cornerstone (3-3-0)
Prerequisite: None.
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)
*Prerequisites: Junior standing and **POLS 2303/POLS 2304**.*
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.
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   Environmental Issues in Business
Prerequisite: BA 3301 or instructor approval.
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.
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: Junior standing or instructor approval.
Creation and management of new businesses. Characteristics and special problems of entrepreneurs. New venture ideas and strategies. Preparation of new venture plans. Acquisition of venture capital.

3308   Business Ethics (3-3-0)
Prerequisite: Junior standing.
A theoretical examination of the bases for moral business decisions, raising of the moral recognition level and blending of theory with practice. Credit will not be given for both BA 3308 and ADSM 3308.

3309   Real Estate Law (3-3-0)
Prerequisite: Junior standing.
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
Prerequisite: BA 3301.
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: Junior standing or instructor approval.
International Business adopts a 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.

3399   Directed Study in Business Administration (3-3-0)
Prerequisite: Formal approval of 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)
Prerequisites: Must be a declared major in the College of Business and have completed all required general education and business core courses. May be concurrently enrolled in MGT 3332. Successful completion of the Writing Proficiency Examination 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.

4380   Field Experience
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
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.

Chemistry (CHEM)

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)

1106 Introductory Chemistry Laboratory II (1-0-3)
Prerequisites: CHEM 1105 and credit or enrollment in CHEM 1306.
Laboratory fee required. $12.
Appropriate laboratory experiments in applications of fundamental principles of organic chemistry and biochemistry 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. (CHEM 1107)

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)
Prerequisites: 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)

1305 Introductory Chemistry I (3-3-0)
Prerequisite: 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)

1306 Introductory Chemistry II (3-3-0)
Prerequisite: CHEM 1305.
The chemistry of the main classes of organic and biochemical compounds, with emphasis on their importance in health and foods. Topics include structure, nomenclature, physical properties, chemical properties and stereochemistry. (CHEM 1307)

1307 General Chemistry I (3-3-0)
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: CHEM 3301/3201 and credit or enrollment in CHEM 3302.
Laboratory fee required. $24.
Experiments illustrating multistep synthesis, semimicro techniques, instrumental analysis, investigation of reaction mechanisms and qualitative analysis.

3300 Undergraduate Research (3-0-9)
Prerequisites: 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)
*Prerequisites: CHEM 1308/1108 and credit or enroll-
ment in CHEM 3201.*
Fundamentals of organic chemistry. Topics include: mol-
ecular orbital theory, stereochemistry, conformational
analysis, reaction mechanisms, spectroscopy, nomen-
clature, physical properties, preparation and reactions
of alkanes, alkyl halides, organometallics, alcohols and
ethers.

3302 Organic Chemistry II (3-3-0)
*Prerequisites: CHEM 3301/3201 and credit or enroll-
ment 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)
*Prerequisites: CHEM 1308 and CHEM 1108 and credit
or enrollment in CHEM 3110.*
A study of chemical equilibrium, reliability of measure-
ments and the theory of applications of gravimetric,
volumetric and instrumental methods of analysis.

3320 Environmental Chemistry (3-3-0)
*Prerequisites: 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 U.S. Environmental
Protection Agency.

3330 Physical Chemistry I (3-3-0)
*Prerequisites: CHEM 3301, MATH 2402 and one year
of general physics.*
Applications of the first and second laws of thermody-
namics 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.

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.

4260 Environmental Laboratory and Field Studies (2-0-6)
*Prerequisites: credit for BIOL 1302/1102,
CHEM 1308/1108, GEOL 1306/1106 and credit or
enrollment in 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 the
ecosystem.

4310 Advanced Chemical Analysis (3-1-6)
Prerequisites: CHEM 3310/3110.
Laboratory fee required. $24. Principles and applica-
tions 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)
*Prerequisites: 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 cel-
lular constituents. (Pending Coordinating Board
approval)

4360 Industrial Organic Chemistry (3-3-0)
Prerequisites: 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 Inorganic Reactions and Processes (3-3-0)
*Prerequisites: Credit or enrollment in CHEM 3330,
and/or CHEM 3310.*
An introduction to modern inorganic chemistry includ-
ing 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)
Prerequisites: CHEM 3302/3202.
A study of the chemistry and technology of polymeric
materials including methods of polymerization, charac-
terization and applications of polymers with an empha-
sis on structure-property relationships.

4380 Field Experience
*Prerequisites: At least 60 semester credit hours and
approval of department chair.*
Selected students are placed in jobs in their local com-
munity which are related to and reinforce their acade-
mic 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
Prerequisites: 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.

6301   Selected Topics in Advanced Chemistry (3-3-0)
Prerequisites: Graduate Standing
Possible topics include thermodynamics and kinetics, chemistry of important biological reactions, properties and chemistry of polymers, and advanced investigative methods in chemistry.

College Success Program (CSP)

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.

Communication (COMM)

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)

3301   Public Relations (3-3-0)
Prerequisites: 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.

3303   Introduction to Advertising (3-3-0)
Prerequisites: 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.

3311   Writing for the Media (3-3-0)
(Cross-listed as ENG 3333)
Prerequisites: 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)
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.

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.

Computer Information Systems (CIS)

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 (3-3-0)
Prerequisite: CIS 1301.
This course will examine the structure of program logic. Students will learn control logic, file handling, table logic, report structure, search techniques and program organization. (COSC 2390)

2303   Introduction to Business Application Programming (3-3-0)
Prerequisite: Grade of "C" or better in CIS 2301; may not be taken concurrently with CIS 2304.
An introductory course in program design and development. Students apply a structured, multi-phase program development process that features a series of steps involving understanding of a problem, formal problem definition, graphic design methodologies (particularly structure charts) and program specification through pseudocoding. Program design and development will be illustrated during this course by implementing code with a minimal set of structured COBOL. (COSC 1332)

2304   Intermediate Business Application Programming (3-3-0)
Prerequisite: A grade of C or better in CIS 2301; May not be taken concurrently with CIS 2303.
This is a course in developing programming skills to solve business application problem. In this course, students will write programs in C and C++, Visual Basic, or other appropriate object-oriented programming languages.

3301   Systems Analysis and Design (3-3-0)
Prerequisite: CIS 2301 and junior standing.
A study of systems thinking related to the system development life cycle. This course deals with traditional analysis, design and implementation through data flow analysis. The methods of analysis and design will be covered as well as data structures, data definition, normalization and system documentation. Credit will not be given for both CIS 2307 and CIS 3301.

3302   Management of Information Systems (3-3-0)
Prerequisite: CIS 1301 or equivalent; junior standing.
A survey course dealing with the managerial and technical environments within which Management Information Systems (MIS) 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 and international systems used by modern multinational corporations.

3303   Computer Hardware, System Software and Architecture (3-3-0)
Prerequisite: Grade of C or better in CIS 2304 or CS 3330; junior standing.
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)
Prerequisites: CIS 1301 or CS 1305; junior standing.
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   Communications and Distributed Processing Systems
Prerequisites: Grade of "C" or better in CIS 3303.
A study of a range of new and developing technologies. These include digital data and voice communications technologies, microcomputer-based networking and work station components, local area networks, intelligent computer load sharing networks, distributed and decentralized data processing and distributed databases. Communications transmission media, such as links via telephone lines, satellite links, microwave channels and fiber optics, are also discussed.

3306   Data Files and Databases
Prerequisites: Junior standing and grade of "C" or better in CIS 2303 or grade of "C" or better in CIS 2304
This course establishes a base of student knowledge in programming and systems development methods. Previous learning is placed in a context of database methods that have come to dominate the world of computer business applications. In keeping with this aim, the course stresses application development through fourth-generation programming techniques. Content of the course stresses basic knowledge in data structures, normalization of data, data modeling and database methods. Students should learn the construction of database schema.

3309   Computer Graphics in Business (3-3-0)
Prerequisites: CIS 1301 and junior standing.
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.

3310   Decision Support Systems (3-3-0)
Prerequisites: CIS 1301 or equivalent; junior standing.
A study of how computers can be used as tools to assist management in problem solving and decision making. The course surveys traditional Decision Support Systems (DSS) technology and exposes the student to software packages used in DSS environments. Problem-solving techniques and decision-making models are presented.

3311   Programming Languages: Procedural, Nonprocedural and Fourth Generation (3-3-0)
Prerequisite: CIS 2301.
Students are guided in the development of programs and implementation of systems through the use of procedural, nonprocedural 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)
Prerequisites: 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: CIS 1301 or equivalent computer literacy course; and Junior Standing
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.

3319 **Management of the Virtual Workplace**
Prerequisite: Junior standing 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 **Graphical User Interface Development Using Visual Basic (3-3-0)**
Prerequisite: A grade of "C" or better in CIS 3306
This course is designed as an introduction to programming Business applications using Microsoft's Visual Basic. Topics covered include analysis, design, coding, testing, debugging, and implementing structured programs in MS Visual Basic design Environment while developing understanding of event driven programming.

3330 **JAVA: A Graphical User Interface (GUI) (3-3-0)**
Prerequisite: A grade of "C" or better in CIS 2301.
This is an introductory course in Graphical User Interface (GUI) concepts, design and programming using the JAVA programming language.

4301 **Information Resource Planning and Management (3-3-0)**
Prerequisites: 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**
Prerequisites: CIS 1301 or CS 1305 and junior standing.
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: 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.

4309 **Computer Control and Audit (3-3-0)**
Prerequisites: CIS 1301 and ACC 2302, and junior standing.
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. Credit will be not be given for both CIS 4309 and ACC 4308.

4310 **Advanced Computer Control and Audit**
Prerequisites: 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)**
Prerequisites: CIS, CS or Applied Math major and senior standing.
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**
Prerequisites: A grade of C or better in CIS 3301, 3305, 3306, senior standing and successful completion of Junior Writing Proficiency Exam.
This is a capstone course. Emphasis is placed on the development of a computer application through life cycle methodology. 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**
Prerequisite: Junior standing and CIS 1301.
An overview of the technology and management issues relevant to business, intro-business, and business to business transactions. The economic model of electronic buying and selling.

4314 **Electronic Commerce and Strategy**
Prerequisites: CIS 4313 and CIS 3306.
Utilizes the previously learned electronic model of buying and selling to explore the use of electronic media as innovative approaches for effective business strategy. In this advanced course, the highly dynamic and rapidly expanding area of electronic commerce shall be viewed from an organizational perspective. An essential element of this course will be the analysis of cases to develop web strategies and plans for the business organization.

4380   Field Experience (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.

Computer Sciences (CS)

1105   Technology for Education Lab (1-0-2)
Prerequisites: 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)
Prerequisites: 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. (COSC 1306 or COSC 1316)

1408   Introduction to Computer Science and FORTRAN (4-4-0)
Prerequisites: Credit or enrollment in MATH 1306 or MATH 1404; and placement in ENG 1301 or above.
History, nature and uses of the computer, algorithms and flowcharts, number systems and structuring, with an overview of computer hardware and software, computing systems and applications. Computer projects are run in the FORTRAN programming language. Closed labs on key topics will be conducted. (COSC 1417)

1410   CS I—Introduction to Computer Science with C++
Prerequisites: 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)
Prerequisites: "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 searaching and sorting algorithms, recursion, and introduction to algorithm complexity analysis.

3300   Object-Oriented Programming and Concepts (3-3-0)
Prerequisites: "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 as discussed.

3304   Data and Information Structures (3-3-0)
Prerequisites: "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)
Prerequisites: "C" or better in: CS 2310, MATH 2305 and MATH 2307.
An introduction to the modern theory of computing. Topics selected from the 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 form a theoretical prespective. Credit will not be given for both CS 3306 and MATH 3316.

3308   Numerical Methods (3-3-0)
Prerequisites: "C" or better in: CS 1408 or CS 1410, MATH 2307 and credit or enrollment in MATH 3301.
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. Credit will not be given for both CS3308 and MATH 3308.

3320 Introduction to Software Engineering (3-3-0)
Prerequisite: "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.

3330 Introduction to Geometric Modeling (3-3-0)
Prerequisites: A grade of "C" or better in MATH 2403, MATH 2307, and CS 2310.
Mathematical methods for the definition and manipulation of geometric shapes. Topics include Bezier curves and surfaces, B-spline curves and surfaces, Coons surfaces, Gordon surfaces, Gregory surfaces, tensor product forms, and subdivision methods. Applications of geometric modeling to computer animation, aircraft design, automobile design, and other areas will be discussed. Credit cannot be given for both CS 3330 and MATH 3330.

3399 Directed Study in Computer Science
Prerequisite: Approval of department chair.
Selected topics in computer science; intensive individual study under the guidance of a member of the Computer and Mathematical Sciences faculty.

3401 Introduction to Computer Organization and Assembly Language
Prerequisites: A grade "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)
Prerequisites: "C" or better in: CS 2310, CS 3401 and MATH 2305.
Topics include: analysis and synthesis of combinational and sequential switching network; 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
Prerequisite: Advanced standing, ENG 3302, SPCH 1304, departmental approval and passing score on the writing proficiency exam.
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)
Prerequisites: 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. Credit will not be given for both CS 4301 and MATH 4301. (May be used as W-course with additional prerequisite of CS 4294, ENG 3302 and SCH 1304.)

4302 Computer Systems Architecture (3-3-0)
Prerequisites: "C" or better in CS 3402.
Main topics in general-purpose computer architectures, including CPU organization, instruction set design with case studies from RISC and CISC architectures, control unit design, hardwired and microprogrammed pipelined and parallel execution; memory hierarchy and technology, virtual, cache and interleaved memory; input/output systems. Parallel architectures, including superscalar processors, vector processors and multiprocessor architectures.

4303 Programming Language Concepts (3-3-0)
Prerequisite: "C" or better in CS 3304.
Provides a foundation in the concepts and implementation of modern programming languages. Imperatiave, functional, logic, and object-oriented programming paradigms are covered.

4305 Compiler Design and Construction (3-3-0)
Prerequisites: CS 3306 and CS 4303.
Analysis of compilers including language structures, translation, storage allocation and execution. The following specific topics are considered: compilation of simple expressions and statements; compiler organization with symbol tables, syntax scan, object code generation, error diagnostics, object code optimization and overall design; interpreters.

4306 Mathematical Models and Computer Simulation (3-3-0)
Prerequisites: MATH 3302 or MATH 3310; and CS 1408 or CS 1410.
Quantitative modeling of industrial systems, computer simulation languages; discussion of problems encountered in constructing simulation programs. Credit will not be given for both CS 4306 and MATH 4306 (may be used as W-course with additional prerequisites of CS 4294, ENG 3302 and SPCH 1304).

4310 Principles of Computer Graphics (3-3-0)
Prerequisites: 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.

4312   History of Applied Mathematics (3-3-0)
*Prerequisites: MATH 2401 or MATH 1306 and depart-
ment approval (may be used as W-course with addi-
tional prerequisites of CS 4294, ENG 3302 and SPCH
1304).*
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. Credit will not be
given for both CS 4312 and MATH 4312.

4315   Operating Systems (3-3-0)
Prerequisites: "C" or better in CS 3304 and CS 3306.
Basic concepts of operating systems including concur-
rent process management, I/O device management,
and storage management (virtual memory and file sys-
tems). UNIX/WindowsNT serve as standard examples.

4318   Theory of Database and File Structures (3-3-0)
Prerequisites: CS 3304 and CS 3306.
An introduction to the theory of database and file struc-
tures with an emphasis on general principles and algo-
rithmic 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 top-
ics such as data integrity, optimization and distributed
environments.

4320   Software Engineering (3-3-0)
Prerequisites: CS 3320.
Software engineering and design considerations,
including software design, definition, representation
techniques and methodologies.

4322   Theory of Algorithms (3-3-0)
Prerequisites: 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)
Prerequisites: CS 3402.
Architectures and operating systems of distributed net-
works including data communication, local networks,
public networks and design alternatives.

4328   Parallel Computing (3-3-0)
*Prerequisites: "C" or better in CS 2310 **and CS/MATH
3308***
Introduces fundamental concepts of parallel computers
and parallel/distributed computation. A semester pro-
ject involving parallel algorithm design, software imple-
mentation and results analysis to solve scientific and/or
engineering application problems in parallel will be
assigned. This course may be used as a W-course with
additional prerequisites of CS 4294, ENG 3302 and
SPCH 1304.

**4330   Concepts of Artificial Intelligence and Knowledge
Systems (3-3-0)**
Prerequisites: CS 3304 and CS 3306.
Primary topics in artificial intelligence including
problem representation, knowledge representation,
cognition models, natural language, search methods,
automated deduction and applications.

4333   Theory and Applications of Neural Nets (3-3-0)
*Prerequisites: 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 learn-
ing rules and algorithms will be presented along with
applications. Credit cannot be given for both CS 4333
and MATH 4333.

4334   Fuzzy Logic: Theory and Applications (3-3-0)
*Prerequisite: A grade of "C" or better in CS 2310 and
Math 2307.*
This course will cover important ideas inthe theory and
applications of Fuzzy Logic as operations on fuzzy sets,
alpha cuts, possibility measure, ruled based computa-
tions, associative memories and other topics as time
permits.

4335   Seminar in Knowledge Engineering (3-3-0)
*Prerequisites: SPCH 1304, ENG 3302, senior standing
in computer science or knowledge engineering, and
departmental approval.*
Consideration of various emerging issues in knowledge
engineering, including case studies, new hardware and
software technology, ethics and current literature con-
tent. (CS 4335 may be repeated for credit with the
approval of the department chairman.)

4380   Field Experience
*Prerequisites: At least 60 semester hours and approval
of department chair; "B" or better in CS 3304, 3306
and 3402.*
Selected students are placed in jobs in the local commu-
nity 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 depart-
ment approval.

4395   Senior Project in Computer Science
*Prerequisites: "B" or better in CS 4294; and SPCH
1304 and ENG 3302; senior standing and department
approval. Required GPA of 3.0 or better.*
Intensive study under the guidance of a member of the
Computer and Mathematical Sciences faculty which cul-
minates 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: formal 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: Formal 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.

Criminal Justice (CJ)—Undergraduate

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.
An overview of philosophical and ethical issues surrounding the role of police in a democratic society. (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 2313)

3300   Research Methods in Criminal Justice (3-3-0)
Prerequisites: 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)
Prerequisites: 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 15-hour 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 15-hour 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 15-hour 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 15-hour Criminal Justice core.
Delinquent behavior and the role and responsibility of the criminal justice system in controlling delinquency is 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 15-hour Criminal Justice core.
The nature of the community and its impact on the police is explored. Those factors which 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 15-hour 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 15-hour Criminal Justice core.
The functional aspects of security investigation and the legal restrictions placed on non-governmental related activities is 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 15-hour 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 15-hour 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
Prerequisite: Completion of 15-hour 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, case reporters. Assignments involve practical research applications.

3320   Statistics in Criminal Justice
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: CJ 3310.
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)
Prerequisites: Senior standing and completion of 15 hour 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)
Prerequisites: Senior standing and completion of 15 hour Criminal Justice core.
The historical, philosophical and legal aspects of vice activities and drugs is 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.

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.

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.

4310   Criminal Court Administration (3-3-0)
Prerequisite: Completion of 15 hour 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 or CJ 3315.
The organization, administration and management of the security function is 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)
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: Criminal Justice major and junior/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
Prerequisites: 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)
Prerequisites: 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
Prerequisites: 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.

439A Domestic Terrorist
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.

439B Seminar in Criminal Justice Films
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.

Criminal Justice (CJ)—Senior/Graduate

No more than six hours of the following courses may be taken as undergraduate credit by senior CJ majors. Department approval is required.

CJ5360 Security and Crisis Management: Theories and Practices
Prerequisites: CJ1301, CJ2301; CJ2302, CJ2303, 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.

CJ5361 Public Information Resources
Prerequisites: CJ1301, CJ2301; CJ2302, CJ2303, Senior/Graduate Standing.
This course is an extensive survey and evaluation of the various sources of information most useful to private and public sector investigations. Special attention is given to analysis of resources available outside governmental agencies. Investigative techniques utilizing these resources are compared and evaluated.

CJ5362 Risk Analysis and Abatement
Prerequisites: CJ1301, CJ2301; CJ2302, CJ2303, 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.

CJ5370 Seminar in Violent and Serial Crime
Prerequisites: CJ1301, CJ2301; CJ2302, CJ2303, and 12 hours of upper level CJ, Senior/Graduate standing or post baccalaureate status.
This course explores the incidence and patterns of violent and serial crime. Particular attention is given to the characteristics and features of each type of violent or serial crime (e.g., homicide, robbery, rape, arson, and bombing) and the unique investigative strategies that are applicable to this type of crime. Included in this course are discussions of modus operandi, signature analysis, linkage blindness and linkage analysis.

CJ5372 Criminal Profiling
Prerequisite: CJ5370
This course is designed to introduce students to the investigative strategy of criminal profiling. Forensic psychology; psychopathology; and offender typologies across various serial/violent crimes topics will be discussed. Considerable time will be spent reviewing the research on violent/serial offenders and profile analysis.

CJ5373 Quantitative Geography and Geographic Information Systems
Prerequisites: CJ1301, CJ2301; CJ2302, CJ2303, CJ3320 and 12 hours of upper level CJ, Senior/Graduate standing or post baccalaureate status.
This course is designed to introduce students to geographic information systems and the use of quantitative methods in order to further police investigations. During the course, students will be introduced to the following topics: maps and cartography, quantitative geography (centrography), point pattern analysis, and criminal geographic targeting software.

CJ5374 Geographic Profiling
Prerequisites: CJ5370, CJ5373 and CJ6321
The course is designed to introduce students to geographic profiling as a strategic information management strategy for the support of violent/serial crime investigations. The following topics will be discussed: environmental criminology, environmental psychology, routine activity theory, rational choice theory, Brantingham and Brantingham Theory (geometry of crime), and crime sit distinctions (EAMD). Considerable time will be devoted to exploring the geography of crime research.

Criminal Justice (CJ)—Graduate

6310 Issues in Criminal Justice
Prerequisites: Graduate Standing or Department Approval
An analysis of the current issues facing the criminal justice system.

6311 Legal Liabilities in Criminal Justice
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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.

6320 Research Design and Methods
Prerequisites: 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
Prerequisites: Graduate Standing or Department Approval
The use of descriptive and inferential statistics and computer applications as used in criminal justice research.

6322 Program Evaluation
Prerequisites: Graduate Standing or Department Approval
Evaluation research is the systematic application of social research procedures for assessing the conceptualization, design, implementation, and utility of social intervention programs. The purpose of this course therefore, is to acquaint the student with theories and tech-

niques which will prepare students to make these research applications in the context of "live" ongoing programs or projects.

6323 Communications and Technology in Criminal Justice
Prerequisites: Graduate Standing or Department Approval
This course will acquaint students with various computer software programs and their application to CJ. The purpose of the course is to equip students with the ability to take research data, analyze it in SPSS, chart it, import it into MS Word, and prepare a computerized slide show presentation of the results on MS PowerPoint.

6330 Advanced Criminology
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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 Criminal Justice Policy Analysis
Prerequisites: Graduate Standing or Department Approval
A study of the process by which public policy decisions are selected and developed in political environments for implementation in the criminal justice system.This course requires the student to identify and explain the motives, goals, tactics, and strategies of the parties involved in current policy issues.

6360 Special Topics
Prerequisites: 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.

6370 Independent Studies
Prerequisites: Graduate Standing or Department Approval
Intensive study of a subject which 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.

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.

Drama (DRA)

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. (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 required. (DRAM 1352)

1305 Stagecraft I (3-3-0)
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.

1306 Stagecraft II (3-3-0)
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.

3302 Readers Theatre
(Cross-listed as SPCH 3303)

3303 Theater: Greek to Elizabethan (3-3-0)
(Cross-listed as HUM 3315)
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)
Prerequisite: ENG 1301.
World theater from the 18th century to the present.

3332 Stage Directing (3-3-0)
Prerequisites: 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 Theatre
Prerequisite: ENG 1302 and junior standing.
An in-depth examination of selected aspects of theatre 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 theatre scene. May be repeated for credit with approval when topic varies.

Economics (ECO)

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 U.S. economy, national income determination and the application of monetary and fiscal policies. Also includes analysis of international trade and finance.

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)
Prerequisites: ECO 2302 and junior standing.
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)
Prerequisites: ECO 2302 and junior standing.
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)
Prerequisites: ECO 2302 and junior standing.
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)
Prerequisites: ECO 2301, ECO 2302 and junior standing.
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.

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 Studies 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 Fluctuations and Forecasting (3-3-0)
Prerequisites: ECO 2301, Grade of C or better in MATH 3309 and junior standing.
Combines macro-economic theory and quantitative methods to develop an understanding of the causes of business cycles. Use of economic indicators, time series analysis and multiple regression analysis with macro-economic data sets with appropriate computer software to model and forecast economic activity.

4303   International Economics (3-3-0)
Prerequisites: ECO 2301, ECO 2302 and junior standing.
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
Prerequisites: ECO 2302 and junior standing.
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
Prerequisites: ECO 2301 and junior standing.
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.

Bilingual Education (BED)

3301   Understanding the Second Language Learner
Field-based course, whicn provides an understanding of developmental, environmental, and cultural, factors which affect second language learners.

3311   Foundations of Bilingual/ESL Education
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
Field-based course which 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
Field-based course which addresses bilingual/ESL methods and techniques for integration of various school subjects.

Early Childhood Education (ECH)

2311   Early Childhood Classroom
Classroom strategies and materials appropriate for preschool, kindergarten, and primary classrooms. (used to be PED 4311).

2312   The Young Child
Characteristics of physical, psycho-social, cognitive, language, and literacy development of young children and the instructional implications to those characteristics for an early childhood environment. (used to be PED 4312).

2313   The Early Childhood Learning Environment
Introduction to models and theories off the organization and management of an early childhood learning environment. Application of specific organizational strategies and classroom management techniques appropriate for young children.

Elementary Education (EED)

3301   Understanding the Learner in the Elementary Classrooom
Prerequisites: Admission to theTeacher 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
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**
Prerequisite: admission to teacher education program and enrollment in interdisciplinary blocks
A field-based course which 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**
Prerequisite: admission to teacher education program and successful completion of interdisciplinary block I
A field-based course which 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 Adolescent**
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**
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**
Prerequisite: admission to teacher education program and concurrent enrollment in EED 3316 and EED 3317
A field-based course which 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**
Prerequisites: 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**
Prerequisite: successful completion of interdisciplinary Blocks I and II, concurrent enrollment in interdisciplinary Block II.
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**
Prerequisites: 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**
Prerequisites: 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**
Prerequisite: successful 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.

Educational Technology (ETC)

3301 **Educational Technology**
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.

Professional Education (PED)

3301 **An 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.

3304   **Aesthetic and Physcial Development of Children**
Prerequisite: Admission to the 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**
Prerequisite: Admission to the 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.

4301   **Collaboration in the Schools (3-3-0)**
Prerequisite: Admission to Teacher Education program or department approval.
An exploration of strategies for school personnel to function as effective collaborators. Topics include inclusion, interpersonal teaming and communication skills.

4311   **Curriculum for the Early Childhood/Kindergarten Classroom (3-3-0)**
Prerequisites: Admission to Teacher Education program or departmental approval and completion of PED 3312.
Classroom strategies and materials appropriate for preschool, kindergarten, and primary programs.

4312   **The Young Child (3-3-0)**
Prerequisite: Admission to Teacher Education program or departmental approval.
Characteristics of physical, psycho-social, cognitive, language and literacy development of young children and the instructional implications of those characteristics for an early childhood environment.

4313   **The Early Childhood Learning Environment (3-3-0)**
Prerequisites: Admission to Teacher Education program or departmental approval and completion of PED 3312.
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.

Reading Education (READ)

3303   **Teaching Reading EC-2**
Prerequisite: READ 3305 & 3306 (ALSO READ 3323)
Current methods, strategies, and curricular resources for teaching and assessing emergent literacy in the early childhood - 2nd grade classroom.

3304   **Reading Curriculum, Methods and Assessment 4-8**
Prerequisite: READ 3305. (ALSO READ 3324)
Reading instructional strategies, methods, approaches, and classroom assessment procedures for the upper elementary and middle school classroom teacher. Focus on providing appropriate instruction to address student diversity and class performance differences for students in upper elementary and middle school.

3305   **Foundations of Reading EC - 8**
This introductory course focuses on the developmental nature of reading and examines theoretical views of literacy instruction.

330   **Language & Literacy**
Prerequisite: Admission into Teacher Education program.
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-8**
Prerequisite: Admission into Teacher Education program.
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 processes, and expressive communication skills and strategies are emphasized.

3308   **Literacy curriculum, methods, and assessment in Spanish EC-2**
Prerequisite: READ 3305 & 3306.
Current methods, strategies, and curricular resources for teaching and assessing emergent literacy for the Spanish speaking student in the early childhood - 2nd grade classroom.

3309   **Teaching Reading in the Content Area 4-8**
Prerequisite: READ 3305.
Focuses on reading as a thinking and learning process. Emphasizes current theory and methods for teaching reading and study strategies for elementary and middle school classroom teachers.

3310   **Teaching Reading in the Secondary Content Areas**
Focuses on reading as a thinking and learning process. Emphasizes current theory and methods for teaching reading and study strategies for secondary content area teaches.

3311   **Teaching Reading in the Secondary School Content Areas**
Field-based course which focuses upon 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 4-8 ESL**
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**
This course is designed to address instruction of expressive language (speaking and writing) and receptive language (reading and listening). Methodologies for instructing the writing process, including grammar conventions, Standard English and Spanish usage, spelling, writing processes, and expressive communication skills and strategies, are emphasized.

3327 **Language Arts Instruction 4-8**
This course is designed to address instruction of expressive language (speaking and writing) and receptive language (reading and listening). Methodologies for instructing the writing process, including grammar conventions, Standard English usage, spelling, writing processes, and expressive communication skills and strategies are emphasized

4303 **Literacy curriculum Elementary 2-4**
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**
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-on-one with an elementary or middle school student to provide individualized instruction based on assessment data.

4306 **Literacy Curriculum ESL 2-4**
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 Reading ESL 4-8**
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-on-one with an elementary or middle school bilingual or ESL student to provide individualized instruction based on assessment data

Secondary Education (SED)

3301 **Understanding the Learner in the Secondary School (3-3-2)**
Prerequisites: Admission to Teacher Education Program and concurrent enrollment in Interdisciplinary Block I.
Field-based course which explores the relationship of human growth and development to learning and education in the secondary school environment. Special emphasis is placed on applying this understanding to culturally diverse students in an urban setting.

3302 **Enhancing Student Achievement in the Secondary School (3-3-2)**
Prerequisites: Successful completion of interdisciplinary Block I and concurrent enrollment in Interdisciplinary Block II.
This field-based course provides students the opportunity to develop and apply effective instructional techniques that enhance student learning across the secondary school curriculum. Special attention is paid to the integration of technology into lesson planning and design.

3311 **Curriculum Foundations for Teaching in the Urban Secondary School (3-3-2)**
Prerequisites: 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 Classroom Environment in the Secondary School (3-3-2)**
Prerequisites: Successful completion of Interdisciplinary Block I and concurrent enrollment in Interdisciplinary Block II.
This field-based course provides for the introduction, analysis, and development of effective classroom management principles. Course content includes consideration for students of various cultures in urban settings as well as students with special needs.

4301 **Student Teaching in the Secondary Classroom (3-0-15)**
Prerequisites: 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 (3-0-15)**
Prerequisites: 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.

Graduate Education (MAT)

6301 **Science Methods for the Elementary/Middle School Teacher**
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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 maintain 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
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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).

6307   Managing the Secondary Environment for Student Success
Prerequisites: post-baccalaureate admission, SED 3303, SED 3313, READ 3310, technology proficiency, and concurrent enrollment in MAT 6308, MAT 6309
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.

6308   Curriculum and Instruction in Secondary Schools
Prerequisites: post-baccalaureate admission, SED 3303, SED 3313, READ 3310, technology proficiency, and concurrent enrollment in MAT 6307, MAT 6309
Shows students to develop understandings of instructional methods in their area of specialization. Students become familiar with methods and lesson design, planning, and educational assessment and evaluation appropriate for their teaching field.

6309   Assessment and Evaluation in Secondary Schools
Prerequisites: post-baccalaureate admission, SED 3303, SED 3313, READ 3310, technology proficiency, and concurrent enrollment in MAT 6307, MAT 6308
Critically examines the role of measurement and evaluation in the instructional process for secondary students. Focuses on developing knowledge and competency in the design, practice, and interpretation of a variety of methods used to evaluate learning, curriculum, and instruction.

6310   Reading in a Multicultural Classroom
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
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
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 setings, including at-risk youth and students, with limited English proficiency.

6315 Introduction to Educational Research
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
Prerequisite: nine SCH of course from 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
Prerequisite: MAT 6315
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
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
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.

6321 Teaching Children's Literature in Spanish
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
Prerequisites: 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.

6380 Practicum for Urban Teachers
Prerequisite: MAT 6310, MAT 6311, MAT 6312 Offers teachers an opportunity to participate, over a two-semester period, in university sponsored workshops/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
Prerequisites: Completion of nine 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).

8690   Directed Study in Urban Teaching
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

Social Sciences—Education (SOSE)

3306   Culture of the Urban School (3-3-0)
Prerequisite: Introductory course in social science.
Urban culture as the dominant form of community life in contemporary schools: characteristics, unique properties, and problems.

3320   Assessment and Evaluation of Children (3-3-0)
Prerequisites: PSY 1303.
Principles and procedures for evaluating the cognitive, affective, and social learning of children.

3321   Assessment and Evaluation in the Classroom (3-3-0)
Prerequisites: Admission to the Secondary Teacher Education Program and completion of Block I.
A field-based course in the Teacher Education program. Principles and procedures for evaluating the cognitive, affective, and social learning of adolescents.

4303   Current Issues in Urban Teaching (3-3-0)
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.

Electrical Engineering Technology (EET)

1411   Electric Circuits with Lab (4-3-1)
Prerequisites: 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 exercies. This course lays the foundation for the rest of Electrical Engineering 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.

3433   Computer Input/Output and Interfacing (4-3-1)
Prerequisites: EET 3432 and CS 2401.
Computer input/output methods and interfacing techniques, including bus systems, peripheral hardware, software design, programmed and interrupt I/O and direct memory access. Emphasis is on microcomputers.

3435   Fundamentals of Automation and Control with Lab (4-3-1)
Prerequisites: EET 2421 and MATH 2402.
Laboratory fee required. $12.
Study of plant dynamic modeling (first-and second-order, transfer functions, nonlinear characteristics) and simulation, control system configurations (open-loop, closed-loop, combined feedforward/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)
Prerequisites: 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)
Prerequisites: 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: EET2431
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.

4442 Real-Time Executive Level Programming (4-3-3)
Prerequisite: EET 3333.
Co-requisites: CS 2310 or CS 3308
Laboratory fee required.
Principles and applications of programming techniques for microcomputers at the executive level to perform multi-tasking and real-time operations. Changes in the software systems to allow more efficient operation of microcomputers for specific tasks, such as control of multiple processes.

Engineering (ENGR)

1302 Engineering and Technology Fundamentals (3-3-0)
Prerequisites: ENGR 1301 and 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)
Prerequisites: 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 microcomputersfor 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.

2409   Engineering Mechanics with Lab (4-3-1)
Prerequisites: ENGR 2308 and 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.

3303   Codes and Specifications (3-3-0)
Prerequisite: Junior standing.
Fundamental principles underlying development of specifications to comply with industry codes including: OSHA, NFPA , and UBC., Application of codes to types of construction, contracts, bidding procedures, analysis of office organization, and manufacturer's specifications.

3305   Computer-Aided Drafting and Design II (3-2-2)
Prerequisites: ENGR 1401 and ENGR 2304.
Laboratory fee required. $12.
Advanced topics in Computer Aided Drafting and Design (CADD) systems commonly used in industry. Topics include advanced drawing, editing and dimensioning commands, generation of 3-D drawings, extracting database information from drawings, applications in piping, structural and electrical drawings.

3308   Fluid Mechanics (3-3-0)
Prerequisites: MATH 2401 and ENGR 2308.
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 2309.
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 2309.
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
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.

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)
Prerequisites: 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 pipling 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.

4380 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

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.

Engineering Technology (ET)

2401 Piping Drafting I (4-3-3)
Prerequisites: 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)
Prerequisites: 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. Non-destructive 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)
Prerequisites: 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.

3326 Plumbing System Design I (3-3-0)
Prerequisites: ENGR 2304 or department approval.
This is an introductory course in plumbing design teaching the basics for producing an engineered plumbing design for commercial, institutional and medical buildings, including fire protection considerations. Emphasis is placed on preparation of design and arrangement drawing using CADD systems.

3399 Directed Study in Engineering Technology
Prerequisites: Approval of department chair and dean.
Selected topics in engineering technology.

3401 Process Piping Design I (4-3-3)
Prerequisites: ET 2302 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, elevation 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.

4107   Fluid Mechanics Laboratory (1-0-2)
Prerequisites: Credit or enrollment in ET 4307 or department approval.
Laboratory fee required. $12.
Experimental verification of empirical and theoretical results used in fluid mechanics and introduction to the experimental method as an approach to solving problems in fluid mechanics.

4301   Piping Models (3-2-2)
Prerequisites: 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.

4302   Instrumentation (3-3-0)
Prerequisites: EET 1311 and EET 1111.
Automated controls and instrumentation as applied in refineries, chemical plants and petrochemical operations. Major process variables, types of instruments, controller modes and final control element selection and sizing. Development of control loops for major process variables. Instrumentation for plant protection and safety.

4303   Pipe Support Design (3-3-0)
Prerequisites: ENGR 2309 and ET 2401.
Design and selection of pipe supports for piping systems including those for service at elevated temperature and cryogenic service.

4304   Pressure Vessel Design (3-3-0)
Prerequisite: ENGR 2309.
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)
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: 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.

4316   Compressible Fluid Flow (3-3-0)
Prerequisites: Credit or enrollment in ET 4307.
Compressible flow of gases in ducts, isentropic flow, effects of friction and heat transfer, normal shock waves, nozzles, diffusers, ejectors and wind tunnels. Fire models.

4317   Material and Energy Balances (3-3-0)
Prerequisites: ET 4311 or department approval.
Processes and process variables, material balances for single and multi-phase systems. Energy and energy balances for nonreactive, reactive and transient processes.

4318   Pumps and Pumping Stations (3-3-0)
Prerequisite: ENGR 3308.
Different types of pumps and pump drive units, pump fundamentals, pump construction, performance characteristics of various types of pumps, pump selection, system analysis for a pumping plant, design of pumping station. Pumps for fire protection.

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 2309.
Design of structural steel members based on LRFD specifications. 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)
Prerequisites: ET 3321 and ENGR 2309.
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)**
Prerequisites: ENG 3302, senior standing,Writing Proficiency Examination 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.

4326 **HVAC Systems Design I (3-3-0)**
Prerequisites: ET 4311 or instructor approval.
This is a course covering the basics in the design of heating, ventilating and air conditioning (HVAC) systems for commercial, institutional and medical buildings. Emphasis is placed on fundamental concepts and calculations involved in the design of HVAC systems. The students will complete a design project as part of their course work. Safety of HVAC systems.

4380 **Field Experience**
*See **Field Experience** under Student Affairs.*

English (ENG)

1101 **TASP Tutorial (1-1-0)**
Tutorial instruction designed to prepare students to pass the Writing component of the state-mandated Texas Academic Skills Program examination.

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: ENG 1300 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: 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. (Pending Coordinating Board Approval)

2301 **Literature of the Western World: Ancient to Renaissance (3-3-0)**
Prerequisite: ENG 1302.
A study of literature of the Western world from its beginnings through the Renaissance. (ENGL 2332)

2302 **Literature of the Western World: Neo-Classical to Modern (3-3-0)**
Prerequisite: ENG 1302.
A study of literature of the Western 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)**
(Formerly ENG 4305)
Prerequisites: ENG 1302 and junior standing.
Study, analysis and practice of advanced rhetorical principles in non-fiction, with a view to increasing clarity, effectiveness and precision in a student's personal 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)**
Prerequisites: ENG 1302 and junior standing.
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)
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)**
Prerequisites: ENG 1302 and junior standing.
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)**
Prerequisites: ENG 1302 and junior standing.
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)**
Prerequisites: 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)**
Prerequisites: 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)**
Prerequisites: 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)
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.)
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.

3332   Newsletters (3-3-0)
Prerequisite: ENG 3302
Guided practice in designing, writing, editing and producing a newsletter; the course operates as a practicum, with students working cooperatively to produce an actual newsletter.

3333   Writing for the Media (3-3-0)
(Cross-listed as COMM 3311)
Prerequisites: 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)
Prerequisites: 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.

3340   Cultural Criticism (3-3-0)
(Cross-listed as HUM 3310.)
Prerequisites: 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.

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)
Prerequisites: 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)
Prerequisites: 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.

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.

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)
Co-requisite: 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)
*Prerequisites: **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 1950.

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)
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. (Pending Coordinating Board approval)

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 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.)
Prerequisites: Senior standing and 18 upper-division 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.

4350   Advanced Gender Studies (3-3-0)
Prerequisites: 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
Prerequisites: ENG 3304 and ENG 3331 and permission of department.
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)
Prerequisites: 3 hours of literature and junior standing.
Selected topics in language and/or literature. May be repeated when topic varies.

6301   Composition Pedagogy
Prerequisites: Post-baccalaureate standing and 6 hours of upper-division language or writing courses.
Composition theory, technology, and assessment as guides for teaching practices.

6306   Methods of Reading and Writing about Literature
Prerequisites: Post-baccalaureate standing and 6 hours of upper-division 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)
Prerequisites: Post-baccalaureate standing and 6 hours of upper-division 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.

6319 Language Development and Variation: Implications for Educators
Prerequisites: Post-baccalaureate standing and 6 hours of upper-division 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.

Finance (FIN)

1301 Personal Finance (3-3-0)
Prerequisite: Completion and/or concurrent 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
(Formerly RE 2301. Student cannot receive credit for both courses) (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)
Prerequisites: ECO 2301, ACC 2302 and junior standing.
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)
Prerequisites: ACC 2302, ECO 2301, ECO 2302 and completion of or concurrent enrollment in MATH 3309 and junior standing.
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)
Prerequisites: ECO 2301, ECO 2302 and junior standing.
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.

3307 Financial Institutions (3-3-0)
Prerequisite: FIN 3302.
The relationship of financial institutions and their participation in financial markets. Interest rates and monetary and fiscal management are explored and monitored via current events.

3309 Quantitative Methods in Finance (3-3-0)
Prerequisites: 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)
(Formerly RE 3301. Student cannot receive credit for both courses.)
Prerequisite: Junior standing
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)
(Formerly RE 3302. Student cannot receive credit for both courses.)
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)
(Formerly RE 3303. Students cannot receive credit for both courses.)
Prerequisite: FIN 3301.
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)
Prerequisites: 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)
Prerequisites: 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: Completion of or concurrent 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)
(Formerly RE 4301. Students cannot receive credit for both courses.)
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)
(Formerly RE 4306. Students cannot receive credit for both courses.)
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
Prerequisite: FIN 3306, FIN 4305 and FIN 4306, or department's permission.
Financial planning capstone course focusing on the elements of personal finance, investments, insurance, retirement and estate planning. (Certified Financial Planner) exam.

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.

French (FREN)

1401 Elementary French I (4-3-1)
Should not be taken by native speakers of French or by students with two or more years of high school French. Laboratory fee required. $10.
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.
Should not be taken by native speakers of French or by students with two or more years of high school French. Laboratory fee required. $10.
A continuation of FREN 1401, with emphasis on speaking and listening skills. (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)
Prerequisites: Junior standing; formal approval by department chair and dean; cumulative GPA of 3.0 and GPA 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 faculty member.

Geography (GEOG)

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)

6301 World Cultural Geography
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.

Geology (GEOL)

1105 Physical Geology Laboratory (1-0-3)
Prerequisite: Credit or enrollment in GEOL 1305.
Laboratory fee required. $12.
Study of the important rock-forming and economic minerals, the major groups of rocks; introduction to topographic maps and the evolution and classification of landforms. (GEOL 1103)

1106 Historical Geology Laboratory (1-0-3)
Prerequisite: Credit or enrollment in GEOL 1306.
Laboratory fee required. $12.
Study of regional and local geologic maps, cross-sections, correlations and sequence of events diagrams, and identification of the more common groups of invertebrate fossils. (GEOL 1104)

1305 Physical Geology (3-3-0)
Prerequisite: Credit or enrollment in MATH 1301 or MATH 1310.
Examination of the materials that make up our planet, the forces that drive its dynamic systems and form its crust, and the agents that shape the earth's surface. Credit for both GEOL 1305 and 1307 may not be applied toward a degree.(GEOL 1303)

1306 Historical Geology (3-3-0)
Prerequisite: GEOL 1305.
The history of geology and development of concepts about the history of our planet, how geologists interpret earth history, introductory paleontology and the history of life. (GEOL 1304)

1307 Earth Science I (3-2-2)
Laboratory fee required. $12.
An integrated lecture–laboratory approach to physical geology 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. Credit for both GEOL 1305 and 1307 may not be applied toward a degree. (GEOL 1303)

1308 Earth Science II (3-2-2)
Prerequisite: GEOL 1307 or equivalent.
Laboratory fee required. $12.
An integrated lecture–laboratory approach to historical geology 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 1304)

1309 Dinosaurs and the Mesozoic World (3-3-0)
A paleobiological study of the reptiles popularly known as dinosaurs along with the biotic and abiotic aspects of the environments during the time in which they lived.

3300 Undergraduate Research (3-0-9)
Prerequisites: Approval by science advisor and a 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)
Prerequisites: 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 other variables.

3303 Environmental Geology (3-3-0)
Prerequisites: 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.

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.

3402 Stratigraphic Concepts and Procedures (4-3-3)
Prerequisites: GEOL 3411.
Laboratory fee required. $12.
An introduction to the physical and biological aspects of the classification and interpretation of primarily stratiform rocks.

3411 Paleontology (4-3-3)
Prerequisites: 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)
Prerequisites: GEOL 1305/1105 and 1306/1106 or GEOL 1307 and 1308
Laboratory fee requred: $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 -
4490 Selected Topics in Geology
Prerequisites: Upper-level standing; will vary according to topic offered.
Selcted topics in upper-level geology according to the needs and interests of the students. Example topics include micropaleontology and extraterrestrial geology.

4260 Environmental Laboratory and Field Studies (2-0-6)
Prerequisites: credit for BIOL 1302/1102, CHEM 1308/1108, GEOL 1306/1106 and credit or enrollment in BIOL 4360, CHEM 3320 or GEOL 3303. Laboratory fee requred: $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 the ecosystem.

4325 Advanced Microscopy (3-1-6)
Prerequisites: 16 hours of laboratory-based science which includes 8 hours at the upper level, and approval of course 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
Prerequisites: 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.

Government

See course listings under Political Science (POLS).

History (HIST)

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 three of the six 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 three of the six 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 which have shaped modern Texas. (This course satisfies three of the six 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 three of the six hours of American history mandated by the state of Texas.) (HUMA 2319)

3301   Europe in Crisis (3-3-0)
Prerequisites: Six hours in U.S. history and junior standing.
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)
Prerequisites: Six hours in U.S. history and junior standing.
A course in 20th century U.S. social history. Social problems, social change, social movement and social policies are seen in historical perspective. Focus of the course varies each time course is offered.

3304   The Vietnam War (3-3-0)
Prerequisites: Junior standing and three hours of history.
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. The diplomatic, political and social aspects of the war and its effect on the people of both countries is discussed.

3305   The United States, 1900–1945 (3-3-0)
Prerequisites: Six hours in U.S. history and junior standing.
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   U.S. Diplomatic History (3-3-0)
Prerequisites: Junior standing and three hours of history.
This course explains the relationships of the United States with other countries and explains the importance of these connections on the growth of America's political and commercial power.

3308   History of Mexico (3-3-0)
Prerequisites: Six hours in U.S. history and junior standing.
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: Junior standing.
A history of modern England focusing on political, cultural, social, literary, and economic issues.

3310   Russia in Transition (3-3-0)
Prerequisites: Six hours in U.S. history and junior standing.
A study of the change and continuity in politics, literature and society in Russia and the former Soviet Union since 1890.

3311   U.S. Military History (3-3-0)
Prerequisites: Junior standing and three hours of history.
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)
Prerequisites: Junior standing and three hours of history.
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)
Prerequisites: Junior standing.
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)
Prerequisites: Junior standing and three hours of history.
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.
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.
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: Six hours in U.S. History and junior standing.
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.

3318   Latin American History (3-3-0)
Prerequisite: Six hours in U.S. History and junior standing.
This course covers the history of Latin America from pre-Columbian civilizations, through the conquistadors, the colonial period, and the wars of independence. The primary focus of the course is the 19th and 20th centuries.

3319   African American History to 1865 (3-3-0)
Prerequisite: Six hours in U.S. History and junior standing.
Historical analysis of the experience of blacks in West Africa before European contact and the impact of African Americans upon the formation and development of America to 1865. This analysis includes the study of slavery, race relations, urbanization, war, politics, economics, and civil rights.

3320   African American History since 1865 (3-3-0)
Prerequisite: Six hours in U.S. History and junior standing.
Historical analysis of the African American contribution and experience in the formation and development of America since 1865: This analysis includes the study of race relations, urbanization, war, politics, economics, and civil rights.

3321   The African American in Sports (3-3-0)
Prerequisites: Junior standing.
An historical analysis of the relationship between the African American struggle for equality and participation in sports.

3390   History Research and Writing Seminar
Prerequisites: 6 hours of history and junior standing.
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)
Prerequisites: Junior standing; formal 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.

4301   The United States Since 1945 (3-3-0)
Prerequisites: Six hours in U.S. history and junior standing.
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   U.S. Women's History (3-3-0)
Prerequisite: Junior standing
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)
Prerequisites: 6 hours in U.S. History and junior standing.
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)
Prerequisites: 6 hours in U.S. History and junior standing.
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.

4312   History of Modern China (3-3-0)
Prerequisite: Junior standing.
A history of China from the late China dynasty to the post-revolutionary period of today. Political, cultural, social, and economic issues are emphasized.

4390   Special Topics in History (3-3-0)
Prerequisites: Six hours in U.S. history and junior standing.
Selected topics in U.S., world, social and intellectual history. Course may be repeated for credit when topics vary.

6301   Seminar in Modern European History
Prerequisite: Graduate standing.
This course examines European history from the turn of the twentieth 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, war social issues, totalitarianism, and propaganda.

6302   Seminar in U.S. History
Prerequisite: Graduate standing.
This course examines major topics in U.S. 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
Prerequisite: Graduate standing.
This course examines Texas history from its Spanish origins to U.S. statehood. The emphasis will be on social, cultural, political, and economic issues.

Humanities (HUM)

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: Three 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: Three 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.)
Prerequisite: Three hours of literature.
An interdisciplinary study of ethnic contributions to the art, music, drama and literature of the United States

3310 **Cultural Criticism (3-3-0)**
(Cross-listed as ENG. 3340.)
Prerequisites: Three hours of literature and three 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 Arts and Humanities Department Chair.

3312 **Major Developments in the History of Art (3-3-0)**
(Cross-listed as ART 3301)
Prerequisite: Three 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.

3313 **Major Developments in the History of Music (3-3-0)**
(Cross-listed as MUS 3301)
Prerequisite: Three hours of music appreciation.
A study of important historical events in the development of music theory and performance.

3314 **Studies in Autobiography (3-3-0)**
(Cross-listed as ENG 3314)
Prerequisite: Three 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)
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)
Prerequisite: ENG 1301.
World theater from the 18th century to the present.

3320 **Foreign Language Literature in Translation (3-3-0)**
Prerequisite: Three hours of literature.
A survey of selected classic and contemporary texts originally written in languages other than English. This course may be repeated once for credit, with the permission of the department chair.

3321 **Hispanic Culture and Civilization (3-3-0)**
Prerequisites: ENG 1302.
A survey of the cultural traditions of Spanish-speaking populations, 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)
Prerequisite: Three 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.

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.

4313 **Psychology through Literature (3-3-0)**
(Cross-listed as ENG 4313)
Prerequisites: Three 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.)
Prerequisites: Senior standing and 18 upper-division hours in the humanities, including HUM 3310/ ENG 3400.
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 (3-3-0)
Prerequisites: Sixty 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)
Prerequisites: 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
Prerequisites: Junior standing; formal 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.
Selected topics in the humanities; intensive individual study under the guidance of a member of the faculty.

Management (MGT)

3301 Management of Organizations (3-3-0)
Prerequisite: Junior standing.
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.
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)
Prerequisites: PSY 1303 and junior standing.
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.
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.

3305 Planning and Budgeting (3-3-0)
(Formerly FIN 3303. Student cannot receive credit for both courses.)
Prerequisites: CIS 1301, ACC 2302 and junior standing.
The study of formal planning and control systems. Topics include planning procedures and tools, organization of the planning system, budgeting, management by objectives, computer based planning models and comparative planning approaches.

3306 Compensation Management (3-3-0)
Prerequisite: MGT 3302.
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)
Prerequisite: MGT 3301.
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. Credit will not be given for both ADM 3303 and MGT 3307.

3308 Purchasing Management (3-3-0)
Prerequisites: Junior standing and MATH 1305 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: MATH 1305 and junior standing.
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.

3332 Quantitative Decision Making
Prerequisite: MGT 3301 and a grade of C or better in MATH 3309.
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 break-even, 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)
Prerequisites: Junior standing or permission of instructor.
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
Prerequisites: Junior standing.
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.

4308 Applied Organizational Behavior (3-3-0)
Prerequisite: 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 Federal Governmental Procurement (3-3-0)
Prerequisite: MGT 3308.
Instruction in government procurement at the federal level. Comparison of purchasing practices in the public sector and private sector. Emphasis on political, legal and fiscal aspects, contract placement and administration of government contracts and grants.

4312 Contracts Management (3-3-0)
Prerequisite: MGT 4311 or instructor approval.
Administration of contracts in government and private sector. Emphasis on manager's post-award responsibilities to completion of contract. Topics include organization for contract management, contract interpretation, property management, subcontracting, management of progress, quality assurance, financing and funding, negotiating changes and disputes.

4313 State and Local Government Purchasing
Prerequisite: MGT 3308.
Focus of course is on purposes, duties and the potential benefits of state and local government purchasing. Purpose is to develop an understanding of state and local government purchasing programs.

4314 Quality Management (3-3-0)
Prerequisite: 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: 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
Prerequisite: MGT 3332 or MGT 4305.
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)
(Formerly MGT 4309. Students cannot receive credit for both courses.)
Prerequisite: 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 (C.P.M.) examination.

4380 Field Experience
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.

Marketing (MKT)

3301   Principles of Marketing (3-3-0)
Prerequisites: Junior standing.
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: Junior standing or instructor approval.
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.
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.
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
Prerequisite: MKT 3301 or department approval.
An in-depth study of the interrelationships among the elements of the promotional mix: advertising, personal selling, sales promotion and publicity.

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.

4305   Consumer Behavior (3-3-0)
Prerequisite: 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)
Prerequisites: MATH 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.

4307   Traffic and Transportation (3-3-0)
Prerequisite: MKT 3301.
The efficient and timely distribution of products requires extensive understanding of modes of transportation, routing, carriers, documentation, warehousing and shipping documentation. This course focuses on the logistics of moving products domestically and internationally. The advantages and disadvantages associated with various modes of transportation and their suitability for the products being shipped are explored.

4308   Exporting and Importing (3-3-0)
Prerequisite: 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)
Prerequisites: Nine 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.

4380   Field Experience
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.

Mathematics (MATH)

0300 Algebra Tutorial (3-0-0)
Prerequisite: Students are placed in MATH 0300 based on placement test results, taken at UH-Downtown.
This course is intended to build and reinforce the essential arithmetical and algebraic skills needed in order to be prepared for MATH 1300. A multimedia approach is used with attention to individual needs. This course may not be used to satisfy degree requirements.

1101 TASP Tutorial (1-3-0)
Tutorial instruction designed to prepare students to pass the MATH component of the state-mandated Texas Academic Skills Program examination.

1300 Algebra (3-0-0)
Prerequisite: A grade of "C" or better in MATH 0300, placement by exam taken at UH-Downtown or a passing score on the mathematics portion of TASP.
A survey of pre-college algebra. Topics include operations with algebraic expressions, factoring, the Cartesian coordinate system, systems of first-degree equations in two variables solved by graphical and algebraic means, slope and distance formulas, exponents and radicals, an introduction to quadratic equations and stated problems. This course may not be used to satisfy degree requirements. (MATH 1312)

1301 College Algebra (3-3-0)
Prerequisite: A grade of "C" or better in MATH 1300 or placement by exam taken at UH-Downtown.
College-level topics in algebra including variation, systems of linear and nonlinear inequalities, functions and graphs, quadratic equations and functions, exponential and logarithmic functions 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 identities, equations, radian measure, graphing, inverse trigonometric functions, an introduction to polar coordinates 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 or placement by exam taken at UH-Downtown.
An introduction to contemporary mathematical problem-solving techniques. This course cannot be applied toward any degree in the department of Computer and Mathematical Sciences; it is not the prerequisite for any CMS course. Designed for students requiring one college level mathematics course. (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.
Topics from plane analytic geometry needed in calculus are stressed as well as a thorough treatment of the elementary functions and their graphs; also included are the Binomial Theorem, sequences, series, mathematical induction and an introduction to limits. (MATH 2412)

1505 Introduction to Analysis (5-5-0)
Prerequisite: Department approval and a grade of "B" or better in MATH 1301.
Topics from trigonometry which are covered include identities, equations, radian measure, graphing, inverse trigonometric functions, polar coordinates, and applications related to these topics. Also covered are topics from analytical geometry needed in calculus, elementary functions and their graphs, the Binomial Theorem, sequences, series, mathematical induction and an introduction to limits.

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)

2305 Discrete Mathematics (3-3-0)
Prerequisites: 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)
Prerequisites: 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, ligevectors 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)
Prerequisites: 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.

3302   Probability and Statistics(3-3-0)
Prerequisite: A grade of "C" or better in MATH 2401.
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 cannot be given for both MATH 3302 and MATH 3309.

3303   Geometry (3-3-0)
Prerequisite: "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 Education majors.

3306   Introduction to Modern Algebra (3-3-0)
Prerequisites: 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)
Prerequisites: A grade of "C" or better in MATH 2307 and MATH 2403.
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)
See CS 3308.

3309   Statistical Analysis for Business Applications I (3-3-0)
Prerequisites: 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 MATH 3302 and MATH 3309.

3310   Statistical Analysis for Business Applications II (3-3-0)
Prerequisite: MATH 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.

3315   Introduction to Mathematical Modeling (3-3-0)
Prerequisite: A grade of "C" or better in Math 3301 (Differential Equations) and Math 2403 (Calculus III).
The goal of this course is to impact to students the excitement and usefulness of mathematics as a fundamental tool in solving real-world problems. The course emphasizes manners in which mathematical models are constructed for physical problems and illustrates from many fields of endeavor, such as the physical sciences, biology, and traffic dynamics.

3316   Theory of Computation (3-3-0)
See CS 3306

3321   Math Concepts I (3-3-0)
Prerequisites: Math 1301 or Math 1310 with grade of "C" or better. Restricted to students in Urban Education or permission of CMS department chair.
Topics are chosen from: logic, set theory, mathematical systems, consumer math, geometry, and statistics.

3322 Math Concepts II (3-3-0)
Prerequisites: Math 1301 or Math 1310 with grade of "C" or better. Restricted to students in Urban Education or permission of CMS department chair.
Topics are chosen from: number theory, measurement, estimation, problem-solving, history of mathematics with emphasis on the development of numbers, computation, and algebra. Material on twentieth century mathematics and the use of technology is also included.

3330 Introduction to Geometric Modeling (3-3-0)
See CS 3330.

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
Prerequisites: Advanced standing, ENG 3302, SPCH 1304, departmental approval and passing score on the writing proficiency exam.
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 MATH 3302 or MATH 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.

4301 Advanced Numerical Methods for Science and Engineering (3-3-0)
See CS 4301.

4302 Advanced Multivariable Calculus (3-3-0)
Prerequisites: 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.

4303 Decision Mathematics (3-3-0)
Prerequisite: A grade of "C" or better in MATH 3302 or MATH 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.

4304 Methods of Applied Mathematics (3-3-0)
Prerequisites: 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)
Prerequisites: 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.

4306 Mathematics Models and Computer Simulation (3-3-0)
See CS 4306.

4307 Time Series (3-3-0)
Prerequisite: A grade of "C" or better in MATH 3302 or MATH 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 MATH 3302 or MATH 3310.
Principles of design and analysis of experiments including randomized blocks, Latin, Graeco-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 MATH 3302 or MATH 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^2 and adjusted R^2, significance tests multicollinearity, comparison with ANOVA, dummy variables and coding, stepwise regression, prediction and inference 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)
Prerequisites: A "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.

4312 History of Applied Mathematics (3-3-0)
See CS 4312.

4328 Parallel Computing (3-3-0)
See CS 4328

4333 Theory and Application of Neural Nets (3-3-0)
See CS 4333

4334 Fuzzy Logic: Theory and Applications
See CS4334

4380 Field Experience
Prerequisites: At least 60 semester hours and department approval and "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
Prerequisites: "B" or better in MATH 4294; ENG 3302, SPCH 1304, senior standing and department approval. Requires GPA of 3.0 or better.
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 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 the 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.

5309 Business Statistics
Prerequisites: Graduate standing or mathematics 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.

6301 Geometry for Elementary Teachers
Prerequisite: Department approval.
Topics will be chosen from Euclidean geometry: properties of lines, planes, polygons and circles and other curves; concepts of congruence, symmetry, simple transformations and tesselations; techniques of measurement. Emphasis on application, the use of manipulatives, graphing calculators and appropriate computer software.

6302 Mathematical Structures for Elementary Teachers
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 Elementary Teachers
Prerequisite: Department approval.
Topics will be chosen from: principles of counting, elements of probability, simulation and modelling techniques, introduction to graph theory, descriptive statistics including a variety of graphing procedures. Emphasis on manipulatives, calculators and appropriate computer software.

6311 Geometry for Secondary Teachers
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 Secondary Teachers
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
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; modelling and simulation; uses of technology in mathematics; web use for searches of mathematical concepts and procedures. Emphasis on appropriate computer software.

Microbiology (MBIO)

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 and CHEM 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)

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)
Prerequisites: 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)

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)
Prerequisites: Approval by science advisor, a minimum
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)
Prerequisites: CHEM 3301/3201 and 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.

3399 Directed Study in Microbiology
Prerequisite: Approval of the department chair and the
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 Microbiology Seminar (1-1-0)
Prerequisites: Senior standing or permission of the
instructor, MBIO 2305/2105 and eight hours of upper-
level science.
Readings and student presentations of relevant articles from current scientific journals or the results of the research.

4111 Methods in Recombinant DNA Technology (1-0-3)
Prerequisites: MBIO 2305/2105, BIOL 3303/3103,
credit or enrollment in MBIO 4310 and eight additional
hours of upper-level science.
Laboratory fee required. $12.
Techniques in recombinant DNA technology including growth and assays of bacteria and bacteriophage; restriction enzyme digestions of plasmids, bacteriophage and recombinant DNA; and gel electrophoresis analysis of restricted DNA.

4120 Immunology Lab (1-0-3)
Prerequisite: Credit or enrollment in MBIO0 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.

4310 Industrial Microbiology (3-3-0)
Prerequisites: MBIO 2305/2105, BIOL 3303/3103
and eight additional hours of upper-level science.
Fundamental principles of biotechnology with emphasis on microbial systems and practical applications of genetic engineering and clinical systems.

4320 Immunology (3-3-0)
Prerequisites: MBIO 2305/2105 and 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)
Prerequisites: MBIO 2305/2105, CHEM 3301/3201
and credit or enrollment in MBIO 4140.
Microbial pathogens, clinical characterization, disease symptoms and chemotherapy.

4380 Field Experience
Prerequisites: At least 85 hours and departmental
approval.
Field experience integrates theory learned in microbiology courses with practical laboratory or field experiences. May be repeated for additional credit; six hours may be applied toward degree in applied 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.

Music (MUS)

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. (MUSI 1308)

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. (MUSI 1309)

3301 Major Developments in the History of Music (3-3-0)
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 (3-3-0)
Prerequisite: MUS 2301 or 2302.
This course will introduce students to various styles of jazz from its beginning at the end of the 19th century to the present. Beginning with the early years of

"traditional" jazz in New Orleans and progressing chronologically, students will be introduced through videos, recordings and readings to major figures and major styles of jazz, and will be given an overview of the political, social and artistic elements that helped to shape styles from traditional to modern to contemporary jazz.

3399 Directed Study in Music
Prerequisites: Junior standing; formal approval by department chair and dean; cumulative GPA of 3.0 and GPA 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.

Natural Sciences (NS)

3310 Physical Science Studies (3-1-4)
Prerequisite: Admission to Teacher Education Program. Laboratory fee required: $12.
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. Laboratory fee required: $12.
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. Laboratory fee required: $12.
An integrated lecture/laboratory course emphasizing principal areas of the life sciences and their applications in society and to science education.

6301 Selected Topics in Earth and Environmental Science (3-3-0)
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: 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.

Philosophy (PHIL)

1301   Introduction to Philosophy (3-3-0)
Prerequisite: ENG 1301 or concurrent 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
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: ENG 1301 or concurrent 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: ENG 1301 or concurrent 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: Three hours of philosophy or junior standing.
Ethical theories, both traditional and modern, as applied to contemporary personal and professional problems; emphasis on legal, medical, political and business ethics and the so-called new morality.

3302   Philosophy of Science (3-3-0)
Prerequisite: ENG 1302
An examination of the organization of the sciences, the logic of their theories and methods, with some attention to the sciences' implications for cultural and moral values.

3304   Logic (3-3-0)
Prerequisite: Successful completion of ENG 1302.
An advanced skills class which 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: Three hours of philosophy.
A survey of recent philosophic schools and movements from Nietzsche to the deconstructionists. Emphasis on phenomenological and existential philosophies.

3319   Philosophy of Gender
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. (W) Writing Class.

3320   Environmental Ethics
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 study of religion and religious experience around the world.

3323   Philosophy of Religion (3-3-0)
Prerequisite: ENG 1302.
Essence and meaning of religion. A consideration of the problems of faith and reason, the nature of deity, arguments for and against God's existence; nature of evil.

3399   Directed Study in Philosophy
Prerequisites: Junior standing; formal approval by department chair and dean; cumulative GPA of 3.0 and GPA 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.

3340   Postmodern Theory
Prerequisites: Both PHIL 2301 and 2302, or
Contemporary Philosophy, or permission of the
instrutor.
This class will study the development of postmodern the-
ory 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 philoso-
phy.

4315   Symbolic Logic (3-3-0)
*Prerequisite: An introductory-level philosophy course or
permission of instructor.*
An introduction to the principles of ordered thought,
discussing the logic of predicates, quantifiers; non-
deductive arguments; calculation of probabilities, statis-
tical inference, prepositional 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.

Physics (PHYS)

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.*
Topics include: electric and magnetic fields, DC and AC
circuits, non-linear devices, geometric and physical
optics, and atomic and molecular physics. (PHYS 1102)

1301   Introduction to Solar System Astronomy (3-2-2)
*Prerequisite: Credit or enrollment in MATH 1301 or
MATH 1310.
Laboratory fee required. $12.*
This course is a survey of 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 interac-
tions between astronomy and society such as technolo-
gy 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.*
This course is a survey of stellar and galactic systems.
The course surveys the evolution and properties of stars,
galaxies, clusters of galaxies, the properties of inter-
stellar matter, cosmology and the effort to find extrater-
restrial 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.)

1307   General Physics I (3-3-0)
*Prerequisites: 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)
*Prerequisites: 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 electro-
magnetic waves, and geometrical and physical optics.
(PHYS 2126)

2401 **Physics I (4-4-0)**
Co-requisite: 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)**
Prerequisites: Grade of C or better in PHYS 2401 and enrollment in or credit for 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)**
Prerequisites: 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)**
Prerequisites: 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.

3330 **Statistical and Thermal Physics (3-3-0)**
Prerequisites: PHYS 2402 and MATH 2403.
See CHEM 3330.

3393 **Intermediate Mechanics I (3-3-0)**
Prerequisites: 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)**
Prerequisites: 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.

4308 **Quantum Physics (3-3-0)**
Prerequisites: PHYS 3307, MATH 2403 and MATH 3301.
An introduction to quantum theory and basic elements of quantum mechanics through the Schroedinger and matrix approaches, barrier penetration, simple perturbation with applications to atomic and nuclear spectroscopy, condensed matter and other appropriate topics.

4320 **Physical Properties of Materials (3-3-0)**
Prerequisite: PHYS 3307.
A survey of the electrical, magnetic and thermal properties of modern materials. Selected systems include metals and alloys, semiconductors, ceramics, liquid crystals, and polymers. Practical applications, particularly to physics and chemistry, will be discussed and current literature topics will be introduced in the lecture-discussions.

4380 **Field Experience**
Prerequisites: 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; 6 hours may be applied toward a degree.

4399 **Senior Honors Thesis**
Prerequisites: 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)**
Prerequisites: 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.

Political Science (POLS)

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. (POLS 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. (POLS 2302)

3301   Introduction to Public Administration (3-3-0)
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: 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.

3305   Principles of Political Science
Prerequisites: POLS 2303, POLS 2304 and junior standing.
A study of the basic concepts of political science and various methodologies of the discipline.

3306   Civil Liberties in the United States (3-3-0)
Prerequisites: 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)
Prerequisites: 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.

3309   Texas Politics (3-3-0)
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: 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, pubic 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)
Prerequisites: POLS 2303, POLS 2304 and junior standing.
An overview of the U.S. legal system, with emphasis on the courts in an urban environment.

4302   Comparative Politics (3-3-0)
Prerequisites: POLS 2303, POLS 2304 and junior standing.
The study of comparative politics aims at training students in systematically, critically and analytically examining the political, economic and social dynamics of nations in the international political system. More specifically, this course provides students with an in-depth knowledge about a particular region of the world. The region emphasized may differ from semester to semester. May be repeated for credit when the area focus changes.

4303 **International Politics (3-3-0)**
Prerequisites: POLS 2303, POLS 2304 and junior standing.
The study of international politics requires that the student discern who/what are the key actors in world politics; from what perspectives to view global events; determine if there are regular behavior patterns of such global actors; what are the stimuli of such behavior; and, to what extent does change in the behavior patterns of these key actors lead to changes in the structure of the international system.

4304 **American Political Thought (3-3-0)**
Prerequisites: 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)**
Prerequisites: 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)**
Prerequisites: 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.

4390 **Selected Topics in Political Science (3-3-0)**
Prerequisites: 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.

6301 **American Government and Politics (33-3-0)**
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**
Prerequisite: Graduate standing.
This course is intended to introduce graduate students to the major theoretical concepts in the study of Political Science. Topics to be discussed include: approaches to the study of political science; the nature of power, influence, authority; political ideologies; relationship 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.

Professional Land Management (PLM)

2301 **Introduction to Oil Industry and Professional Land Management (3-3-0)**
Prerequisite: Sophomore standing.
An overview of the oil industry and professional land management functions as they relate to the oil and gas exploration, leasing, drilling, production, transportation and economics of the industry. Special emphasis is given to the understanding and use of oil and gas maps, land mensuration and land description.

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.

4301 **Legal Aspects of Land Management (3-3-0)**
Prerequisites: RE 2302, PLM 2301 and BA 3302.
Oil and gas law including legal concept of mineral interest, transactions which affect the mineral interest such as leasing, pooling and unitization, and governmental regulation of minerals.

4303 **Land Management Practice (3-3-0)**
Prerequisites: PLM 2301, PLM 4301 or departmental approval. Concurrent enrollment in PLM 4304.
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**
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.

Psychology (PSY)

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)

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.

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)**
Prerequisites: 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.

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)**
Prerequisites: PSY 1303 and three 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)**
Prerequisites: PSY 1303 and three 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**
Prerequisites: 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, neuroendrocrine, and sensorimotor systems, as well as basic principles of evolution and genetics.

4301   **The History of Psychology (3-3-0)**
Prerequisites: PSY 1303, six 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)**
Prerequisites: PSY 1303, six 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)**
Prerequisites: PSY 1303, six 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)**
Prerequisites: PSY 1303, six 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**
Prerequisites: PSY 1303, six 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)
Prerequisites: 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, six 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 sith 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)
Prerequisites: PSY 1303, six 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.

4370   Senior Seminar in Psychology (3-3-0)
Prerequisites: PSY 1303, six additional hours in psychology and Junior standing.
In-depth investigation of selected topics in psychology. May be repeated for credit when topic varies. (Pending Coordinating Board approval)

Reading (RDG)

1101   TASP Tutorial (1-1-0)
Tutorial instruction designed to prepare students to pass the Reading component of the state-mandated Texas Academic Skills Program examination.

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. This course may not be used to satisfy degree requirements.

Reading Education (READ)

3301   Teaching Reading in the Elementary Schools (3-3-0)
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 (3-3-0)
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 (3-3-0)
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 (3-3-0)
Prerequisites: 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 Development and Instruction, Early Childhood–Grade 8
Prerequisites: Admission to Teacher Education Program.
Courses focuses on the developmental nature of reading and examines theoretical approaches to literacy instruction.

3306   Language and Literacy Development (3-3-0)
Prerequisite: Admission into Teacher Education Program.
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 (3-3-0)
Prerequisite: Admission into Teacher Education Program.
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 (3-3-0)
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 Area 4–8 (3-3-0)
Focuses on reading as a thinking and learning process. Emphasizes current theory and methods for teaching reading and study strategies for elementary and middle school classroom teachers.

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 (3-3-0)
Prerequisite: Admission to Teacher Education Program and concurrent enrollment in Interdisciplinary Block I Secondary.
Field-based course which focuses upon 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 (3-3-0)
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.

4303   Literacy Curriculum, Methods, Assessment (3-3-0)
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 (3-3-0)
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 (3-3-0)
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
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.

Secondary Education (SED)

See course listings under Education.

Social Sciences (SOS)

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)
Prerequisites: 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)
Prerequisites: 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
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: 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 (3-3-0)
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
Prerequisites: 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
Prerequisites: 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
Prerequisites: 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.

Social Science—Education (SOSE)

See course listings under Education.

Sociology (SOC)

1303 Principles of Sociology (3-3-0)
Prerequisite: Enrollment in or completion of 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: Any 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)
Prerequisites: 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)

3303 Sociology of the Family (3-3-0)
Prerequisites: 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)
Prerequisites: 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)
Prerequisites: SOC 1303 and junior standing.
U.S. 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)
Prerequisites: 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)
Prerequisites: 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. (Pending Coordinating Board approval)

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 used 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 used involvement; 4) contemporary approaches to substance use prevention among adolescence; 5) socio-cultural causes of substance use.

4301 Political Sociology (3-3-0)
Prerequisites: SOC 1303, three 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 non-participant 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)
Prerequisites: SOC 1303, three 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)
Prerequisites: SOC 1303, three 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.

4307 Public Opinion and Mass Communication (3-3-0)
Prerequisites: SOC 1303, three additional hours of sociology and junior standing.
The nature and development of public opinion and the process and impact of mass communication.

4390 Special Topics in Sociology (3-3-0)
Prerequisite: SOC 1303 and three additional hours in sociology, junior or senior 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.

Spanish (SPAN)

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)
Should not be taken by native speakers of Spanish or by students who have had two or more years of high school Spanish.
Laboratory fee required. $10.
Instruction in understanding, speaking, reading and writing. Spanish with emphasis on grammatical structures. (SPAN 1411)

1402 Elementary Spanish II (4-3-1)
Prerequisite: SPAN 1401 or equivalent.
Should not be taken by native speakers of Spanish or by students who have had more than two years of high school Spanish.
Continuation of SPAN 1401. (SPAN 1412)

1601 Experiencing Spanish I
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.

1602 Experiencing Spanish II
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 II material through role-playing, games, music, and movement with this methodology that addresses visual, audio, and kinesthetic learning modes.

2301 Intermediate Spanish I (3-3-0)
Prerequisite: SPAN 1402, SPAN 1412 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 (3-3-1)
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 (3-3-1)
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.

3310 Spanish Conversation through Literature (3-3-0)
Prerequisites: 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.

4310 Spanish Linguistics (3-3-0)
Prerequisites: Completion of SPAN 3301 or approval of chair.
Descriptive and contrastive study of the phonetics, phonology, morphology and syntax of Spanish with English. The course is taught completely 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.

Speech Communication (SPCH)

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 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)

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)

1385 Communication in the Classroom
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. (SPCH 2320)

2303 Argumentation and Debate (3-3-0)
Prerequisite: SPCH 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.

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.

3303 Readers Theatre (3-3-0)
Prerequisites: 3 hours of literature or DRA 1303 or DRA 1304 or 3 hours of speech.
Readers Theatre is designed to introduce students to various forms of group performance. The course fuses acting/performance, critical thinking skills, and textual analysis. Specifically, this course introduces students to the theoretical and historical underpinnings of this form of performance, while providing an opportunity to create and perform Readers Theatre scripts.

3304 Public Speaking (3-3-0)
Prerequisite: SPCH 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.

3306 Business and Professional Speech Communication (3-3-0)
Prerequisite: SPCH 1304 or ENG 1302.
Effective communication in a business and professional setting. Units include: interview, group decision making, informing, and persuading.

3308 Family Communication (3-3-0)
Prerequisite: Three hours of speech.
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.

3310 Women, Men and Communication (3-3-0)
Prerequisite: Three hours of speech.
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.

3320 Communication Theory (3-3-0)
Prerequisite: ENG 1301, ENG 1302, and 3 hours of speech
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

4310 Communication in the Organization (3-3-0)
Prerequisite: Three hours of speech.
Emphasis is placed 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 (33-0)
Prerequisites: SPCH 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.

4390 Issues in Speech Communication (3-3-0)
Prerequisite: Three hours of speech.
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.

6301 Speech Communication for the Elementary School Teacher
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
Prerequisite: Graduate standing.
An experientially-oriented course designed to explore the theoretical and pragmatic rationale for using thoughtful communication 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.

Directory

Administration

Office of the President

President
Max Castillo, EdD

Executive Assistant to the President and Director of Constituent Relations
Ivonne Montalbano, MBA

Executive Director, Institutional Advancement
Anne Murphy, MPS

Director of Communications and Marketing
Betsy Ballard, BA, APR

Office of Academic Affairs

Vice President for Academic Affairs and Provost
Molly R. Woods, EdD

Assistant Vice President for Academic Affairs
vacant

Associate Vice President for Policy and Planning
J. David Fairbanks, PhD

Dean of Humanities and Social Sciences
Michael R. Dressman, PhD

Associate Dean of Humanities and Social Sciences for Student Affairs
B. Christiana Birchak, PhD

Associate Dean of Humanities and Social Sciences for Graduate Affairs and Off-campus Programs
Anjoo Sikka, PhD

Chair of Arts and Humanities
Susan Baker, PhD

Chair of Criminal Justice
Beth Pelz, PhD

Chair of English
William Gilbert, PhD

Chair of Social Sciences
Linda Vaden-Goad, PhD

Chair of Urban Education
Maria Bhattacharjee, EdD

Dean of Sciences and Technology
George Pincus, PhD

Assistant Dean of Sciences and Technology
Kenneth Oberhoff, PhD

Chair of Computer and Mathematical Sciences
Kenneth Oberhoff, PhD

Chair of Engineering Technology
Alberto Gomez-Rivas, PhD

Chair of Natural Sciences
Larry G. Spears, PhD

Executive Director, Research, Grants, and Contracts
Richard A. Alo, PhD

Dean of Business
Bobby Bizzell, PhD

Assistant Dean of Business
Herbert Rebhun, PhD

Chair of Management, Marketing, and Business Administration
Carl Ruthstrom, PhD

Chair of Finance, Accounting and Computer Information Systems
Asghar Nazemzadeh, PhD

Dean of University College
Dan R. Jones, PhD

Director of Academic Advising Center
Renee Borns, PhD

Executive Director, Talent Search and Upward Bound
Jennifer Hightower, MEd

Director, Upward Bound
Dawanna Lewis, MA

Director of Academic Support Center
Isidro Grau, MA

Director of Jesse Jones Collaborative
Branden Kuzmick, MS

Director of Academic Counseling Center
Gary Greer, MBA

Director of Title V Program
Robin Davidson, PhD

Director of W.I. Dykes Library
Patricia Ensor, MLS

Director of Applied Business and Technology Center
G. V. Krishnan, MS

Director of Criminal Justice Center
Rex White, BS

Director of English Language Institute
Gail Kellersberger, MA, MFA

Executive Director of Distance Education
Gail S. M. Evans, JD

Office of Administration

Vice President for Administration
T. Chaney Anderson, MA, MEd

Interim Assistant Vice President for Business Affairs
Phyllis Rusk, BBA

Director of Physical Plant/Facilities Management
Chris McCall, BS

Assistant Vice President for Human Resources and Affirmative Action Officer
Geneva Hagedorn, PhD

Assistant Vice President for Administration
David Bradley, MBA

Chief of Campus Police and Safety Officer
Mark Moulton, MS

Division of Student Affairs
Dean of Student Affairs
vacant
Director of Scholarships and Financial Aid
Lisa Beaudo, BA
Director of Enrollment Services
Juan B. Garcia, MS
Director of Student Activities
Tom Corti, PhD
Director of Counseling, Career & Student Health Services
Caroline Jurgens, EdD
Director of Houston Resource Center
Cynthia Ybarra, BA

Faculty

Abramowitz, Joan S. (1987) Associate Professor of Biology. BA, Ithaca College, 1971; MS, New York University, 1975; PhD, 1981.

Ahern, Susan Kiernan (1983) Associate Professor of English. AB, University of Illinois, 1971; MA, Ball State University, 1973; PhD, University of Illinois, 1980.

Aló, Richard A. (1982) Professor of Mathematical Sciences. BA, Gannon College, 1960; MA, Pennsylvania State University, 1965; PhD, 1965.

Alvarez, José E. (1996) Assistant Professor History. BA, Florida Atlantic University, 1977; MA, 1981; PhD, Florida State University, 1995.

Anderson, T. Chaney (1968) Assistant Professor of Mathematics. BS, Abilene Christian College, 1960; MEd, 1961; MA, University of Oregon, 1967.

Ashe, Carolyn H. (1992) Associate Professor of Administrative Management. BBA, University of North Texas, 1969; MBA, 1971; EdD, University of Houston, 1984.

Aven, Forrest (1990) Associate Professor of Management. BBA, Texas Christian University, 1976; MBA, 1977; PhD, University of Colorado, 1988.

Avenoso, Alfred Charles, Jr. (1976) Professor of Biology. BA, University of St. Thomas, 1964; PhD, University of Florida, 1968.

Baker, Susan J. (1995) Associate Professor of Art. BA, University of Oklahoma, 1982; MA, University of Kansas, 1985; PhD, University of Kansas, 1994.

Baker, Victoria (1990) Lecturer in Mathematical Sciences. BS, Universidad Nacional Autonoma de Honduras, Tegucigalpa, D.C. Honduras, 1980; MEd, Texas A&M University, 1988.

Barnes, Ronald F. (1977) Professor of Mathematical Sciences. BS, St. Bonaventure University, 1964; MS, Syracuse University, 1966; PhD, 1972.

Bartholomew, Barbara G. (1981) Associate Professor of English. BA, University of Texas, 1957; MA, Tulane University, 1958; PhD, 1962.

Beauboeuf, Tamara M. (1998) Assistant Professor of Psychology. AB, Bryn Mawr College, 1990; MA, Cornell, 1992; EdD, Harvard University, 1997.

Becerra, Linda (1986) Associate Professor of Mathematical Sciences. BA, University of Texas at Austin, 1971; MS, University of Houston, 1977; PhD, 1982.

Behan, Pamela (2000) Assistant Professor of Sociology. Ph.D., University of Colorado at Boulder, 1999; B.S., University of Kansas, 1971.

Beheshti, Moshen (1992) Associate Professor of Mathematical Sciences. BS, University of Southwestern Louisiana, 1985; MS, 1986; PhD, 1992.

Belbot, Barbara (1996) Associate Professor of Criminal Justice. BA, Xavier University, 1974; JD, University of Houston, 1980; MPH, University of Texas Health Science Center, 1985; PhD, Sam Houston State University, 1995.

Bernstein, Susan (2001) Assistant Professor of English. BA, Knox College, 1980; MA, Ohio University, 1988; PhD, Pennsylvania State University, 1993.

Berrached, Ali (1993) Associate Professor of Mathematical Sciences. BS University of Texas, 1986; MS Pennsylvania State University, 1990; PhD, 1993.

Berry, John M. (1983) Associate Professor of Philosophy. BA, Divine Word College, 1953; PhB, Gregorian University, 1958; PhL, 1959; PhD, Catholic University of America, 1979.

Bhattacharjee, Maria P. (1996) Associate Professor of Education. BA, Pedagogic Institute of Caracas Venezuela, 1974; MEd, University of Houston, 1977; EdD, University of Houston, 1995.

Birchak, Beatrice Christiana (1987) Associate Professor of English. BS, University of Houston, 1963; MA, Wayne State University, 1968; PhD, University of Houston, 1984.

Bizzell, Bobby G. (1989) Professor of Management. BBA, University of Texas at Austin, 1963; MBA, 1964; PhD, 1971.

Bradshaw, Kenneth R. (1997) Lecturer in Business Law and Petroleum Land Management. AA, San Jacinto College, 1972; BS, University of Houston-Downtown, 1987; JD, South Texas College of Law, 1990.

Brekke, Gail (2000) Lecturer. BA, University of Houston,1988; MA, 1994.

Bressler, Linda (2001) Assistant Professor of Accounting. BA, Clark University, MA, Thomas College, PhD, University of Sarasota, 2001.

Brigman, William E. (1983) Professor of Political Science. BA, University of North Carolina, 1958; PhD, 1966.

Brown, Evelyn (1999) Assistant Professor of Education. BS, Texas Southern University, 1977; MS, Prairie View A&M, 1982; PhD, Ed. Admn., University of Southern Mississippi, 1997.

Canetti-Rios, Barbara (1990) Lecturer in English. BS, University of Houston-Downtown, 1989; MA, University of Houston, 1996.

Capeheart, John (1976) Professor of Biology. BS, East Texas State University, 1968; MS, 1969; PhD, Texas Tech University, 1974.

Cervenka, Mark (2000) Director of the O'Kane Gallery and Lecturer in Art. BA, University of Texas at Austin, 1983; BFA, 1985; MFA, Claremont Graduate University, 1987.

Chadha, Anita (2001) Assistant Professor of Political Science. BA, Samford University, 1990; MPA, Auburn University, 1993; Ph.D., 1997.

Chen, Irene (1998) Assistant Professor of Education. BA, National Taiwan University, 1987; MBA, 1989; MM, 1990; University of Dallas, EdD, University of Houston, 1998.

Cheng-Levine, Jia-yi (1997) Assistant Professor of English, BA, Tamkang University, Taiwan, 1989; MA, University of Georgia, 1993; PhD, Indiana University (Pennsylvania), 1997.

Chiaviello, Anthony (1999) Assistant Professor of English. AB, Oberlin College, 1976; MA, University of Denver, 1981; PhD, New Mexico State, 1998.

Christian, Garna L. (1962) Professor of History. BA, Mexico City College, 1959; MA, Texas Western College, 1961; PhD, Texas Tech University, 1978.

Christmas, Byron K. (1991) Associate Professor of Chemistry. BS, Murray State University, 1970; MS, University of Kentucky, 1976; PhD, 1978.

Cmajdalka, Sandy, L. (1998) Assistant Professor of Education. BA, Texas A&M University, 1991; MEd, 1992.

Coblentz, Linda J. (1981) Lecturer in English. BA, Oklahoma State University, 1966; MA, University of Houston, 1976.

Cohen, Myrna (2000) Assistant Professor of Education. University of Houston, EdD, 1993; M.Ed., 1998, Hebrew University of Jerusalem, BA, 1975.

Corrigan, Dagmar (1997) Lecturer in English. BA, University of Houston-Clear Lake, 1992; MA, 1996.

Creighton, Jane (1997) Assistant Professor of English. BA, Johnson College, University of Redlands, 1973; MA, University of Houston, 1991; PhD, Rice University, 1996.

Cuevas, Carmen (1996) Lecturer in Business Law and Senior Academic Advisor. BA, University of Texas at Austin 1973; JD, Boston College Law School, 1979.

Cuellar, Roxane (2000) Visiting Assistant Professor of Education. BS, Texas A & M University, 1990; MEd, 1993.

Cunningham, Merrilee A. (1975) Associate Professor of English. BA, Northwestern University, 1966; MA, Marshall University, 1970; PhD, Vanderbilt University, 1978.

Dahlberg, Sandra L. (1997) Assistant Professor of English. BA, University of Puget Sound, 1991; MA, University of Washington, 1993; PhD, 1997.

de Korvin, André (1987) Professor of Mathematical Sciences. BA, University of California, 1962; MA, 1963; PhD, 1967.

DeLaViña, Ermelinda (1997) Assistant Professor of Mathematical Sciences. BS University of Texas-Pan American 1989; MS, University of Houston, 1993; PhD, 1997.

Deeba, Elias Y. (1983) Professor of Mathematical Sciences. BS, American University of Beirut, Lebanon, 1971; MS, 1973; DA, Carnegie-Mellon University, 1977.

DeWitt, Jean M. (1987) Associate Professor of Speech. BA, University of Wisconsin, 1969; MA, University of Maryland, 1980; PhD, 1987.

Derrick, Donald H. (1968) Assistant Professor of Chemistry. AA, Blinn College, 1957; BS, University of Texas, 1959; MS, University of Houston, 1967.

DeVries, Peter (2000) Assistant Professor of CIS, PhD, University of Arkansas, 1994; MBA, Southwest Texas State University, 1987; BS, Texas A & M University, 1983.

Dressman, Michael R. (1982) Professor of English. AB, University of Detroit, 1967; MA, 1969; PhD, University of North Carolina at Chapel Hill, 1974.

Driy, James A. (1977) Associate Professor of Chemistry. BA, Hope College, 1965; MS, Michigan Tech University, 1967; PhD, 1971.

Duangploy, Orapin (1987) Professor of Accounting. BA, Stephens College, 1971; MS, University of Missouri, 1972; PhD, 1977; CPA.

Durr, David W. (1995) Associate Professor of Finance. BBA, University of Texas at Austin, 1982; MBA, Stephen F. Austin State University, 1985; PhD, University of North Texas, 1995.

Ebner, Stanley G. (1976) Associate Professor of Engineering Technology. BS, University of Nebraska, 1955; BS, University of Colorado, 1963; MS, 1964; PhD, 1967; PE

Efraty, David (1988) Professor of Management. BA, University of New Brunswick, 1965; MASc, University of Waterloo, 1968; PhD, Case Western University, 1975.

Engram, Peggy (1988) Assistant Professor of Criminal Justice, BS, University of Houston, 1970; MA, Texas Southern University, 1973; PhD, University of Texas School of Public Health, 2000.

Evans, Gail S. M. (1980) Professor of Business Law. BA, Northwestern University, 1969; JD, University of Texas, 1972.

Fadely, Patricia A. (1988) Lecturer in English. BA, University of St. Thomas, 1968.

Fairbanks, James David (1976) Professor of Political Science. BA, Greenville College, 1968; MA, The Ohio State University, 1969; PhD, 1975.

Farnsworth, George Low (2000) Assistant Professor of Biology. BS, College of William and Mary, 1991; MS, University of Virginia; PhD, North Carolina State University, 1998.

Farris, Sara (1992) Associate Professor of English. BA, Eastern Illinois University, 1983; MA, 1985; PhD, Miami University, 1992.

Feng, Weining (1999) Associate Professor of Process Control. Beng, Beijing University of Aeronautics and Astronautics, China, 1984; PhD, University of Strathclyde, UK, 1990.

Finch, Charlie B. (1997) Assistant Professor of Psychology. BA, Wake Forest University, 1989; MS, Old Dominion University, 1991; PhD, University of South Carolina, 1997.

Flosi, Jeffrey W. (1987) Associate Professor of Biology. BS, University of Texas at El Paso, 1973; MS, 1975; PhD, Iowa State University, 1980.

Franz, Harry J. (1986) Associate Professor of Electrical/ Electronics Engineering Technology. BSEE, University of Pittsburgh, 1972; MSEE, University of Pittsburgh, 1974; PE

Gad, Sangeeta (1986) Lecturer in Mathematical Sciences. MS, University of Bombay, 1970.

Garcia, Viola (1999)Assistant Professor of Education. BS, Elementary Education, Texas Woman's University, Denton, Texas, 1971; MEd, Curriculum and Instruction, University of Houston, 1974.

Getz, J. Greg (1997) Associate Professor of Sociology. BA, University of California, Santa Barbara, 1968; PhD, University of Southern California, 1977.

Ghosh, Priti K (2000) Lecturer in Marketing. MBA, New York University, 1962.

Gilbert, William (1976) Associate Professor of English. BA, Washington and Lee University, 1966; MA, Duke University, 1967; PhD, 1974.

Glazier, Charles Robert (1999) Assistant Professor of Criminal Justice. BS, University of Houston, 1991; MEd, 1993; PhD, 1996.

Goleman, Patricia (2001) Assistant Professor of English. BA, University of Houston, 1974; MA, 1975; PhD, 1999.

Gomez-Rivas, Alberto (1991) Professor of Structural Analysis. BS, Javeriana University, Colombia, 1958; MS, University of Illinois; MA, Rice University, 1976; MS, PhD, University of Texas, 1968; PhD, Rice University, 1980; PE.

Grebowicz, Margret E. (2000) Instructor of Philosophy. MA, Emory University, 1999; BA, University of Texas at Austin, 1994.

Griffard, Phyllis B. (1999) Lecturer in Biology. BS, University of Southwestern Louisiana, 1983; MS, Purdue University; PhD, Louisiana State University, 1999.

Groendyke, Gilbert J. (1997) Assistant Professor of Process and Piping Design. BS, Lafayette College, 1968; MS, Louisiana State University, 1983; PE.

Gulati, Poonam (1997) Assistant Professor of Biology and Microbiology. BS, Cornell University, 1982; PhD, 1988.

Hagedorn, Geneva (1990) Associate Professor of Administrative Services Management. BS, University of Louisville, 1963; MAT, 1969; EdD, University of Kentucky, 1979.

Hagen, L. Kirk (1990) Associate Professor of Humanities. BA, University of New Mexico, 1980; MA, 1983; PhD, University of Illinois, 1989.

Hampton, George L., III (1976) Professor of Psychology. BS, Trinity College, 1963; MA, University of Arizona, 1966; PhD, 1969.

Haney, Kathleen M. (1986) Professor of Philosophy. BA, Northwestern University, 1968; MA, Tulane University, 1978; PhD, 1982.

Hanson, Gillian M. (1987) Lecturer in English. BA, University of Houston, 1979; MA, 1984; PhD, Somerset University, 1989.

Harned, Jon W. (1982) Professor of English. BA, Indiana University, 1970; PhD, University of Virginia, 1977.

Hashemi, Shohreh S. (1981) Associate Professor of Computer Information Systems. BS, Central State University, 1976; MEd, 1980.

Hill, Richard (1999) Lecturer in Criminal Justice. BS, Southwest Texas State University, 1964; MS, Eastern Kentucky University, 1973.

Hodgess, Erin (1994) Associate Professor of Mathematical Sciences. BS, University of Dayton, 1981; MA, University of Pittsburgh, 1987; MS, Temple University, 1989; PhD, Temple University,1995.

Hoffmann-Pinther, Peter H. (1981) Professor of Physics. BS, St. Mary's University, 1958; MS, Indiana University, 1964; PhD, Ohio University, 1973.

Hood, Beatrice C. (1997) Assistant Professor of Education. BA,Louisiana Tech University, 1967; MEd, Northeastern Oklahoma State University, 1983.

Hu, Chenyi (1990) Associate Professor of Mathematical Sciences. BS, Anhui University, Hefei, China, 1977; MS, Southern Illinois University, 1987; PhD, University of Southwestern Louisiana, 1990.

Islam, Anisul (1990) Professor of Economics. BA, University of Dhaka, 1974; MA, 1975; MA, University of Waterloo, 1978; PhD, University of Alberta, 1985.

Jackson, Gary (1989) Professor of Marketing. BBA, University of Houston, 1968; MBA, Sam Houston State University, 1970; PhD, University of Arkansas, 1977.

Jakovich, Joyce (1996) Lecturer in Criminal Justice. BGS, University of Houston-Downtown, 1991; MA, University of Houston-Clear Lake, 1994.

Jarrett, Robert L. (1990) Associate Professor of English. BA, Abilene Christian University, 1980; MA, University of California at Riverside, 1982; PhD, 1988.

Jennings, Ann S. (1995) Associate Professor of English. BA, University of Southwest Louisiana, 1965; MA, Florida State University, 1966; PhD, 1973.

Johnson, Madeline (1983) Professor of Marketing. BA, University of Texas, 1973; JD, 1976; PhD, University of Houston, 1993.

Johnson, Molly (2001) Assistant Professor of English. BA, University of St. Thomas, 1994; MA, Texas A&M University, 1996;Ph.D., 2001.

Johnson, Robert J. (1996) Associate Professor of Education. BA, University of Texas at El Paso, 1969; MEd, 1989; PhD, Texas A & M University, 1997.

Jones, Dan R. (1985) Associate Professor of English. BJ, University of Texas, 1975; BA, 1975; MA, Rice University, 1975; MA, University of Iowa, 1982; PhD, 1984.

Jones, Etta M. (1995) Assistant Professor of Administrative Management. BS, North Carolina Central University, 1955; MA, New York University, 1958; EdD, University of Houston, 1983.

Kanter, Susan (1996) Lecturer in Reading. BA, University of Massachusetts, 1980; MA, University of Houston, 1993.

Kaser, Karen C. (1996) Assistant Professor of Administrative Management. AAS, San Jacinto College, 1980; BS, 1989, University of Houston, MS, 1990; PhD, University of Nebraska-Lincoln,1996.

Kauffman, Ralph G. (1996) Assistant Professor of Management. BS, Lehigh University; MBA, Northwestern University, 1963; PhD, University of Texas at Dallas, 1993.

Kellar, Charles Mark (2000) Assistant Professor of Criminal Justice, BS, University of Houston, 1968; MA, Sam Houston State University, 1974; Ph.D. Texas A & M, 1979.

Kendall, G. Yvonne (1994) Associate Professor of Music. BS, Austin Peay State University, 1976; MM, New England Conservatory, 1981; DMA, Stanford University, 1985.

Key, Shirley G. (1996) Associate Professor of Education. BA, Gustavus Adolphus College, 1971; MEd, Texas Southern University, 1982; EdD, University of Houston, 1995.

Kinloch, Valerie (2000) Assistant Professor of English. BA, Johnson C. Smith University, 1996; MA, Wayne State University, 1998; PhD, 2000.

Kistenberg, Cindy J. (1992) Associate Professor of Speech Communication. BA, University of North Carolina at Chapel Hill, 1986; MA, 1988; PhD, Louisiana State University, 1992.

Krupp, Ethan H. (2000) Assistant Professor of Drama. BA, Washington and Lee University, 1997; MFA, University of Montana, 2000.

Kuzmick, A. J. Branden (1989) Lecturer in Reading. BA, Marywood College, 1977; MS, 1982.

Leavins, Johnny R. (1978) Professor of Accounting. BBA, Lamar State College, 1968; MBA, Lamar University, 1972; PhD, University of Houston, 1987; CPA.

Leveille, Nancy (1996) Lecturer in Mathematical Sciences. BA, Bridgewater State University, 1976; MA, Boston University, 1974.

Linklater, Thomas B. (1965) Assistant Professor of History. BS, University of Houston, 1958; MA, 1966.

London, Steven (1982) Professor of Mathematical Sciences. BSE, University of Michigan, 1965; MSSE, University of Illinois, 1969; PhD, University of Wisconsin at Madison, 1976.

Long, Lydia (1999) Assistant Professor of Criminal Justice. BS, Central Missouri State University, 1989; MS, 1990; PhD, Sam Houston State University, 1997.

Lyons, Philip (1995) Assistant Professor of Biology. BS, Stephen F. Austin University, 1978; MS, Texas A&M University, 1981; PhD, University of Georgia, 1985.

Lyttle, Thomas J. (1976)Professor of Drama. BA, University of Akron, 1963; MA, 1968; PhD, Bowling Green State University, 1974.

MacGregor, Cherylynn (2000) Lecturer in Anthropology. University of Houston, BA, 1990, MA, 1994.

McCaffrey, James M. (1989) Associate Professor of History. AA, Springfield Junior College, 1968; BS, University of Missouri at Rolla, 1970; ME, University of Houston, 1974; MA, 1987; PhD, 1990.

McCullough, Deanna (1983) Assistant Professor of Biology. BS, Oklahoma Christian College, 1967; MS, Oklahoma State University, 1968; PhD, 1972.

Maranville, Stephen J. (1999) Assistant Professor in Management, BA, Brigham Young University, 1982; MBA, Brigham Young University, 1986; PhD, University of Utah, 1994.

Marvasti, Akbar (1990) Associate Professor of Economics. BS, Rasht University, 1974; MBA, Louisiana State University, 1979; PhD, 1985.

Merrill, Glen K. (1982) Professor of Geology. BS, Ohio University, 1957; MA, University of Texas, 1964; PhD, Louisiana State University, 1968.

Merkle, Larry D. (1998) Assistant Professor of Physics. BS, Oklahoma State University, 1974; MS, 1976; PhD, 1978.

Middleton, Jennie (1997) Assistant Professor of Urban Education, BS, University of Houston, 1977; MEd, University of Houston, 1979; EdD, Texas Southern University, 1994.

Mitchell, David L. (1999) Assistant Professor in Management. BS, Florida State University, 1974; MS, University of North Texas, 1994; PhD, 1998.

Montgomery, Tyra L. (1994) Associate Professor of Chemistry. BS, Southwest Texas State University, 1982; MS, 1984; PhD, University of Houston, 1991.

Moosally, Michelle J. (1998) Assistant Professor of English. BS, Mankato State University, 1991; MA, University of Texas at Austin, 1994; PhD, 1998.

Morano, Lisa D. (2001) Assistant Professor of Biology and Microbiology. BS, University of California, Irvine, 1990; Ph.D., University of California, Davis, 1995.

Morris-Smith, Penny (1988) Assistant Professor of Biology and Geology. BS, California State University, 1964; MA, San Francisco State University, 1972; PhD, University of California, Berkley, 1975.

Mosier, M. Patricia (1982) Associate Professor of Spanish. BA, West Virginia University, 1970; MA, University of Wisconsin, 1972; PhD, 1979.

Mrak, Norma A. (2000) Assistant Professor of Spanish. BS, University of Houston, 1984; MA, 1996; PhD, 2000.

Mullinnix, Debra (1998) Assistant Professor of Education. BS, Texas A&M, 1976; MEd, University of Houston; EdD, 1997.

Nadler-Blumberg, Bonnie (1994) Lecturer in Mathematical Sciences. BS, University of Texas at Austin, 1983; MEd, University of Texas at El Paso, 1987.

Nakamura, Mitsue (1988) Lecturer in Mathematical Sciences. BS, University of Houston, 1985; MS, 1987.

Nandagopal, N. S. (1981) Associate Professor of Engineering Technology. BS, University of Mysore, 1978; MS, University of California at Santa Barbara, 1980.

Nazemzadeh, Asghar (1989) Professor of Economics. BA, Pahlavi University, 1972; MA, University of Houston, 1978; PhD, Florida State University, 1983.

Nelson, Ann D. (2000) Instructor of English. BA, University of Texas at Austin, 1981; MA, University of Texas/Pan American, 1986.

Newsum, Floyd Elbert, Jr. (1976) Professor of Art. BFA, Memphis Academy of Arts, 1973; MFA, Tyler School of Arts, Temple University, 1975.

Nguyen, Vien (1990) Lecturer in Mathematical Sciences. BS, Lamar University, 1988; MS, 1990.

Oberhoff, Kenneth E. (1974) Associate Professor of Mathematical Sciences. BA, Texas A&M University, 1965; MS, University of Houston, 1968; PhD, 1973.

Omer, Khursheed (1991) Associate Professor of Accounting. B. Com., University of Karachi, 1962; MBA 1964; MBA, University of Southern California, 1965; DBA, Memphis State University, 1990; CPA.

O'Neil, Rory M. (1988) Associate Professor of Biology. BS, University of Texas at Austin, 1978; MA, 1979; PhD, 1985.

Padilla, Edwin (1994) Instructor in Spanish. BA, University of Puerto Rico, 1979; MA, University of Texas at El Paso, 1982.

Paige, Susan (2000) Lecturer in Education. University of St. Thomas, BA, 1974, University of Houston, MEd, 1982.

Parham, Mary Gomez (1985) Associate Professor of Spanish. BA, Dominican College, 1969; MA, New York University in Madrid, 1970; PhD, University of California at Los Angeles, 1979.

Pavletich, JoAnn (1995) Associate Professor of English. BA, Southeastern Louisiana University, 1988; MA, University of Texas at Austin, 1990; PhD, 1995.

Pelaez, Rolando (1986) Associate 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. MM, 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.

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.

Read, Lisa (1998) Instructor of English. BS, Texas A&M, 1979; MEd, Prairie View A&M, 1988.

Rebhun, Herbert F. (1977) Professor of Computer Information Systems. BBA, University of Pittsburgh, 1955; ML, 1956; PhD, Florida State University, 1974.

Rizzo, Sergio (1995) Associate Professor of English. BA, University of California at Berkeley, 1986; MA, University of California at Riverside, 1988; PhD, 1993.

Robbins, Ruth R. (1980) Associate 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, Texas A&M University, 1988; MBA, University of Houston, 1990.

Roubicek, Henry L. (1983) Professor of Speech Communication. 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, Ph.D.,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) Instructor of English. BA, Carnegie-Mellon University, 1983; MA, State University of New York at Buffalo, 1990.

Serrett,Randy K.(1999) Assistant Professor of Accounting, BS, Louisiana State University, 1973; MS, University of Houston, 1983; Ph.D., University of Houston, 1986**;** CPA.

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 Speech Communication. BA, University of North Carolina, 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.

Shipley, 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) Assistant Professor of Mathematical Sciences, MS, Sofia State University, 1992; PhD, University of South Florida, 1997.

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) Assistant Professor Biology and Chemistry. BS, Stephen F. Austin State University, 1982; MEd, Sam Houston State Universityi, 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. BS, University of Houston, 1986;University of Houston-Clear Lake, MA, 1988.

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, 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; LLM, University of Houston, 1991.

Stanberry, Kurt (1996) Associate Professor of Business Law. BBA, Yale University, 1972; MBA, Temple University, 1974; JD, University of Houston, 1977.

Strain, Charles R. (1995) Associate Professor of Marketing. BBA, University of Mississippi, 1974; MBA University of Southern Mississippi, 1982; DBA, Mississippi State University, 1994.

Sullivan, M. Nell (1996) Associate Professor of English. BA, Vanderbilt University, 1986; MA, Rice University, 1989; PhD, 1995.

Taylor, Felicia (2000) Instructor of Education. BS, University of Florida, 1987; MEd, 1988.

Thacker-Kumar, Leena (1993) Associate Professor of Political Science. MA, Miami University (Ohio), 1988; PhD, 1993.

Tharp, Douglas (1976) Assistant Professor of Mathematical Sciences. BA, Rice University, 1960; MST, Rutgers University, 1969; MS, East Texas State University, 1986.

Thielemann, Jane (1991) Assistant Professor of Education. BS, University of Houston-Clear Lake, 1978; MA, University of Houston, 1991.

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.

Turner, Elizabeth Hayes (1991) Associate Professor of History. BA, University of Redlands, 1967; MA, East Texas State University, 1969; PhD, Rice University, 1990.

Turski, Jacek (1990) Associate Professor of Mathematical Sciences. BS University of Warsaw, Poland, 1976; MS, McGill University, 1982; PhD, 1986.

Uzman, Akif J. (1997) Assistant Professor of Biochemistry and Biology. BS, University of Michigan, 1975; MS, 1976; PhD, University of California-Berkley, 1983.

Vaden-Goad, Linda (1990) Associate Professor of Psychology. BS, University of Houston, 1975; MA, 1987; PhD, 1990.

Van Horn, Leigh (2000) Assistant Professor of Education. University of Houston, PhD, 2000; BS, 1992; University of Houston-Clear Lake, MS, 1995.

Vobach, Carol (1969) Associate Professor of Mathematical Sciences. BA, Marymount College, 1962; MA, University of North Carolina, 1965; EdD, University of Houston, 1984.

Wadhwa, Darshan L. (1984) Professor of Accounting. BS, KGK College, Moradabad, India, 1964; MS, Roorkee University, Roorkees, India, 1967; MBA, Louisiana Tech University, 1972; DBA, 1988; CPA.

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.

Wanguri, Deloris McGee (1984) Associate Professor of Speech Communication. 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, Universiity of Houston, 1983; PhD, 1985.

Westerfelhaus, Robert (1999) Assistant Professor of Speech Communication. BA, Ohio Dominican College, 1994: MA, Ohio University, 1996, PhD, 1999.

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, John U. (1989) Associate Professor of History. BS, Northern Illinois University, 1967; MA, 1969; EdD, 1978.

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 Urban Education. BA, Louisiana Tech University, 1975; Med, Louisiana State University, 1988; EdD, Oklahoma State University, 1992.

Xie, Shishen (1990) Associate Professor of Mathematical Sciences. BS, East China Normal University, China, 1982; MS, Texas Tech University, 1987; PhD, 1990.

Yoon, Jeong-Mi (1999) Assistant Professor of Mathematical Sciences, BS, Seoul National University, 1981; BS, Seoul National University, 1984' MS, Seoul National University, 1986; MS, University of California, 1991; PhD, University of California, 1999.

Zafiris, Vasilis (1999) Assistant Professor of Mathematical Sciences, BS, Mississippi State, 1984; MS, Mississippi State, 1987; PhD, University of Houston, 1996.

Ziemer, Heidi E. (1999) Assistant Professor of Psychology. BA, California State University, Long Beach, 1991; MA, Rice University, 1998; PhD, 1999.

156

Professors Emeriti

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.

James, L. Frank, Associate Professor of Psychology Emeritus (Deceased).

Levy, Sylvia S. (1958) Associate Professor Emerita of English and Philosophy.

McNeill, I. Eugene (1984) Professor Emeritus of Accounting.

Miller, Jon, Associate Professor Emeritus of English (Deceased).

Price, Frank E. (1964) Assistant Professor Emeritus of Biology.

Robinson, W. Clyde (1982) Associate Professor Emeritus of Business Law.

Rooney, Walter (1976) Associate Professor Emeritus of Management.

Scalamogna, Don, Associate Professor Emeritus of Business. (Deceased).

Sherman, Ruth (1975) Professor Emerita of Biology.

Small, Jo Ann (1975) Associate Professor Emerita of Psychology.

Suits, Marvin, Assistant Professor Emeritus of Business and Commerce (Deceased).

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.

Wathen, L. James (1962) Assistant Professor Emeritus of Arts and Humanities.

Wilkinson, Edward S., Sr. (1969) Associate Professor Emeritus of Purchasing.

Williams, Raymond J. (1963) Assistant Professor Emeritus of History.

Wood, June P. (1960) Professor Emerita of Mathematics.

Wright, Ray G. (1966) Professor Emeritus of Philosophy.

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

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

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 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 Chenyi Hu, Computer and Mathematical Sciences
2000	James McCaffrey, Social Sciences Khursheed Omer, Finance, Accounting and Computer Information Systems
2001	Lorenzo Thomas, English