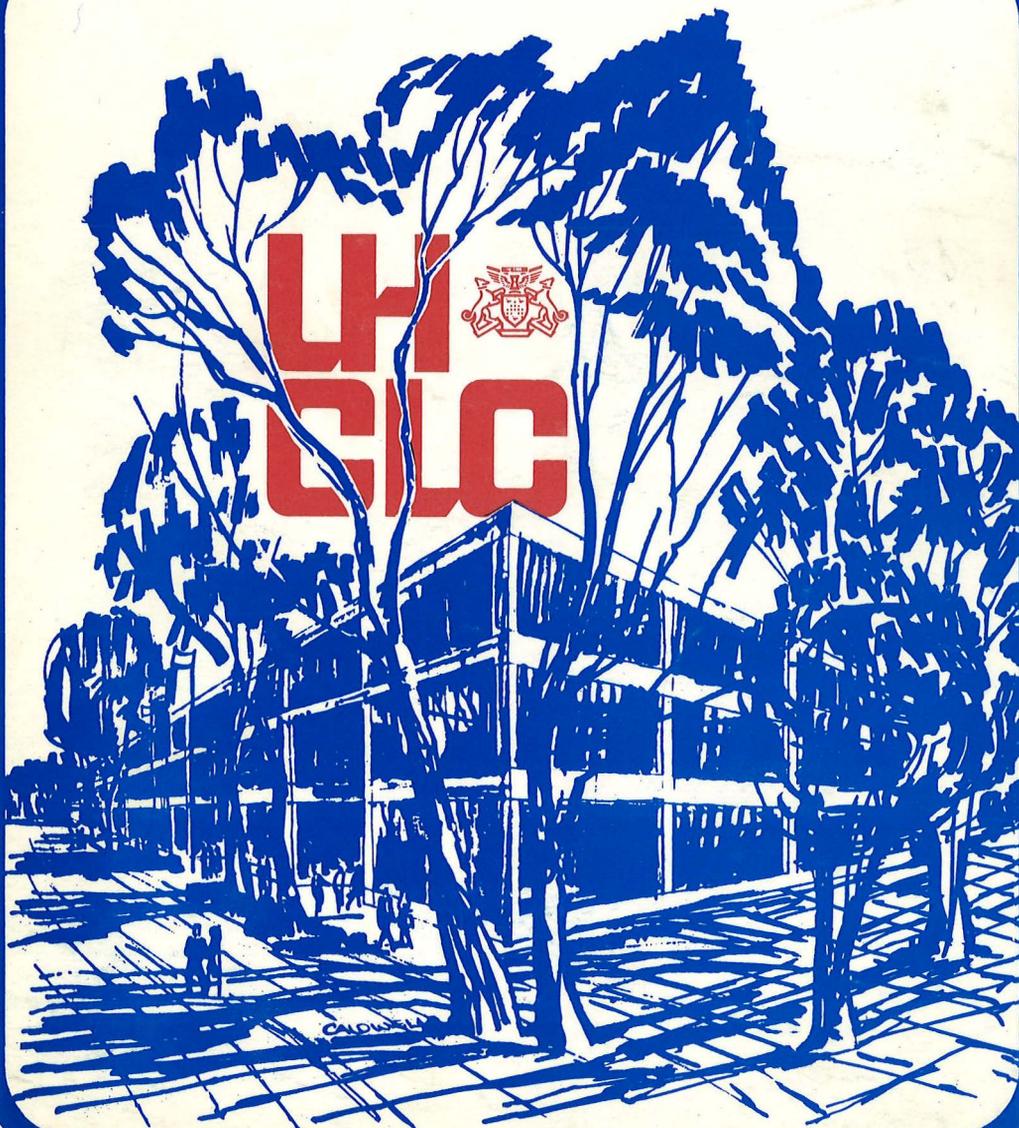


*University of Houston  
at Clear Lake City*

**BULLETIN**

1976-77







**University of Houston  
at Clear Lake City**

*Information concerning the administration, organization, admissions and graduation requirements, and courses of instruction for the 1976-77 academic year.*

# **BULLETIN**

**Volume 3 — April 1976 — Number 2**

Published quarterly in January, April, July, and October.

Bulletin of the  
University of Houston at Clear Lake City  
2700 Bay Area Boulevard  
Houston, Texas 77058

Application to mail at second class postage rates is pending at Houston, Texas.

*The University of Houston at Clear Lake City actively subscribes to the provisions of Title VI of the Civil Rights Act of 1964 and any other legislation intended to protect the equality of citizens' rights and privileges. It is the philosophy and practice of UH/CLC to provide equal educational and employment opportunities for all, irrespective of sex, race, creed, color, or national origin.*



*PRESIDENT PHILIP G. HOFFMAN addresses the gathering for the flag raising ceremony of the Bayou Building, September 9, 1975. Other speakers, l. to r., Chancellor Alfred R. Neumann, and Don Kirk, Clear Lake Chamber of Commerce.*

*While the nation looks to its history in this Bicentennial year, the University of Houston at Clear Lake City looks ahead to its third year of operation, well housed in its splendid Bayou Building, staffed by an enthusiastic faculty and support personnel, serving an ever-growing body of highly motivated students, all interacting in the common labor of creating a new institution.*

*At a time when much of higher education in the United States is trying to find new ways to cope with the steady state, Clear Lake's call for new approaches to new students is being widely heeded. Although the dream of education on a one-to-one basis cannot be realized in a mass situation, every effort is made here to personalize and individualize as much of the learning process as possible. We invite the new student to enter our building, huge in dimensions but intimate in feeling. We ask him or her to meet faculty and staff who are selected for their human qualities as well as their expertise in science, technology, business, education, or the liberal arts. Each student here, with all of his or her human strengths and weaknesses, is valued by a group of men and women who are part of this institution because this is where they want to be.*

*This past year has seen our enrollment double last year's, a feat that will probably not be repeated. More important, student and faculty are staying with the new enterprise. A prospective faculty member, accepting an appointment with us, writes that she is leaving an interesting position to come to UH/CLC because our faculty and students are such enthusiastic ambassadors for a mature, innovative institution.*

*I hope we can justify her trust and yours. We don't want innovation for the sake of innovation, and we know that what is new here has all been tried somewhere before, but we do feel there is something unique in our combination of intellectual creativity, career preparation, and stimulating interchange.*

*Come visit our campus and meet the people with whom you might want to study. Consider Clear Lake, and share our pride.*

Alfred R. Neumann  
Chancellor

# University of Houston

## BOARD OF REGENTS

### *Officers*

A. J. Farfel, Chairman  
J. A. Elkins, Jr., Vice Chairman  
Mrs. Gus S. Wortham, Secretary  
Leonard Rauch, Assistant Secretary

### *Members*

#### Terms Expiring August 31, 1979

A. J. Farfel . . . . . Houston  
Mack H. Hannah, Jr. . . . . Houston  
Mrs. Gus S. Wortham . . . . . Houston

#### Terms Expiring August 31, 1977

J. Davis Armistead . . . . . Lubbock  
J. A. Elkins, Jr. . . . . Houston  
Robert L. Grainger . . . . . Houston

#### Terms Expiring August 31, 1981

Willie C. Wells . . . . . Houston  
Travis C. Johnson . . . . . El Paso  
Leonard Rauch . . . . . Houston

## PRESIDENT

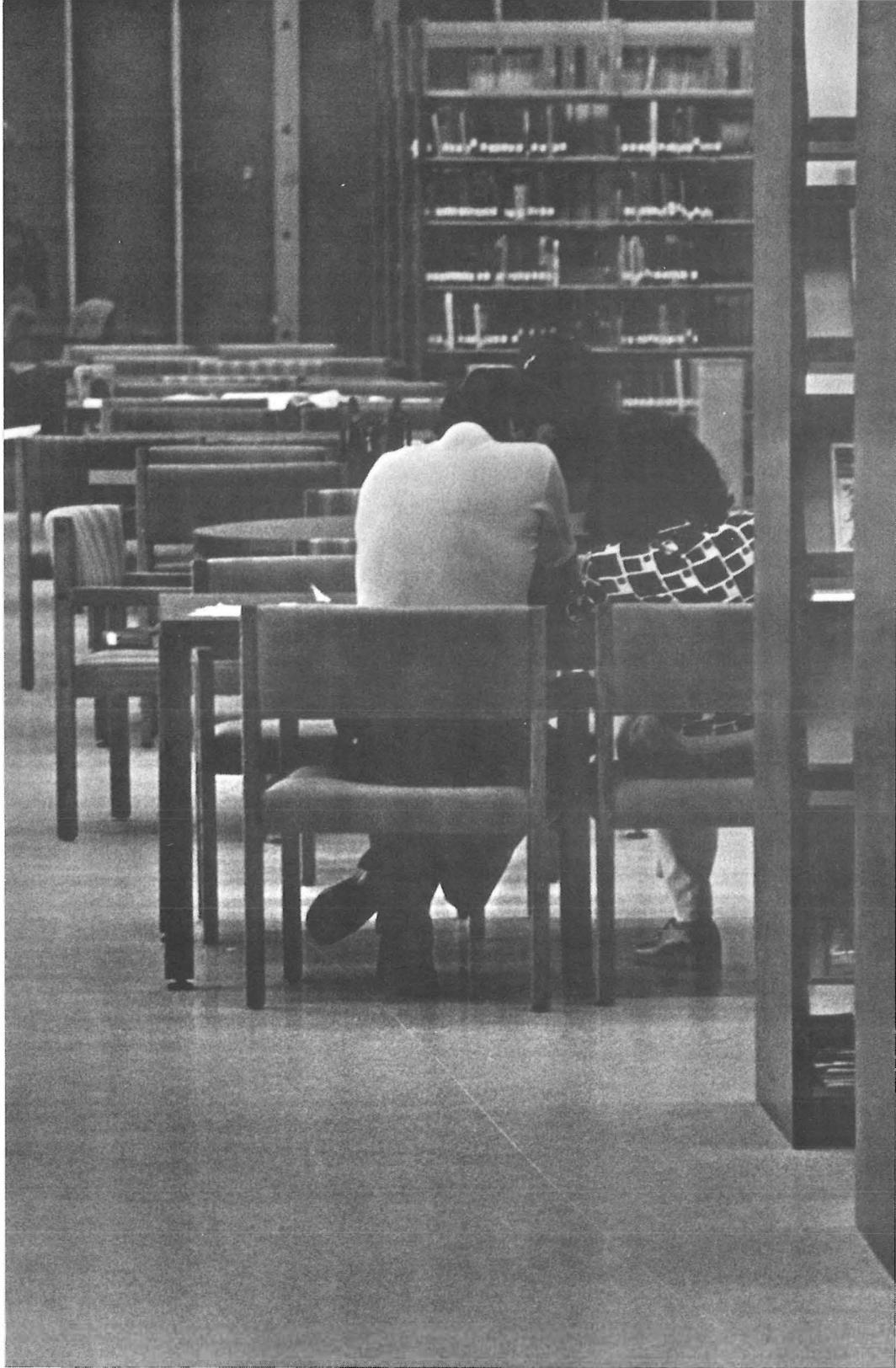
Philip G. Hoffman, Ph.D., HH.D., LL.D., L.H.D.

## CHANCELLOR, UNIVERSITY OF HOUSTON AT CLEAR LAKE CITY

Alfred R. Neumann, Ph.D., LL.D.

## TABLE OF CONTENTS

<b>General Information</b> . . . . .	1
History and Future . . . . .	1
Purpose and Philosophy . . . . .	1
Degrees Offered 1976-77 . . . . .	3
Library Resources . . . . .	4
Accreditation . . . . .	4
American Council on Education . . . . .	4
Student Services and Activities . . . . .	4
<b>Glossary of Terms</b> . . . . .	5
<b>Admissions, Advisement, and Registration</b> . . . . .	9
Requirements for Matriculation . . . . .	9
Transfer of Credit . . . . .	13
Advanced Placement Credit . . . . .	14
Prerogatives of Matriculated Status . . . . .	14
Registration . . . . .	14
<b>Financial Information</b> . . . . .	17
Tuition and Fees . . . . .	17
Schedule of Charges . . . . .	17
Refunds . . . . .	19
Student Financial Assistance . . . . .	20
<b>Academic Policies</b> . . . . .	23
<b>Degree Requirements</b> . . . . .	29
<b>School of Human Sciences and Humanities</b> . . . . .	35
Programs in Human Sciences . . . . .	35
Programs in Humanities . . . . .	39
<b>School of Professional Studies</b> . . . . .	45
Programs in Business and Industry . . . . .	45
Programs in Professional Education . . . . .	51
Programs in Public Affairs . . . . .	63
<b>School of Sciences and Technologies</b> . . . . .	71
Programs in Science for Society . . . . .	71
Programs in Technologies . . . . .	79
<b>Roster of Courses</b> . . . . .	91
<b>Faculty Roster</b> . . . . .	195
<b>Appendices</b> . . . . .	201
<b>Directory for Correspondence</b> . . . . .	211
<b>Index</b> . . . . .	213



# General Information

## HISTORY AND FUTURE

The University of Houston at Clear Lake City was authorized in 1971 by House Bill 199 of the 62nd Legislature of the State of Texas. This Authorization arose from a 1968 report of the Coordinating Board, Texas Colleges and Universities, calling for the creation of a second campus of the University of Houston to offer upper-level and graduate curricula to commuting students within the Houston metropolitan area. The legislative act is reproduced in the Appendix of this catalogue.

An operationally distinct institution of higher education, UH/CLC is governed by the Board of Regents and the President of the University of Houston. Administrative responsibility is vested in a Chancellor, who has the benefit of advice from a statutory advisory council composed of the president, or his designated representative, of each public community college in an eight-county region.

In 1973, Senate Bill 2 was passed by the 63rd Legislature, authorizing the sale of \$40,000,000 in tuition revenue bonds for the construction of a permanent campus of UH/CLC. The first phase of construction commenced in early 1974, with part one of the first phase of the Bayou Building completed in August, 1975. The second portion of the structure is scheduled to be completed in the summer of 1976. The campus is located on a tract of 487 acres donated by the Friendswood Development Corporation, adjacent to the NASA Lyndon B. Johnson Space Center and the Armand Bayou Preservation Project, in the center of a population of approximately 550,000.

UH/CLC began offering a regular schedule of classes in September, 1974, to an opening day enrollment of 1,096. Classes were held in the Arbor Building on Bay Area Boulevard, and administration and faculty were officed at the Vanguard Building on Gemini Avenue. Additional classroom space was acquired in the Atlas Building on Buccaneer, and when the spring semester of 1975 opened, UH/CLC was able to accommodate 1,355 registrants.

By the fall of 1975, enrollment at UH/CLC doubled. With partial completion and occupancy of the Bayou Building occurring in late August, the University was able to initiate its full-scale academic programming and enrolled 2,632 students during its second year of operation. Registration for the Spring 1976 semester reached 2,875. The UH/CLC master plan anticipates accommodating 15,000 students eventually.

## PURPOSE AND PHILOSOPHY

The University of Houston at Clear Lake City is an upper-level and graduate institution whose fundamental charge is to extend the educational opportunities of students who have completed two or more years of college; to provide non-traditional curricula in response to the needs of contemporary society; and to meet the continuing and often specialized educational needs of the unique population of the Bay Area-Gulf Coast region of Texas. By statute, UH/CLC is intended to complement the two-year community colleges within an eight-county area and thereby to assume the role of a "community university" for commuting students.

Believing that the common concern of all higher education is how best to approach the complexities of value formation and critical thinking while simultaneously serving as surveyors of practical knowledge, and convinced that the answer lies through intellectual exposure to interwoven clusters of knowledge rather than to academic disciplines in isolation, UH/CLC has dedicated itself to the concept of integrated studies and has predicated on this dedication its entire organizational structure. Its three Schools—Human Sciences and Humanities; Professional Studies; Sciences and Technologies—contain clusters

of closely-related programs, and the organizational propinquity of programs is based on similarities of students' educational and career objectives rather than on traditional or arbitrary patterns of departmentalization.

Programmatic organization is indicative of the philosophy that a modern university must be a dynamic, multifaceted, living organism capable of continuous exchange with and adaptation to its environment; must equate its own condition with the general human condition; must be both leader and follower, both cause and effect; must not shrink from joining the battle against human obsolescence. If intellectual flexibility and versatility are the keys to survival in the modern age, then a university's primary obligation is to be a catalyst to creative thought and to infuse such thought with human values. Programmatic organization, in facilitating interdisciplinary and cross-disciplinary approaches to education, is thus aimed at the reconciliation of diversity with expertise, a challenge requiring a collective courage of considerable magnitude.

That the abstractions of purpose must somehow be reduced to the concreteness of directed activities should be no more insurmountable an obstacle to an imaginative university than to the thousands of scholars who will eventually pass through its doors. Education is itself the process of analyzing the insurmountable into its surmountable components and resynthesizing the results into fundamental abilities to reason, to select avenues for further growth, and to contribute to the preservation of humanity. The University of Houston at Clear Lake City, while recognizing the traditional trichotomy of instruction, research, and service, prefers to view its educational method as the amalgamation and collaboration of resources in whatever patterns are appropriate to assisting each student, as an individual, in his progress towards a life goal. Consequently, it is not only the individualization of student programs of study that must be achieved, but also the individualization of faculty roles and of the means by which library resources, physical resources, and staff resources are applied in support of those roles.

The University of Houston at Clear Lake City places paramount emphasis on excellent teaching, with the understanding that successful teaching is not merely an imparting of held knowledge but is a helping to learn; that productive stimuli are rooted in humane as well as expert methods; that the role of research in this institution is to be an integral part of the teaching process rather than an independent privilege accompanying professorial status; and that the byproducts of excellent teaching are the substance of public service.

As a reflection of the integration of the disciplines and of emphasis on free intellectual interchange, UH/CLC appoints its faculty on an at-large basis; their individual competencies and talents are available as resources to be tapped by whatever programs may benefit therefrom, and their obligation as human beings is to advise and to converse with students in whatever forum presents itself. UH/CLC is conceived as a community of scholars in a very real sense: people of varying levels of intellectual attainment who, regardless of their designation as faculty or students, affect one another intellectually and humanly, and thereby effect growth in themselves, in the University, and in the greater society. The facilities of the University are dedicated to motivating both faculty and students to make of their academic lives something more than a series of reactions to chance encounters; UH/CLC thus becomes an environment for mutual enrichment, for selecting the significant from wisdom old and new, and for shared achievement and social contribution.

The University of Houston at Clear Lake City is authorized to award bachelor's and master's degrees of considerable diversity, representing the culmination of many curricular pathways. However, the degrees it confers on its graduates are intended not merely to symbolize a student's success in constructively availing himself of the University's instructional services for a designated period of time, but also to testify that the graduate has been a contributing participant in a project of shared intellectual development; that the University itself has been enriched by his individual presence; that he becomes not only an alumnus of an institution but a permanent extension of its intellectual community.

## DEGREES OFFERED 1976-77

The following programs have been authorized by the Coordinating Board, Texas College and University System. Those marked by a dagger may not be fully implemented until 1977, but the remainder are open to applicants for the fall term of 1976.

Accounting (BS,MS)  
 Administration of Health Services (BS, MS)  
 Allied Health Sciences (BA, BS)  
 Applied Design and Visual Arts (BA)  
 Avionics Instrumentation (BS,MS)  
 Behavioral Sciences (BA, MA)  
 Biological Sciences (BA,BS, MS)  
 Business and Industrial Management (BBA, MBA)  
 Computer Applications to Industrial Processes (BS, MS)  
 Development and Utilization of Human Resources (BA, BS, MA)  
 Economics (BS, MS)  
 Educational Management (MS)  
 Education-Related Sciences (MS)  
 Electro-Optical Technology (BS, MS)  
 Environmental Management (BA, BS, MS)  
 Finance (BS, MS)  
 Government Planning and the Political Process (BA, MA)  
 Health, Leisure, and Sports (BS)  
 Historical Studies (BA, MA)  
 Humanities (BA, MA)  
 † Industrial Leadership and Planning (BS, MS)  
 † Information Systems and Retrieval (BA, MS, MA)  
 Law and the Citizen (BS)  
 † Linguistics (BA)  
 Literature (BA, MA)  
 Mathematical Sciences (BA, BS, MS)  
 Modern Languages (BA)  
 † Modern Languages (MA)  
 † Multi-Cultural Studies (BA, MA)  
 Oceanographic Instrumentation (BS, MS)  
 Physical Sciences (BA, BS, MS)  
 Process Monitoring and Control (BS, MS)  
 † Recreational Arts (BA)  
 Resource Utilization (BA, BS)  
 Studies of the Future (MS)  
 Teaching: College (MA, MS)  
 Teaching: Middle through High School (MA, MS)  
 Teaching: Preschool and Elementary (BS, MS)  
 Theatre Arts (BA)  
 Transportation (BA, BS, MS)  
 Urban and Suburban Studies (MA)

### Bachelor of General Studies Program

The Bachelor of General Studies degree (BGS) is intended to be an effective way of organizing multidisciplinary course selection for the purposes of personal enrichment rather than as a foundation for graduate study. BGS programs are under the supervision of the Deans. Students interested in the BGS program should consult the Office of Academic Appraisal and Advisement for further details.

## LIBRARY RESOURCES

The University of Houston at Clear Lake City accepts the premise that library resources are a significant measure of the university's scope and quality, and that library facilities, themselves, should represent the best the institution can offer to its constituents. The UH/CLC Library occupies approximately 100,000 square feet on the second and third floors of the Bayou Building. The library collection contains approximately 253,000 cataloged books and periodicals, 39,000 reels of microfilm, and 395,000 pieces of microfiche or the total equivalent of 371,000 volumes. The library currently subscribes to 2,550 separate titles of periodicals, newspapers, serials and scholarly journals.

An open shelf arrangement is utilized whereby books and study areas are interspersed throughout the library. Smoking lounges are located on both floors and conference rooms are available for group study and small meetings.

Students have access to microform readers, reproduction facilities, typing facilities, and other services designed for the convenience of a commuting student body. Student and faculty may also avail themselves of the resources of other libraries within the University of Houston system.

## ACCREDITATION

The University of Houston at Clear Lake City is a Candidate for Accreditation by the Southern Association of Colleges and Schools. This status is given new institutions as an indication of affiliation with the Commission on Colleges and as recognition by the Association as making progress towards full accreditation status. As a Candidate for Accreditation, UH/CLC is included in the Annual Membership List of the Commission and in the Directory of the Federation of Regional Accrediting Commissions of Higher Education.

Students are assured that credits earned at UH/CLC while the institution has Candidate for Accreditation status will be recognized by other institutions on the same basis as those earned at institutions with full accreditation status.

## AMERICAN COUNCIL ON EDUCATION

The University of Houston is an Institutional Affiliate of the American Council on Education.

## STUDENT SERVICES AND ACTIVITIES

Student Services is a developing segment of the University which provides students the various services designed to best supplement their educational programs. At this point, Student Services includes Student Activities, the University Health Service, and a Counseling Center in the Office of Academic Appraisal and Advisement.

The Office of Student Activities recognizes the importance of organized student programs as part of the educational process of the University. Information concerning the Student Affairs Council, student organizations, programming committees, the student newspaper and various resources are available in this office. Students are encouraged to visit the Coordinator of Student Activities with any ideas in these areas or if they are interested in participating in program planning for the University.

General student information, including available student housing in the Clear Lake Area and student insurance programs, may be obtained in the Student Activities office.

### Housing

No student housing facilities are owned or operated by UH/CLC. Each student must make individual arrangements for suitable living quarters, which are available within a few minutes of the campus. Information and assistance may be obtained from the Coordinator of Student Activities.

---

# Glossary of Terms

---

- Academic Year.** That period of time extending from the opening of a fall semester to the closing of the succeeding spring semester; often referred to as the “nine-month academic year,” specifically excluding the summer session.
- Activity Courses.** Courses not generally considered to be academic in substance, such as physical education activities required at the lower level; band or chorus activities not qualifying as substantive courses in music; ROTC/military science courses that constitute military training activity rather than academic work; orientation courses that may carry credits but are not commonly considered applicable to degree programs.
- Advisement.** Any service provided by the Office of Appraisal and Advisement, a faculty advisor, or a general counselor; specifically, the process by which a matriculated student obtains an appropriate permit to register.
- Cancellation.** During the registration period, but before the first class day, a student who has registered and paid his fees may effect the cancellation of his registration by so informing the Registrar. Such students are entitled to 100% refund of tuition and fees.
- Candidacy.** An agreement between a student and the University formalized in a Candidate Plan of Studies, whereby the University commits itself to award the student a specific degree when the student has fulfilled all requirements prescribed in his Candidate Plan of Studies as well as the University’s general requirements for the degree. The agreement is invalidated if the student fails to preserve his candidate status.
- Class Schedule.** The list of courses and sections offered in a given term, together with the days, hours, and places of meeting and names of instructors.
- Concentration, Area of.** Those courses prescribed in a Candidate Plan of Studies which reflect the student’s primary academic interests. The term area of concentration also refers to one of the designated curricula leading to a degree which the University has been authorized to confer.
- Corequisite.** A course in which one is required to be enrolled concurrently with enrollment in a specific course.
- Course.** A module or unit of academic work in a particular subject, normally of one term’s duration, in terms of which a student’s performance is evaluated.
- Course Load.** The number of semester credit hours associated with the academic work in which a student is enrolled in any given term.
- Credit.** Certification given for successful completion of academic work.
- Dismissal.** Action resulting in the termination of a student’s eligibility to register for courses at the University; terminating a student’s matriculated status and rendering him ineligible for readmission without due process.

**Encumbrance.** A student's record may be encumbered and permission to register for courses may be denied when he becomes delinquent in meeting any University obligations. Encumbrances may be authorized through the Office of Admissions, Business Office, Office of Financial Assistance, or the Library. It is the student's responsibility to see that the conditions of his encumbrance are met and that the encumbrance has been removed by the issuing office.

**Faculty Advisor.** A faculty member who provides a candidate or provisional candidate the advisement necessary for the formulation and pursuit of his plan of studies.

**Full-time Student.** During a long semester, any undergraduate student registered for 12 or more semester credit hours, or any graduate student registered for 9 or more semester credit hours; during a summer session, any student registered for 6 or more semester credit hours, irrespective of classification. This definition is for administrative reporting purposes and does not imply any standard course load for individual students.

**Graduate Council.** The Graduate Council determines policy for graduate studies and monitors graduate degree programs and requirements. Its members are: the Vice Chancellor and Provost (chairman), Deans of the schools, and a faculty member from each school.

**Graduate Student.** A student who has earned a bachelor's degree, has been accepted for matriculation as a graduate student, and who is enrolled, in any given term, for at least one course of the 5000 or 6000 series.

**Laboratory.** A course involving supervised experimentation or practice related to academic work in a particular subject; laboratories generally involve the use of equipment and materials and are usually corequisites of other courses.

**Letter of Standing.** Upon written request from the student, the Registrar will issue to another institution or agency a Letter of Standing: an official document indicating the student's current standing at UH/CLC in addition to a list of courses in progress.

**Lower-Level Course.** Any course offered by a college or university and classified as freshman or sophomore level.

**Matriculation.** Acceptance by the University for the purpose of enrolling in courses for academic credit. Matriculated status is prerequisite to permission to register and to applying for degree candidacy. Unless terminated by the student or the University, matriculated status entails continuing eligibility to register.

**Parent Institution.** That institution at which a student is pursuing a degree. Students whose parent institution is UH/CLC are transients while temporarily enrolled at other institutions; students classified as transients while enrolled at UH/CLC are assumed to be returning to a parent institution.

**Permanent Record.** A cumulative and sequential account of a student's academic work (completed and/or attempted) including the associated marks, academic standing, changes of status, actions taken, honors bestowed, and degree(s) conferred.

**Prerequisite.** A course to be completed successfully or a condition to be met before one is eligible to enroll in a specific course.

**Readmission.** The process by which a student applies for admission to UH/CLC after matriculated status has lapsed because of dismissal or because of failure to maintain required academic standards.

**Reentry.** The process by which a student applies for admission to UH/CLC after his matriculated status has lapsed due to (1) the completion of all requirements for a degree, (2) voluntary interruption of the student's enrollment for one or more semesters (including all cancellations), or (3) failure to register for classes following original acceptance for matriculation.

**Registration.** The process by which a matriculated student is actually enrolled in classes and assessed tuition and fees at the beginning of any term.

**School.** One of three major programmatic divisions of the University of Houston at Clear Lake City; responsibility for a School's programs is vested in a dean.

**Semester.** An enrollment period (term) of fifteen to eighteen weeks' duration (e.g., fall semester or spring semester), the inclusive dates of which are shown in the Academic Calendar.

**Semester Credit Hours.** Units of academic credit awarded for the successful completion of academic work. Students' progress toward fulfilling curricular and degree requirements is customarily measured in terms of semester credit hours.

**Student Affairs Council.** The Council on Student Affairs is responsible for recommending--through the chief student affairs officer to the Chancellor of UH/CLC--the formulation of student affairs policies. Any proposed modification of student affairs policies not originating in the Council on Student Affairs will be referred to the Council for review. Requests for exceptions to student affairs policies will be made to the Council on Student Affairs. Copies of the Student Affairs Policies Manual are available in the Student Services office.

**Student Schedule.** For any given term, the list of classes for which an individual student is registered, together with their section numbers, hours and days of meeting, and places of instruction.

**Summer Session.** An enrollment period (term) of approximately nine weeks' duration, normally opening in early June and closing in early August.

**Term.** An enrollment period; a fall semester, spring semester, or summer session.

**Transcript.** An official copy of a student's permanent academic record.

**Undergraduate Student.** A matriculated student who has not earned a bachelor's degree or who has earned a bachelor's degree but is a candidate for an additional bachelor's degree.

**University Review Board.** The University Review Board is the body within the University responsible for hearing appeals relating to all academic matters within the University. All appeals for readmission into the University are directed to the University Review Board. The composition of the review board consists of the Vice Chancellor and Provost (chairman), the Deans of the three schools and a faculty member from each school. These seven members are voting members of the board. The Chief Student Personnel Office of the University serves in an ex officio (non-voting) capacity to the board.

**Upper-Level Course.** Any course offered by the University of Houston at Clear Lake City for academic credit; any course offered by an accredited college or university and classified as junior level or above.



# Admissions, Advisement, and Registration

## REQUIREMENTS FOR MATRICULATION

Favorable action on an application to UH/CLC depends on the satisfaction or requirements for matriculation. Matriculation is defined as permission to enroll in courses for academic credit. Matriculation in the university is prerequisite to but does not include admission to any degree candidacy.

### Undergraduate Students

Undergraduate applicants may be accepted for matriculation upon satisfying all of the following requirements:

1. Evidence of ability to do upper-level college work of satisfactory quality as demonstrated by
  - a) an associate degree from an accredited institution of higher education or
  - b) at least 54 semester hours of college credits, exclusive of activity courses, with grades of C or better, from accredited institutions of higher education.
2. Evidence of eligibility to return to the last institution attended.
3. Proof of immunizations against Tetanus and Diphtheria as required by the Texas Education Code, Section 2.09.

### Concurrent Enrollment Policy (Undergraduate Students)

Undergraduate students who, by the beginning of the term they wish to enter UH/CLC, have not earned the associate degree and have not accumulated at least 54 semester hours credit, exclusive of activity credit, may, on an individual approval basis, be approved for matriculation subject to the following conditions: -

1. The student must concurrently enroll for resident credit at an accredited institution other than UH/CLC for a sufficient number of credit hours so that by the conclusion of the semester of concurrent enrollment, the student will have accumulated at least 54 semester hours of "C" or better exclusive of any credit earned at UH/CLC.
2. The community or junior college student must have the permission of the chief academic officer of his/her institution.

Undergraduate students who wish to take freshman or sophomore level courses while attending the University of Houston at Clear Lake City are encouraged to enroll for such lower-division courses at one of the eight junior and community colleges within commuting range of the campus. Students should consult with their advisors before taking such courses to ascertain their suitability in their plan of study. UH/CLC encourages students to complete all requirements for the associate degree whenever possible.

### Graduate Students

Any applicant who has earned at least a bachelor's degree from an accredited college or university and who is eligible to return to the last institution attended may be accepted for matriculation as a graduate student, but such acceptance does not presuppose eligibility for admission to candidacy for a master's degree in any program. (Prospective students wishing

to pursue a master's degree should refer to the description of specific degree programs for explanations of other requirements.) Applicants must also submit proof of immunizations as required by State law (see above).

## Categories of Matriculation

Applicants for matriculation in the university are categorized on the first level as undergraduate or graduate and on the second level as undergraduate or graduate and on the second level as degree-seeking, (DS) non-degree-objective (NDO), or transient (t).

1. A degree-seeking applicant certifies his/her intention of applying for admission to a degree program immediately upon acceptance for matriculation.
2. A non-degree-objective applicant certifies that he/she wishes to take courses for reasons other than in pursuit of any degree, i.e., that he/she does not anticipate applying for admission to any degree program at any time in the future.
3. A transient applicant certifies his/her intention of taking a course or courses solely for the purpose of transfer to a parent institution and understands that his/her matriculated status will expire at the end of one term unless reestablished.

## Support Documentation

All applicants for matriculation—as undergraduates or graduates—must present documented evidence that they meet the appropriate requirements for matriculation as stated above. The type of documentation varies in accordance with the second level of categorization, as follows.

1. Degree-seeking applicants must furnish the Office of Admissions complete official transcripts from all collegiate institutions ever attended. Unofficial or "student's copy" transcripts are not acceptable. The transcripts must be requested by the applicant of the Registrar of each separate institution attended and must be mailed from the Registrar of each institution directly to the Office of Admissions, UH/CLC.

To assure timely processing of an application, transcripts should reach the Office of Admissions at least (30) days in advance of the beginning of the terms for which the applicant first intends to register. If extenuating circumstances delay the receipt of complete documentation, the applicant may request special dispensation from the Director of Admissions, be permitted to sign a temporary waiver agreement, and register for classes under the provision (1) that documentation will be completed as soon as possible and before the end of the term, and (2) that if the completed documentation indicates that requirements for matriculation were not in fact met, the student's matriculated status may be cancelled forthwith.

If an applicant is enrolled in another collegiate institution at the time application for matriculation is filed, he/she must arrange for the Registrar of that institution to submit a statement of courses in progress, to be followed by an official transcript at the end of the term.

If an applicant knowingly withholds the information that he/she has ever been enrolled at any other collegiate institution, the application for matriculation at UH/CLC may be disqualified.

2. Non-degree objective applicants must furnish the Office of Admissions a transcript indicating that the requirements for matriculation as an undergraduate or graduate student have been met, plus a statement of standing from the last institution attended. Graduate students need only submit a transcript showing the highest degree held. Undergraduate students must submit transcript(s) from previous institutions showing evidence of at least 54 semester hours of credit earned. Transcripts for non-degree-objective applications at UH/CLC do not have to be official, but may be copies of official transcripts. However, such copies must

be legible and not defaced. If the transcripts provided are unofficial, UH/CLC requires a statement of standing from the last institution attended. If the transcript submitted by the applicant is official, a statement of standing is not required. Note: For a transcript to be official it must be sent directly from the previous institution attended directly to the UH/CLC Admissions Office. (University requirements on transcripts and statement of standing from the last institution attended may be waived temporarily under extenuating circumstances, but in all instances must be met before the end of one term in order for the student to be granted official NDO status.) The applicant also must sign an NDO Matriculation Agreement in which it is declared that UH/CLC is under no obligation to recognize credits earned by an NDO student as applicable to any degree.

3. Transient applicants must submit the same documentation of eligibility as the NDO applicant (see 2 above) and must sign a Transient Matriculation Agreement in which it is declared that (1) credits earned are intended for transfer to a parent institution, (2) matriculated status will lapse at the end of one term unless reestablished, and (3) that UH/CLC is under no obligation to recognize credits earned by a transient student as applicable to any degree should the student later apply for matriculated status as a degree-seeking student.

## Changing Categories of Matriculated Status

### 1. Voluntary

A student may at any time file an Academic Record Change request form asking that his/her matriculated status be changed to a different category. If a degree-seeking student wishes to change to NDO status, no other procedure is necessary except the signing of an NDO Matriculation Agreement. A transient student may achieve NDO status by the same means.

If either an NDO or a transient student wishes to become a degree-seeking student, he/she must, in addition to the above, obtain all the official documentation required of a degree-seeking applicant (see Supporting Documentation above) and await its complete evaluation by the Office of Admissions before being granted DS status. It is understood that the student will at the same time apply to the appropriate office for admission to the degree program of his/her choice but that achieving DS status in no way presupposes admission to any degree program.

### 2. Administrative

Degree-seeking students will be changed to NDO status at the end of their first full semester of enrollment if a Candidate Plan of Studies has not be filed and approved. Degree-seeking students should not delay applying for admission to a specific degree candidacy lest their initial UH/CLC credits not be applicable to the desired degree. To avoid any such delay, DS applicants must insure that all supporting documents are promptly filed with the Office of Admissions.

## International Students

Applicants who are not citizens of the United States, and are in the United States on a student visa or visa other than one entitling them to immigrant status, should contact the Director of Admissions for additional information. International applicants should be aware that their applications cannot be completed and ruled on in the same amount of time as those of domestic students. All required matriculation credentials must be submitted at least 60 days prior to the beginning of the terms of desired entry. Also, if credit is to be transferred or recognized from institutions of higher education outside the United States, the time required for obtaining and evaluating the necessary documentation may be lengthy. International students may not be permitted to enroll nor may I-20's be issued on a conditional or probationary basis.

NOTE: International students are not eligible to apply for matriculation as non-degree-objective or transient students. International students must apply for degree-seeking status and for a specific degree candidacy.

## Notification of Action

As soon as the Application and all supporting materials have been received by the Office of Admissions, a determination is made regarding the applicant's eligibility for matriculated status. The Director of Admissions will notify the applicant of this determination as soon as possible.

If an applicant is rejected he will be informed of his right to petition the University Review Board for reconsideration of his application, based on the relevance of his previous scholastic performance to his educational objective at UH/CLC. However, the applicant should be able to judge the validity of his petition by reading the Requirements for Matriculation, which constitute University policy to which exception will not be made without substantial cause.

If an applicant is accepted he will receive information regarding additional procedures to be followed prior to registration.

## Reentry or Readmission (Former Students)

Former students are defined as those who have once held matriculated status and have been registered for classes at UH/CLC but have allowed their matriculated status to lapse. Students applying for admission after having once held matriculated status fall into two categories:

1. **Reentry Students:** Those students who have allowed matriculated status to lapse due to (a) having completed all requirements for a degree, (b) voluntary interruption of enrollment for one or more semesters (including all cancellations and withdrawals), or (c) failure to register for classes following original acceptance for matriculation.
2. **Readmission Students:** Candidates for readmission are those whose matriculated status has lapsed due to (a) dismissal in accordance with UH/CLC policies, or (b) cancellation of permission to register under the provisions of UH/CLC's Academic Standards.

Students applying for reentry or readmission must file an Application for Matriculation with the Office of Admissions at least thirty (30) days before the beginning of the term for which they wish to register. Former students who have been dismissed from UH/CLC for any reason are not eligible for readmission without due process.

If a former student has registered for courses at another institution(s) since he was enrolled at UH/CLC, he must submit complete official transcripts of all work attempted.

## Examinations for Graduate Candidacies

For admission to candidacy in certain programs scores on the Graduate Record examination for the Graduate Management Admission Test are required. Information on the GRE and applications for the tests may be obtained from the Office of Academic Appraisal and Advisement or Educational Testing Service, Box 1502, Berkeley, California 94701. For the GMAT, the address is Educational Testing Service, Princeton, New Jersey 08540. The institutional code number for UH/CLC is R6916 for the GMAT, and 6919-1 for the GRE.

## University Policy on Discretionary Authority

The University reserves the right, in every case, to reject any applicant whose records do not indicate potential success in the University environment, notwithstanding the completion of other requirements.

The University also reserves the right to examine further any applicant by the use of psychological, achievement, and/or aptitude tests and personal interviews.

## TRANSFER OF CREDIT

### Undergraduate

An upper-level institution such as UH/CLC is unlike all others in that every entering student has previously earned credits at another college or university and must therefore submit transcripts as part of the application process. Furthermore, "transfer" to an upper-level institution from any other college or university, at the undergraduate level, is not directly analogous to transfer, in the traditional sense, between four-year institutions. The principal reason is that UH/CLC does not teach freshman or sophomore courses and thus cannot equate lower-level courses of other institutions with courses at UH/CLC.

The important thing for an undergraduate degree-seeking applicant to understand is that UH/CLC does not in fact "equate" lower-level credits. Instead it does two things:

- (1) recognizes a specific number of lower-level credits as counting towards the total number of hours required for a bachelor's degree; and
- (2) evaluates the adequacy of certain courses as providing sufficient preparation for undertaking advanced study in a desired concentration.

It should be noted under the General Requirements for the Bachelor's Degree that "grades of A, B, or C must be earned for at least 54 hours of upper-level course work." Furthermore, whereas "at least 120 semester hours of applicable college credits" are required for the bachelor's degree, the requirements specific to a major area of concentration may result in a degree plan that exceeds that number.

In short, the undergraduate degree-seeking student should approach his career at UH/CLC not in terms of what he has done elsewhere but in terms of what remains to be done at UH/CLC. This is entirely a matter of satisfying (1) the General Requirements for the Bachelor's Degree and (2) the terms of an individually designed Candidate Plan of Studies within the context of the area of concentration.

The undergraduate applicant who has previously earned upper-level credits should be aware of the following university policy:

Upper-level credits earned more than seven (7) years prior to admission to undergraduate study at UH/CLC may not be counted towards fulfilling the required number of hours unless special dispensation is granted by the dean. It is the prerogative of the dean to determine (1) whether the courses for which such credits were earned are by current standards of the discipline in fact of upper-level substance, and (2) whether the student can demonstrate sufficient retention of the substance to apply it in the present.

### Graduate

Master's degree programs at UH/CLC require a minimum of 30 semester hours; in some instances they extend to 42 hours inclusive of Option 4. In all cases, at least the final 24 hours must be resident credits earned at UH/CLC, and university policy interprets this last requirement to be exclusive of hours earned under Option 4. Therefore, the possibility of transferring credit towards a master's degree is limited to no more than 12 hours and in most instances may not exceed 6.

Previously earned graduate credits are not necessarily applicable:

- (1) Only graduate courses in which grades of A or B were earned are eligible for evaluation;
- (2) it is the prerogative of the dean to determine whether the contents of such courses are pertinent to the degree objective;
- (3) courses completed more than five (5) years prior to admission to graduate study at UH/CLC may not be counted towards fulfilling the required number of hours unless special dispensation is granted by the appropriate dean; and
- (4) credits previously applied to a graduate degree already earned may not be counted towards any additional degree.

## ADVANCED PLACEMENT CREDIT

1. **Lower-Level Credit:** The Office of Admissions, in accordance with established policy, will evaluate the individual's transcript in regard to College Level Examination Program (CLEP) credit and recognize as legitimate lower-level credit any CLEP examinations for which another institution has awarded credit.
2. **Upper-Level Credit:** In accordance with established policy, students desiring to be awarded upper-level credit for College Level Examination Program (CLEP) examinations must submit official CLEP score reports to the Office of Academic Appraisal and Advisement. Upon receipt of such scores this office will evaluate them and forward to the student and Office of Admissions a copy of that evaluation to be posted on the student's UH/CLC permanent record as being CLEP credit awarded in terms of equivalent courses offered at UH/CLC.

## PREROGATIVES OF MATRICULATED STATUS

1. Degree-seeking students (i.e., provisional candidates and candidates) must select courses that comply with the provisions of their Candidate Plan of Studies. Degree-seeking students who have not yet filed an approved Candidate Plan of Studies as of their first term of enrollment are restricted to an approved course list prepared by their advisor.
2. Non-degree-objective students are free to register on a space-available basis for any course offered by the University as long as prerequisites have been met and the following provisions are observed:
  - a) undergraduate NDO students are restricted to courses at the 3000 or 4000 level;
  - b) graduate NDO students may take courses at any level, but in any given term at least one of their courses must be of the 5000 or 6000 level.
3. Transient students are requested to present a letter from the Registrar or an academic dean or advisor from their parent institution acknowledging the student's permission to pursue course work at UH/CLC intended for transfer to the parent institution. Such a letter should specify as clearly as possible the courses to be taken. In the absence of a transient permit letter from a parent institution, UH/CLC takes no responsibility for the suitability of the student's course selection. In all other regards, transient students are free to register on a space-available basis for any courses offered by the University, subject to the same provisions as those for NDO students (see above).

NOTE: Both non-degree-objective and transient students are subject to the University's academic standards and do not differ from degree-seeking students in regard to the requirements of any other University policies.

## REGISTRATION

Enrollment is necessary for every period of attendance at UH/CLC. The official days for registration are specified in the Academic Calendar in this catalogue. Registrar's announcements will specify times and places and give other instructions for completing the enrollment process. Registration materials and class schedules may also be obtained from the Registrar's Office.

Registration is not complete until the student's tuition and fees have been paid in full. Students who do not complete the process of registration within the officially designated period will be charged a non-refundable late registration fee and may be required to resection all courses. Questions regarding registration should be directed to the Registrar's Office.

## Auditing Courses (General)

Approval to audit a course can be granted to individuals who meet general UH/CLC admission requirements. Persons wishing to take a course on an audit basis need to sign a statement indicating that they meet the admission requirements of UH/CLC as stated in the University's catalogue. Additionally, they must obtain the approval of the Instructor in the particular course.

Application forms to audit a course may be obtained from the appropriate Dean's office. Registration to audit a course is on a space available basis; only after the conclusion of the regular registration period and the determination that there is space available will an audit individual be assigned to the particular course.

Auditing status provides only the privilege of class attendance and does not include taking of examinations, submission of papers, participation in laboratories, field work, or receipt of a grade in the course. State law provides that individuals auditing courses will pay the regular tuition and student services fee as well as other applicable fees indicated in this catalogue.

An individual with an audit status will not be given credit for the course, nor will the person be permitted to change from an audit to a credit status after the individual has registered on an audit basis. Records of the student having audited a course will not be maintained by the University.

## Auditing Courses (Senior Citizens)

Senior citizens, 65 years of age or over, may be permitted to audit, on a space available basis, any course offered by the University of Houston at Clear Lake City without payment of a fee (Section 54-210, Texas Education Code). Applicants need to provide UH/CLC with evidence of age. Other than for fees and age requirement, the general regulations and procedures applying to audit students also are applicable to senior citizens.

## Availability of Courses

The University cannot guarantee that courses listed in this catalogue will be offered in any given term or year. Registration for a particular section will be permitted only until available classroom space has been filled. UH/CLC also reserves the right to cancel any course or section for which enrollment is insufficient according to state policies.

## Class Membership

Membership in a class is achieved only as the result of proper registration or schedule revision procedures. The instructor receives the student's name by official notice from the Registrar and in no other way. A student will not receive credit for a course for which he is not registered.

## Late Registration

No student may register after the beginning of the term except under unusual circumstances, and then only with the approval of his advisor and the Registrar.

## Schedule Revision

Schedule revision (drop/adds) may be made during the first week of classes of a specific term. Times and dates will be announced by the Registrar.

## Cancellation of Registration

A student may cancel his registration and be entitled to a full refund if he follows the proper procedures through the Registrar's Office before the first class of the term. In such an instance, no entry will be made on the student's permanent record. The student may reenter the University only after filing an Application for Matriculation accompanied by transcripts from all colleges or universities attended after leaving UH/CLC.



# Financial Information

## TUITION AND FEES

The following Schedule of Charges and Special Fees shall apply, where applicable, to all students at UH/CLC. These tuition and fee charges are assessed according to the number of semester credit hours for which the student enrolls and are payable at the time of registration.

A student is not registered and is not entitled to University privileges until his tuition and fees have been paid in full. If payment is made by check or money order, such check or money order must be payable to the University of Houston at Clear Lake City.

The charges quoted are those authorized at the time of publication of this catalogue but are subject to change without notice as necessitated by University or legislative action.

### SCHEDULE OF CHARGES\*

Number of Hours	Tuition		Student F†	Student Service Fees	Medical†† Service Fee	Building Use Fee	Total		
	R	N/F					R	N/F	F
1	50	40	200	2.50	4	40	96.50	86.50	246.50
2	50	80	200	5.00	4	40	99.00	129.00	249.00
3	50	120	200	7.50	4	40	101.50	171.50	251.50
4	50	160	200	10.00	4	50	114.00	224.00	264.00
5	50	200	200	12.50	4	50	116.50	266.50	266.50
6	50	240	200	15.00	4	50	119.00	309.00	269.00
7	50	280	200	17.50	4	90	161.50	391.50	311.50
8	50	320	200	20.00	4	90	164.00	434.00	314.00
9	50	360	200	22.50	4	90	166.50	476.50	316.50
10	50	400	200	25.00	4	90	169.00	519.00	319.00
11	50	440	200	27.50	4	90	171.50	561.50	321.50
12	50	480	200	30.00	4	90	174.00	604.00	324.00
13	52	520	200	30.00	4	90	176.00	644.00	324.00
14	56	560	200	30.00	4	90	180.00	684.00	324.00
15	60	600	210	30.00	4	90	184.00	724.00	324.00
16	64	640	224	30.00	4	90	188.00	764.00	348.00
17	68	680	238	30.00	4	90	192.00	804.00	362.00
18	72	720	252	30.00	4	90	196.00	844.00	376.00
19	76	760	266	30.00	4	90	200.00	884.00	390.00
20	80	800	280	30.00	4	90	204.00	924.00	404.00
21	84	840	294	30.00	4	90	208.00	964.00	418.00
22	88	880	308	30.00	4	90	212.00	1004.00	432.00

CODE R — Texas residents; N — Nonresidents who are U.S. Citizens; F — Nonresidents who are citizens of another country.

\*The University may change tuition rates and other charges without notice, when so directed by the Board of Regents.

N/F — Tuition for students who are citizens of any country other than the U.S.A. is the same as that required of other nonresident students when entering a Texas public college or university for the first time after June 19, 1975.

F† — Tuition rates for foreign citizens who entered a Texas public college or university before June 19, 1975, may qualify under other provisions of Section 54, Texas Education Code.

†† — The Medical Service Fee, as authorized by state law and approved by the Board of Regents, is required of all students and is pledged to support health and hospital services.

### SPECIAL FEES

Certificates, Teacher: Provisional . . . . .	\$2.00
Professional . . . . .	3.00
Duplicate records, each . . . . .	2.00
Field trips, each, when required for any given course: an amount sufficient to defray the cost of the trip	
General property deposit (first-time enrollment only) . . . . .	10.00
Graduation, application (includes diploma but not cap and gown) . . . . .	10.00
Laboratory, per course . . . . .	8.00
Late registration . . . . .	10.00
Returned checks, per check . . . . .	5.00
Student teaching, per credit hour . . . . .	5.00
Thesis binding, per volume . . . . .	6.00
Transcripts, each . . . . .	1.50

### Definitions and Regulations

All charges for tuition and fees are as permitted or directed by State law and as promulgated by the Board of Regents of the University of Houston.

#### Tuition

Tuition is assessed each student according to his residence classification and the number of semester credit hours for which he registers, subject to the statutory provisions of House Bill No. 43, 62nd Legislature:

**Residents of Texas** will be charged tuition at the rate of \$4.00 per semester credit hour, but the total of such charge will not be less than \$50.00 per semester or nine-week summer session.

**Nonresidents of Texas** will be charged tuition at the rate of \$40.00 per semester credit hour.

An alien who has been lawfully admitted for permanent residence in the United States shall not, by reason of that status alone, be disqualified from classification as a resident, provided, however, that aliens who are present in the United States on a temporary or student visa shall not be eligible for classification as residents.

#### Student Service Fees

The Student Service Fee, as authorized by State law, is required of all students. The income from this fee supports recreational activities, health and hospital services, artist and lecture series, cultural entertainment series, student publications and government, enforcement and administration of parking regulations, and other student services as authorized by State law.

#### Building Use Fee

The Building Use Fee, as authorized by State law and approved by the Board of Regents, is required of all students and is pledged to the retirement of bonded indebtedness for building construction.

#### General Property Deposit

Students registering at UH/CLC for the first time will be required to pay and maintain a \$10.00 General Property Deposit. This deposit is to insure the University against losses, damages, and breakage in libraries and laboratories. This deposit will be refunded only upon written request made within four years from date of last attendance at UH/CLC.

### **Parking Fee**

A parking fee of \$10 for each semester and \$6 for each 9-week summer session will be assessed each student who operates a motor vehicle on the campus or on properties leased by the University. If students have two vehicles to be registered, they must present the Title of each vehicle, and a fee of \$2 will be charged for the second registration. A maximum of two vehicles may be registered at any time during a term.

Any vehicle not having a valid University of Houston at Clear Lake City decal will be ticketed unless special arrangements have been made with Security to park on campus without such decals.

Lost or stolen decals may be replaced for \$2. A change of vehicle registration may be accomplished free of charge when the remnants of the original decal are presented in the Security Office.

### **Student Financial Responsibility**

It is the policy of UH/CLC to require students to be in good financial standing with the University at all times. Failure to meet financial responsibilities to the University may subject students to withdrawal and disqualification for registration for a subsequent term. Statements of credits or transcripts shall not be given to or on behalf of a student until all financial responsibilities to the University have been met.

### **Residence Regulations**

It is important for students to know whether or not they will be classified as residents of the State of Texas. Students who do not qualify as bona fide residents at the time they register must pay the nonresident tuition fee. A complete set of the regulations for determining one's residence status for tuition purposes is presented in Appendix B of this catalogue.

An official determination of the student's residence status is made in the Office of Admissions at the time the Application for Matriclation and supporting documents are received. If a student expects his residence status to change before his first registration he should indicate this on his application. If after submitting the Application he finds his residence status is changed he must inform the Director of Admissions. It is the student's continuing responsibility to register under and to maintain the correct residence classification.

If there is any question concerning an individual's eligibility for classification as a resident of Texas at the time of registration, or any time thereafter, it is his responsibility to consult with the Director of Admissions. All requests for reclassification should be submitted at least 30 days prior to the registration period in question.

#### **Appeal of Residence Status**

Any student who believes he has been misclassified may petition the Director of Admissions for reclassification. The student will be required to furnish evidence in support of his appeal.

## **REFUNDS**

Students who pay tuition and fees for any term and who subsequently cancel their registration through the Registrar's Office prior to the first day of classes for that term are entitled to a full refund.

Students who officially withdraw from the University after classes begin may be eligible for a partial refund of tuition, the Student Services Fee, and the Building Use Fee. The applicable refund is based upon the courses in which the student is enrolled on the date of official withdrawal. Application for withdrawal must be made to the Registrar's Office. Withdrawals by letter are effective on date of receipt. The University reserves the right to deduct from the refund any outstanding financial obligations to the University.

No refund will be made to students who reduce their schedules after registration or to students who leave the University without officially withdrawing.

Refunds are made in accordance with the following schedule:

Fall and Spring Semesters	
On or before the 14th class day	.80%
15th through 20th class day	.60%
21st through 25th class day	.40%
26th through 30th class day	.20%
Thereafter	No refund
Nine Week Summer Term	
During first week	.60%
During second week	.20%
Thereafter	No refund

Class days, excluding only Sundays and University holidays, are counted from the day classes begin as specified in the Academic Calendar.

Refund checks will be mailed to the student's officially listed address within 25 days after official withdrawal.

## STUDENT FINANCIAL ASSISTANCE

The University of Houston at Clear Lake City recognizes that not all students command personal and family resources sufficient to defray the total costs of a college education. Students may therefore seek financial assistance in the form of loans, grants, scholarships, part-time employment, or combinations thereof. Student financial assistance is predicated on demonstrated need, and every effort is made to cover the actual difference between the cost of attending UH/CLC and the amount of support that a student or family can reasonably be expected to provide. In the event that the University's available resources are inadequate to meet the total demand of all qualified applicants, academic promise may also be a criterion in the selection of financial aid recipients.

The University endeavors to insure that all applications for financial assistance are evaluated in a consistent manner, based on a consistent interpretation of need. The student may submit the Financial Aid Form (FAF) to the College Scholarship Service. This form may be obtained from the institution where the applicant is currently enrolled or from the Office of Admissions at UH/CLC, and should be filed as far as possible in advance of the term for which assistance is needed, but no less than six weeks before the beginning of the term. A renewal FAF is required for each subsequent year.

Although applications for financial assistance can be processed entirely by mail, the Director of Admissions at UH/CLC welcomes the opportunity to confer with applicants personally. If there are any special circumstances that might affect eligibility or contribute to a determination of the most appropriate form of assistance, the applicant should not hesitate to make an appointment for a personal conference.

No action on initial requests for financial assistance can be taken before the Office of Admissions has received an Application for Matriculation. If all required documentation has been submitted in timely fashion the University will endeavor to notify the applicant simultaneously regarding action taken on the Application for Matriculation and the request for financial assistance.

For further information, prospective students should contact the Financial Aid Counselor, Office of Admissions, UH/CLC, 2700 Bay Area Boulevard, Houston, Texas 77058.

### Competitive Scholarships

The following information is reprinted in part from Rules and Regulations for Determining Residence Status, published by the Coordinating Board, Texas College and University System, and pursuant to Title 3, Texas Education Code.

Statute: Section 54.051(p) A nonresident student holding a competitive scholarship of at least \$200.00 for the academic year or summer for which he is enrolled is entitled to pay the fees and charges required of Texas residents without regard to the length of time he has resided in Texas, provided that he must compete with other students, including Texas residents, for the scholarship and that the scholarship must be awarded by a scholarship committee officially recognized by the administration of the institution of higher education.

## Exemption From Tuition and Fees

The statutes of the State of Texas describe certain instances in which students may be exempted from tuition and/or certain fees. The various types of exemptions are described below; however, in each case it is the student's responsibility to initiate the action of applying for an exemption through the Office of Admissions and Records and to provide evidence that all conditions required for the exemption have been met. Until such time as the exemption is established, a student will be required to pay all tuition and fees. Students should apply to the Office of Admissions at least one month prior to registration for the term in which they plan to utilize the exemption provision.

### Exemption of Texas Ex-Servicemen (Hazlewood Act)

A legal resident of Texas may be exempted from tuition and certain required fees, but not from deposits, when he meets all of the following criteria:

1. He has resided in Texas for a period of not less than twelve (12) months prior to the date of registration.
2. He served in the armed forces or in certain auxiliary services in World War I, World War II, the Korean conflict, or any time thereafter. If service was subsequent to the the Korean conflict, he must have served on active military duty (other than for training) for more than 180 days.
3. He was a bona fide legal resident of the state at the time of entering service.
4. He was honorably discharged from service (those who served in World War II and who were discharged because of being over the age of 38 or because of personal request are not eligible for this exemption).
5. He is not eligible for educational benefits provided for veterans by the United States Government.

### Benefits for Children of Texas Veterans

Exemption from payment of tuition and certain fees extends to children of members of the armed forces who were killed in action or died while in service in World War II or in the Korean conflict or in any subsequent action and to orphans of members of the Texas National Guard and the Texas Air National Guard killed since January 1, 1946, while on extended active duty.

### Exemption of Children of Certain Disabled Public Employees

Children of certain eligible firemen, peace officers, employees of the Texas Department of Corrections, and game wardens who have suffered injury resulting in death or disability sustained in the line of duty may under certain conditions be exempted from payment of all tuition and certain fees.

### Exemption of Certain Deaf and Blind Students

Blind or deaf persons who are Texas residents may, under certain conditions, be exempted from payment of tuition and certain fees.

### **Children of Prisoners of War or of Persons Missing in Action**

A dependent child under 18 years of age, or a person under 25 years of age who receives the majority of his support from his parent or parents, may be exempted from the payment of tuition and certain fees if he is the dependent child of any person who is a domiciliary of Texas on active duty as a member of the armed forces of the United States and who at the time of registration is classified by the Department of Defense as a prisoner of war or as missing in action.

### **Veterans**

Students eligible for veterans' educational benefits under federal programs should obtain information regarding certification from the nearest Veterans Administration Office. After approval for educational benefits by the Veterans Administration, the student should present his Certificate of Eligibility to the Veterans Counselor in the Office of Admissions and Records prior to registration.

A veteran is considered to be a full-time student if he enrolls for 12 credit hours in undergraduate studies or 9 credit hours in graduate studies.

### **Social Security**

Persons eligible for educational benefits under the Social Security Administration Program should contact their nearest Social Security Office. The Social Security Office will provide the student with a form which must be submitted to the Director of Admissions and Records for certification of the student's current enrollment status.

### **Vocational Rehabilitation**

The Texas Rehabilitation Commission offers assistance for tuition and required fees to students who have certain physical or emotional handicaps, provided the vocational objective selected by the handicapped person has been approved by an appropriate representative of the Commission. Through this state agency, other rehabilitation services are available to assist handicapped persons to become employable.

Application for this type of assistance should be made to the nearest rehabilitation office. Inquiries may be addressed to the Commissioner, Texas Rehabilitation Commission, Medical Park Tower, 1301 West 38th Street, Austin, Texas 78705.

# Academic Policies

The regulations and provisions contained in this catalogue are based upon present conditions and are subject to change without notice. The University reserves the right to modify any statement as necessitated by unforeseen conditions or by legislative action.

Each student is responsible for knowing the current regulations of the University. Current regulations are applicable to all students regardless of the date of matriculation. Interpretations or explanations contrary to the regulations in this catalogue are not binding upon the University.

## COURSE LOAD

The University of Houston at Clear Lake City does not delimit a permissible course load for students. In evaluating their ability to carry a certain course load, students should consider the following:

1. the time available to them for class preparation;
2. whether or not an excessive load might endanger their academic standing;
3. their own physical and mental stamina; and
4. the economics of accelerating or decelerating their progress toward a degree in terms of commuting costs, tuition, fees, and personal budget.

Entering undergraduate students should be aware that their academic work at UH/CLC will be of an advanced level and may impose demands on their abilities and time quite different from those to which they have been accustomed. Superior students may be justified in carrying a greater load than students who find academic work more difficult. Entering graduate students should give similar consideration to their individual abilities or limitations when determining an appropriate course load.

## CLASS ATTENDANCE

Regular class attendance is expected of all students at the University of Houston at Clear Lake City. What constitutes an acceptable rate of class attendance is a matter between individual students and their instructors, although the University expects instructors to maintain reasonable standards of class attendance. Whenever an instructor determines that an individual student's absences have been excessive, he will request that the Registrar remove the student's name from the class roster, in which case the student will receive the appropriate withdrawal mark (see Marking System). The student has the right to appeal such action to the University Review board.

## MISSED EXAMINATIONS

Students are expected to be present at all announced examinations, including final examinations. Unless satisfactory alternate arrangements are made with the instructor, missed examinations may be considered as failed.

## MARKING SYSTEM

The University of Houston at Clear Lake City uses nine marks for recording outcomes of student course enrollments on grade reports and transcripts; these marks are A, B, C, D, F, I, WX, WS, and WU. The nine possible marks may be divided into three categories, as follows.

### Final Marks

Final marks are "grades" for completed courses. The following final marks and definitions are employed by UH/CLC faculty in evaluating student performance.

<b>A:</b>	Superior performance
<b>B:</b>	Good performance
<b>C:</b>	Average performance
<b>D:</b>	Marginal performance
<b>F:</b>	Unsatisfactory performance

## Incomplete Mark

The student who does not withdraw from a course but who fails to complete the work necessary for final evaluation may, at the discretion of the instructor, be given a mark of I or "Incomplete." When assigning the mark of I, the instructor will provide the student with a definite outline of the work to be accomplished before the I can be converted to a final mark and will specify a deadline date; the outline constitutes an agreement between the instructor and the student, with copies sent to the student's advisor(s) and the Registrar. A mark of I must be resolved within the time limit set by the instructor; however, such limit may not be extended beyond the last day of classes of the next long semester following the term in which the I was incurred. Failure to resolve an I may result in its conversion to a final mark of F on the student's permanent record. For other implications, see Academic Standards.

## Withdrawal Marks

Students who drop a course or withdrew from all courses after the last date for schedule modification (see Academic Calendar) receive one of the following marks:

<b>WX:</b>	Withdrew without evaluation
<b>WS:</b>	Withdrew, performance satisfactory
<b>WU:</b>	Withdrew, performance unsatisfactory

The mark of WX implies no evaluation of the student's performance prior to withdrawal, but the student may retain auditing privileges with the instructor's consent. The last date to withdraw with evaluation is specified in the Academic Calendar. Following this date, it is the responsibility of the instructor to assign a mark of WS or WU.

Students wishing to drop a course must do so before the deadline cited in the Academic Calendar. Student-initiated drops and withdrawals are irrevocable.

## Repeated Courses

1. A mark once earned and entered upon a student's permanent record will not be removed. If a student repeats a course it is with the understanding that the last mark earned in the course is the one to be counted toward fulfillment of degree requirements.
2. With prior approval of the appropriate program director (undergraduates), or dean (graduate students), a student may repeat a course at another college or university to raise a mark, including F or WU, earned at UH/CLC. However, the original marks earned at UH/CLC will remain a part of the student's permanent record.
3. Courses repeated at other institutions are treated as transfer credit and will not be considered as residence credit.

## Voluntary Withdrawal

Applications for official withdrawal from a course or from the University must be made to the Registrar's Office. Withdrawals by letter are effective on date of receipt.

## Administrative Withdrawal

The University reserves the right to withdraw a student from a class or classes if, in the judgement of University officials, such withdrawal is in the best interest of the student or the University.

## ACADEMIC HONORS LIST

At the end of each academic term, the University of Houston at Clear Lake City will publish an Academic Honors List recognizing students whose performance has been of a consistently superior quality. To be eligible, a student must have earned a minimum of 12 semester hours during the preceding three academic terms. Those eligible are then ranked in order on the basis of cumulative academic records, and the names of those in the top ten percent are placed on the Academic Honors List.

## ACADEMIC STANDARDS

The University of Houston at Clear Lake City expects students to meet certain standards of academic performance in order to maintain matriculated status and applicable degree candidacy. These standards are implicitly defined by the following:

### Policies for Undergraduate Students

1. Accumulation of 2 F's and/or WU's will result in termination of permission to register at the University and cancellation of Bachelor's degree candidacy. Students may petition the University Review Board for reinstatement, presenting new evidence of ability to do upper-level college work of satisfactory quality. If approved, reinstatement is provisional and degree-seeking students must reestablish candidacy. If candidacy is not reestablished, the student has NDO status. Accumulation of 2 additional F's and/or WU's will result in dismissal from the University.
2. It is recommended that students who have accumulated two or more unresolved marks of "I" not register for additional courses until all such "I's" have been resolved.

### Policies for Graduate Students

1. Candidacy for graduate degrees will be cancelled upon accumulation of 3 marks of C, D, F and/or WU, and the student will revert to NDO status.
2. After a student accumulates a total of 4 marks of C, D, F, and/or WU he may not register for additional courses without the approval of the University Review Board.
3. It is recommended that students who have accumulated two or more unresolved marks of "I" in courses other than Master's Thesis not register for additional courses until all such "I's" have been resolved.

## RESIDENT CREDIT

Resident credit may be defined in either of two ways:

1. credit awarded for successful completion of academic work undertaken at UH/CLC; or
2. credit awarded for successful completion of academic work undertaken at another college or university by a student matriculated in absentia at UH/CLC, provided that
  - (a) the student is a candidate or provisional candidate for a degree at UH/CLC;
  - (b) the student had the written approval of both his faculty advisor and the appropriate program director before undertaking the academic work at another institution.

Students should be aware that credits earned elsewhere without prior approval from UH/CLC are not considered credits "earned in residence" for the purpose of fulfilling general degree requirements.

Students should also be aware that marks received for work taken under provision (2) are counted as determinants of their academic standing at UH/CLC (see Academic Standards).

## CONCENTRATION OR DEGREE CHANGES

A student who wishes to change his area of concentration or degree objective must obtain the Change of Degree Objectives form at the Registrar's Office. He will then be directed to appropriate persons for approval of the proposed change. The change is not official until the required form has been completed, approved, and filed with the Registrar. The student is responsible for initiation of this process.

## NAME AND ADDRESS CHANGES

University records of a student's name and address are based upon the information given on the Application for Matriculation. Subsequent changes must be reported in writing to the Registrar.

Any communication from the University mailed to the name and address on record is considered to have been properly delivered, and the student is responsible therefor.

## TRANSCRIPTS

Students may obtain official copies of their transcript from the Office of the Registrar at a cost of \$1.50 per copy. Requests for transcripts must be in writing and must bear the signature of the student whose record is requested. Telephone requests cannot be honored. Students whose permanent records have been encumbered will be denied transcript services until the specified obligations have been met.

Transcripts from other institutions submitted to UH/CLC will become the property of the University and will not be reproduced and/or mailed to other institutions. Upon written request of the student, a statement of work in progress (i.e., a listing of classes in which the student is currently enrolled) will be included with the transcript.

## POLICY ON RELEASE OF STUDENT RECORDS

The release of either the student's permanent academic record or information contained in the student's permanent record folder, including information regarding student financial assistance, normally is released to a third party only with the student's written consent. Information contained in the student's permanent record maintained at UH/CLC may, however, be released without the consent in the following instances:

1. In the case of an unmarried minor student, upon the written request of the student's parent or legal guardian, and upon receipt of payment of the appropriate fee.
2. Upon subpoena duces tecum.
3. To such agencies as the Social Security Administration, the Veterans Administration, the Office of Education, and the Coordinating Board, Texas College and University System, for reports required in the support of a student's application for educational benefits or for the administration of an award of financial assistance.
4. To an accreditation agency or to another institution of higher education on request.
5. For legitimate historical and educational research (recipients of such information will be bound by professional and ethical standards to treat information received as confidential and will agree that the student's right to privacy will be protected).
6. For notifying the Retail Credit Bureau of former students who incurred financial obligations to UH/CLC while enrolled.

7. To avoid harm to the student or to the public good.
8. To members of the UH/CLC faculty or staff having legitimate needs for such information in the pursuit of the student's academic progress at UH/CLC.

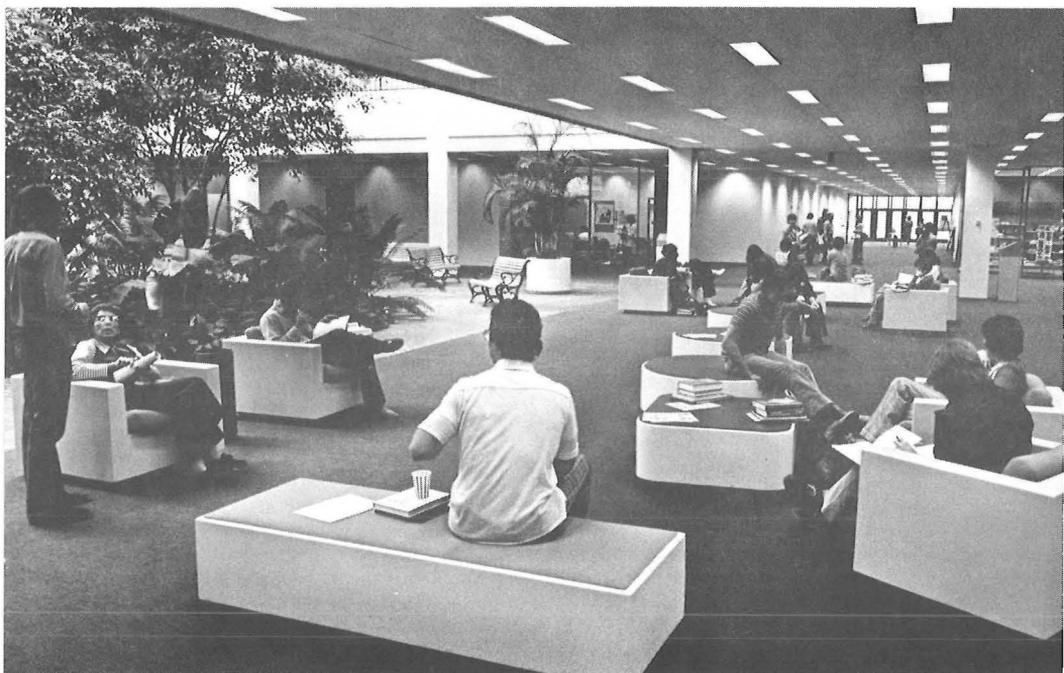
Directory-type information, classified as public information, may be released upon request by any party. Such information may include the student's full name, home address, local address, telephone number, classification, area of concentration, dates of attendance, degrees granted, and honors received. Any information about a student contained in a publicly distributed directory may be released without the student's specific consent. Students wishing to exclude themselves from the issuance of directory-type information must make their desires known in writing to the Office of the Registrar by the fifth class day of each semester.

## **STUDENT CONDUCT**

The University expects that the products of a student's efforts in a course reflect solely the work of that student unless otherwise authorized. Students who are observed cheating or plagiarizing in a course may be awarded a failing grade or referred to the University Review Board.

## **STUDENT RESPONSIBILITY**

The student is held responsible for knowing degree requirements and enrolling for courses that fit his degree program. He or she is likewise held responsible for knowing the University regulations in regard to student affairs and the standard of course work required for continuance in the University. Information regarding degree requirements and academic work standards may be obtained from the appropriate Dean or Program Director. Student Affairs information may be obtained from the Office of Academic Appraisal and Advisement.



# Degree Requirements

## GENERAL REQUIREMENTS FOR THE BACHELOR'S DEGREE (Minimum Standards)

The following general requirements for the bachelor's degree (BA, BS, or BBA) are minimum standards established by the University; individual programs may impose additional, more specific requirements that will be incorporated into an approved Candidate Plan of Studies.

1. Fulfillment of the statutory requirements of the State of Texas, as follows:
  - Credit for 6 semester hours, or its equivalent, in American history and 6 semester hours in the constitution of the United States and Texas; 3 hours of each 6-hour requirement may be satisfied by advanced placement or advanced standing examination; 3 hours in Texas history may be applied toward satisfying the history requirement.
2. Evidence of written and oral proficiency in the English language, as demonstrated by
  - (a) successful performance as recognized by the University or as demonstrated on examination or
  - (b) 6 semester hours in English with grades of C or better.
3. Completion of an approved Candidate Plan of Studies subject to the following provisions:
  - (a) at least 120 semester hours of applicable college credits, exclusive of activity courses, must be earned;
  - (b) no more than 18 semester hours of previously earned lower-level credit, to be counted toward the degree, may represent work accomplished by correspondence and/or extension.
  - (c) at least the final 30 hours must be taken in residence;
  - (d) at least 12 hours in the major area of concentration must be taken in residence; and
  - (e) grades of A, B, or C must be earned for at least 54 hours of upper-level course work; work accomplished by correspondence and/or extension may not be counted in fulfilling this requirement.
4. Satisfaction of requirements specific to the major area of concentration.
5. The undergraduate applicant who has previously earned upper-level credits should be aware of the following university policy:
 

Upper-level credits earned more than seven (7) years prior to admission to undergraduate study at UH/CLC may not be counted towards fulfilling the required number of hours unless special dispensation is granted by the dean. It is the prerogative of the dean to determine (1) whether the courses for which credits were earned are by current standards of the discipline in fact of upper-level substance, and (2) whether the student can demonstrate sufficient retention of the substance to apply it in the present.

## GENERAL REQUIREMENTS FOR THE MASTER'S DEGREE (Minimum Standards)

The following general requirements for the master's degree (MA, MS, and MBA) are minimum standards established by the University; individual programs may impose additional, more specific requirements that will be incorporated into an approved Candidate Plan of Studies.

1. Completion of an approved Candidate Plan of Studies of 30 or more semester hours, subject to the following provisions:
  - (a) at least the final 24 hours must be taken in residence;
  - (b) at least 24 hours must represent courses from the 5000 and 6000 series;
  - (c) six hours must be satisfied through one of the Master's Degree Options;
  - (d) grades of A or B must be earned for at least 24 hours of course work;
  - (e) no grade below C may be applied towards the degree; and
  - (f) credits earned by correspondence and/or extension may not be applied towards the degree.
2. Satisfaction of requirements specific to the major area of concentration.
3. Courses completed more than five (5) years prior to admission to graduate study at UH/CLC may not be counted towards fulfilling the required number of hours unless special dispensation is granted by the appropriate dean.

## MASTER'S DEGREE OPTIONS

One or more of the following options are available for each program leading to a master's degree. Choice of option requires the Dean's approval, and not all options are made available.

**Option 1. Master's Thesis:** requires continuous registration in the appropriate thesis research course until completion, for a minimum of six semester credit hours. Objective: The Master's thesis must present evidence of (1) a thorough review and understanding of the literature, (2) the ability to do independent research, and (3) the preparation of a manuscript which conforms to generally recognized standards of scientific and scholarly writing in the discipline. The Dean of each school will provide on request a copy of the procedures for selecting an advisor and thesis committee, writing a proposal in advance of starting work, preparing the manuscript, presenting the thesis for approval, binding copies of the completed thesis, and registering for thesis work.

**Option 2. Master's Project:** requires 6 semester credit hours in an approved project as prescribed by the individual program; "mini-thesis" included. Objective: The master's project is a sustained work that intellectually supports the degree program but which cannot be readily regarded as a thesis or an internship. The project may be widely and variously conceived; however, it must provide evidence of the ability and effort to carry out a major application of theory or advanced methods relative to master's level course. The Dean of the school will provide a copy of detailed procedures.

**Option 3. Graduate Internship:** requires 6 semester credit hours in an appropriate graduate internship as prescribed by the individual program. Objective: The master's internship is designed to provide an important learning experience complementary to the academic preparation gained in course work. In general, the internship must represent application of master's level instruction to materials or situations that are new to the student. The internship should provide an opportunity for the student to evaluate the relevance of theoretical or academic perspectives to the real-world environment. The Dean of the school will provide a copy of detailed procedures.

**Option 4. Extended Course Work:** requires 6 semester credit hours, in addition to all other semester hours requirements, in graduate courses approved by the appropriate Director and Dean. Candidate Plans of Study must contain a minimum of 36 semester credit hours.

**Appeals:** A student may appeal previous academic actions or decisions by faculty members regarding Master's Degree Options 1, 2, or 3 by writing to the University Review Board, in care of the Provost's Office, asking for further consideration.

## Requesting Comprehensive Examinations

Students who have selected degree options requiring comprehensive examinations are responsible for requesting in writing said examinations from the Dean of their school at least ten days prior to the examination. Program Directors and/or chairpersons of the student's master's degree committee will offer guidance concerning the student's readiness for the examination and the form of the request.

## Repeating Comprehensive Examinations

Students who have been reported to the Dean of a school to have failed a comprehensive examination may request a second comprehensive examination no sooner than one full semester after the semester in which the examinations were failed initially. Comprehensive examinations normally will not be administered more than two times. Appeals to this policy are heard by the University Review Board.

## UNDERGRADUATE INTERNSHIP

The same procedures and written requirements apply to undergraduate internships as to master's internships, except that the level of difficulty of work or other activity required of the interning student will be appropriate to the undergraduate level and to the particular degree program. The dean of the school will provide a copy of detailed procedures.

## SPECIAL REQUIREMENTS

Students should be aware of two categories of special requirements that may be imposed beyond the University's general requirements for a bachelor's or master's degree.

### Requirements Specific to the Major Area of Concentration

Admission to candidacy in a specific degree program presupposes the establishment of a Candidate Plan of Studies which must include whatever requirements have been officially approved for a program area. Such requirements are shown in the program descriptions in subsequent sections of this catalogue.

If such requirements include an undergraduate internship, the same procedures and written requirements apply to undergraduate internships as to master's internships, except that the level of difficulty of work or other activity required of the interning student will be appropriate to the undergraduate level and to the particular degree program.

### Foundation Requirements

It is possible for students to be accepted for matriculation in the University as either undergraduate or graduate students without demonstrating all the foundation requirements for admission to candidacy in a specific or in any degree program. Depending on the major area of concentration, students may be required to take specific courses at an accredited community college or at this institution in order to complete foundation requirements before being admitted to degree candidacy. Credits so earned may be in addition to the requirements for the degree itself.

## ADDITIONAL BACHELOR'S DEGREES

Students possessing a bachelor's degree from UH/CLC or another accredited college or university may earn an additional bachelor's degree in a different area of concentration by satisfying the following general requirements:

1. Fulfillment of the statutory requirements of the State of Texas for history and constitution, as follows:

Credit for 6 semester hours, or its equivalent, in American history and 6 semester hours in the constitution of the United States and Texas; 3 hours of each 6-hour requirement may be satisfied by advanced placement or advanced standing examination; 3 hours in Texas history may be applied toward satisfying the history requirement.

2. Completion of an approved Candidate Plan of Studies subject to the following provisions:
  - (a) at least 30 semester hours of applicable college credits must be earned.
  - (b) at least the final 30 hours must be taken in residence;

- (c) at least 24 hours in the major area of concentration must be taken in residence; and
  - (d) grades of A, B, or C must be earned for at least 30 hours of upper-level course work.
3. Satisfaction of requirements specific to major area of concentration.

Note: Credits earned and applied toward any degree previously earned may not be applied toward a second or additional degree.

## ADDITIONAL MASTER'S DEGREES

Students possessing a master's degree from UH/CLC or another accredited college or university may earn an additional master's degree in a different area of concentration by satisfying the General Requirements for the Master's Degree.

## GRADUATION UNDER A PARTICULAR CATALOGUE

Students are entitled to graduate under the provisions of the catalogue in effect at the time of their initial matriculation as degree-seeking students. In no instance, however, may a student earn a bachelor's degree under the provisions of a catalogue more than seven (7) years old or a master's degree under the provisions of a catalogue more than five (5) years old. In the event a student exceeds these time limits, upper-level and graduate credits earned more than seven or five years previously, whether at UH/CLC or another institution, will no longer be considered applicable to fulfilling total semester hour requirements unless special dispensation is granted by the student's dean and approved by the Academic Review Board. A student exceeding the time limits will also automatically come under the provisions of a more recent catalogue, the specific edition to be determined by the University Review Board.

## APPLYING FOR GRADUATION

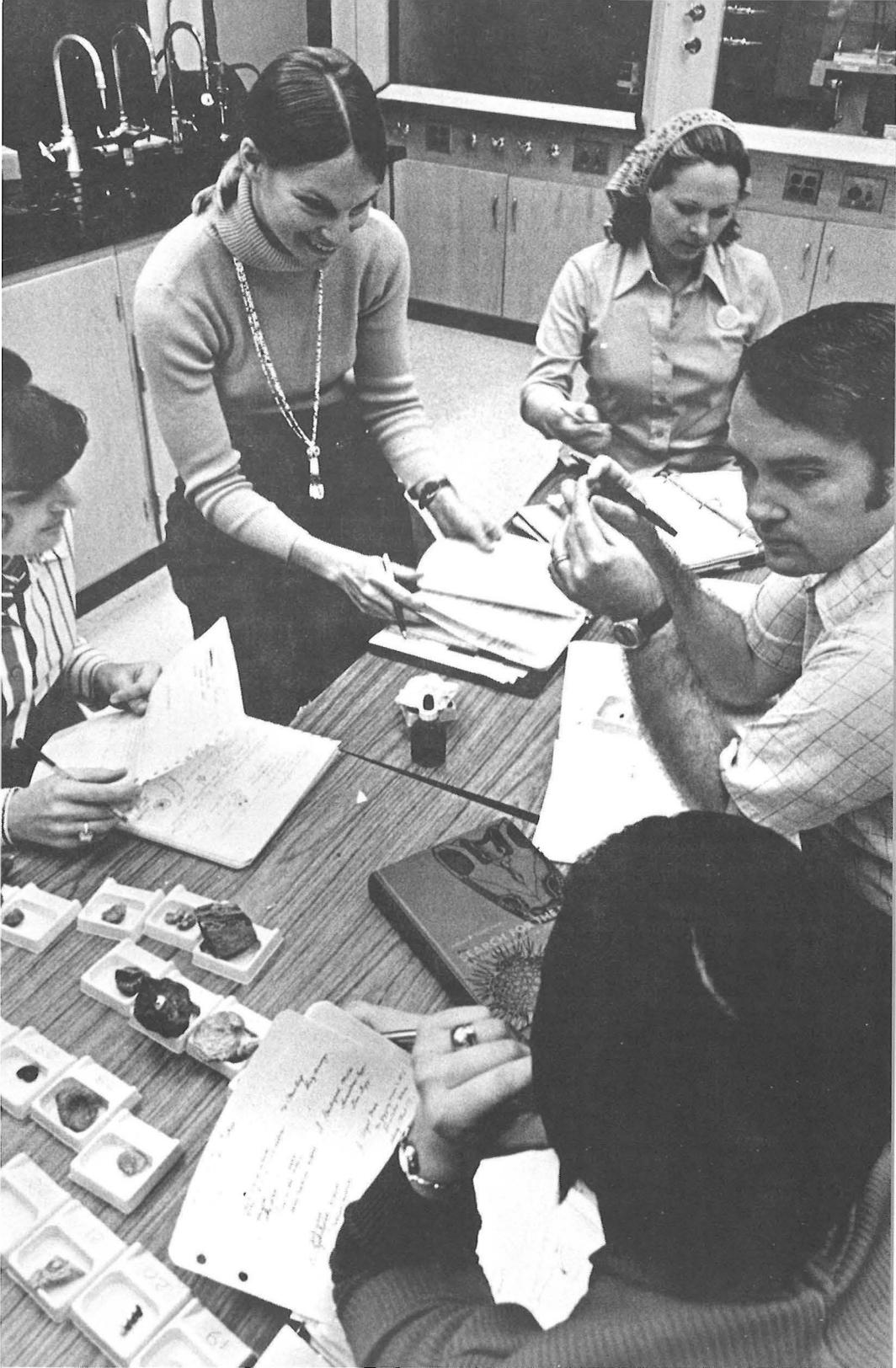
Degree candidates must officially apply for graduation at the Registrar's Office during the term in which they plan to graduate. Applications must be filed no later than the date specified in the Academic Calendar. A non-refundable fee of \$10.00 is required. If a student does not graduate at the close of the term for which he has applied, he must again apply and pay the \$10.00 fee during the subsequent term in which he intends to graduate.

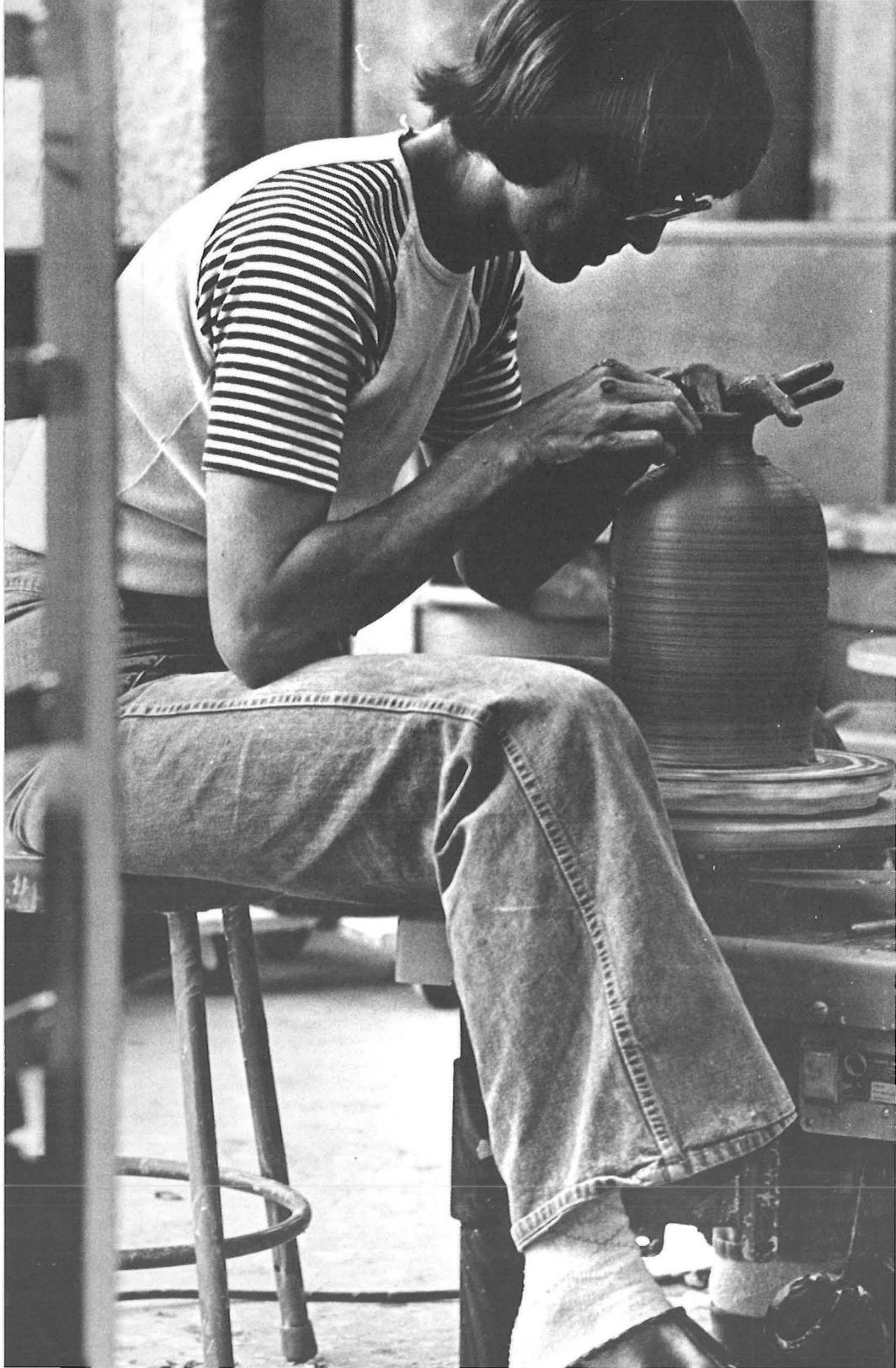
## GRADUATION WITH HONORS

Subject to the approval of the appropriate Dean, undergraduate students who complete their degree requirements with exceptionally high scholastic averages will be eligible for baccalaureate degrees with honors. Those who are in the top 2.5 percent of their class will be eligible to be graduated summa cum laude; those in the next 2.5 percent, magna cum laude; and those in the next 5.0 percent, cum laude.

Baccalaureate degree candidates who have earned one or more grades below C will be ineligible for honors unless they are recommended for honors by their Dean.

Rank in the graduating class will be calculated only for work completed at the University of Houston at Clear Lake City.





---

# School of Human Sciences and Humanities

---

Of all human knowledge, the knowledge of man is the most deserving of his study. Yet this knowledge is not the most cultivated or the most developed which we possess. The generality of men neglect it completely. And even among those who busy themselves with this knowledge, there are very few who dedicate themselves to it.

Malebranche, *In Search of Truth*, 1674

The central object of study in the School of Human Sciences and Humanities is man: his individual and social condition, his beliefs, his values, his aspirations, his institutions, his cultural achievements, his varied capacity for good and evil, community and conflict, and with special contemporary urgency, his future potentialities.

The criteria for programs and courses are their relevance to fundamental human concerns, their capacity to deal with things one needs to know in order to live more fully, and the degree to which they illuminate the human condition generally.

The structure of the School of Human Sciences and Humanities is designed to help realize these aims. Instead of many separate departments, there are two interrelated program clusters: Humanities and Human Sciences. Within these programs students may develop either a broadly interdisciplinary plan of study or one that is more narrowly focused and resembles the traditional departmental major. With the help of a faculty advisor, each student develops the kind of program most supportive of his or her own interests and goals.

## ENGLISH PROFICIENCY REQUIREMENT

All degree-seeking undergraduate students enrolled in the School of Human Sciences and Humanities will be required to demonstrate proficiency in writing English. Ordinarily this requirement will be fulfilled by passing, with a grade of C or better, the course in Advanced Writing (COMM 3037). With the permission of the appropriate Program Director this proficiency may be demonstrated by other means, such as passing, with an acceptable score, the CLEP Examination in English Composition. Students are urged to fulfill the English proficiency requirement as early as possible during their attendance at UH/CLC.

## PROGRAMS IN HUMAN SCIENCES

Programs in Human Sciences are designed to help the student explore a number of significant human issues: to understand one's self in relation to others; to distinguish what is genuinely personal from what is societal; to help in the difficult processes of value formation and critical thinking; to come to a more subtle appreciation of collective ideals and notions of the good life, the nature of happiness and how to secure it; to cope more intelligently with the complexities and problems of modern society; and to give serious and sustained attention to our collective future, examining means of coping with the unexpected and attempting predictions on which to base rational plans for future development and growth.

Programs in Human Sciences have both strong theoretical and applied orientations. At the same time they seek better understanding of self and society, they are equally intended to prepare students for a variety of professional careers, ranging from social work and human service agencies to recreation development, and to planning and forecasting. For specific information regarding careers in any of the Human Sciences, students should consult the Program Director or an appropriate faculty advisor.

## Behavioral Sciences (Undergraduate)

The undergraduate program draws chiefly from psychology, sociology, and anthropology. In planning their program, students may choose either a broad spectrum of human behavior or some specific focus, including a traditional major in psychology, sociology, or anthropology. Programs in Behavioral Sciences are especially designed to accommodate students who wish to develop careers in human services and/or social work. For specific information regarding the support courses for these and related careers, consult the Program Director or an appropriate faculty advisor.

### Student Preparation

Although there are no specific courses that are required prior to admission to the program, a strong background in at least one of the behavioral sciences is recommended.

### Program Requirements

The courses to be included in the Candidate Plan of Studies will be selected by the student and his advisor to meet individual interests and needs. Students seeking approval for teacher education must have advisement in both education and the field of certification. Students planning to use psychology or sociology as a teaching field must complete a minimum of 24 semester hours in the chosen specialty in addition to the required hours for a second teaching field and the professional courses in education.

## Behavioral Sciences (Graduate)

The graduate program in Behavioral Sciences leads to the Master of Arts degree. The program is intended as a vehicle for advanced study of human behavior and utilizes an interdisciplinary approach to the complexities of man's interaction with society. It is anticipated that most applicants for the program will have strong undergraduate preparation in the behavioral sciences; those with little or no previous training in these fields may be required to complete additional courses before achieving candidacy.

Each applicant for admission to the graduate program will be evaluated individually, using all available information to help the program admissions committee determine the student's ability to do successful graduate work in his or her intended area of specialization.

Although students accepted for matriculation at UH/CLC may take courses in Behavioral Sciences, they become candidates for a degree in the program only after official acceptance into the program.

Application for admission to the program and inquiries concerning details of the program should be addressed to the Dean, School of Human Sciences and Humanities.

### Degree Requirements

The Candidate Plan of Studies will include a minimum of 36 semester hours credit inclusive of Master's Degree Option 1, 2, or 3. Option 4, extended course work, is ordinarily not available to M.A. Candidates in Behavioral Sciences.

## Economics (Undergraduate)

Two avenues of approach are provided for interested students. In planning the sequences of courses leading to the Bachelor of Science degree, students may emphasize either the cultural or the business aspects of economics. Students who plan to make economics a teaching field as high school teachers may also be accommodated in the program.

## Student Preparation

Students planning to emphasize the business aspects of economics are encouraged to prepare for admission through courses in accounting, business law, computer science, mathematics, and statistics: a broad base of courses related to the business profession is highly advisable for students seeking their emphasis in economics. Students who are planning to emphasize the cultural aspects of economics are urged to prepare for admission through broad liberal arts preparation. All economics students should give special attention to mathematics in their selection of courses prior to transfer.

## Program Requirements

The specific courses to be included in the Candidate Plan of Studies are selected by the student and his advisor to meet individual interests and needs. Students with concentration in the cultural aspects of economics will ordinarily include courses in related social sciences; those with concentration in the business aspects of economics will be expected to include related courses from accounting, finance, and management. All students who plan to use economics as a teaching field must complete a minimum of 24 hours of approved courses in economics in addition to the hours required for a second teaching field and the professional courses in education. Students seeking to be approved for teacher education must have dual advisement in both education and economics.

The Candidate Plan of Studies must include a minimum of 24 semester hours of upper-level credit in economics. Of these, 6 hours must be earned in ECON 3331: Intermediate Microeconomics and ECON 3332: Intermediate Macroeconomics.

## Economics (Graduate)

The graduate program in Economics leads to the Master of Science degree. Depending on student interest, either business or social science components of economics may be emphasized in the program; the program is also intended to serve as a foundation for those who may pursue doctoral training in economics.

Although it is anticipated that most students applying for the program will have undergraduate preparation in economics, this is not prerequisite to admission. However, those students with minimum preparation in economics and related fields may be required to complete preparatory work prior to achieving candidacy. The following are recommended preparatory courses and may not apply toward fulfilling the required semester hours: Intermediate Microeconomics: Intermediate Macroeconomics: Introductory Statistics.

Applicants for admission must submit their scores on the Graduate Record Examination (GRE). This test is part of the process by which candidates are selected and is considered as partial evidence of an applicant's ability to do graduate work. An overall undergraduate grade point average of 2.75 (B=3.00) or a 3.00 average for the last 60 semester hours of work attempted is expected of all students.

Application for admission to the program and all inquiries concerning details of the program should be addressed to the Dean, School of Human Sciences and Humanities.

## Degree Requirements

The Candidate Plan of Studies will include 30 semester hours' credit inclusive of the Master's Degree Option 1, 2, or 36 semester hours credit inclusive of Option 4. All candidates must take ECON 5333, ECON 5334, ECON 5533, and 12 additional hours in economics courses. The balance of the candidate's required semester hours may be in electives approved by the advisor.

## Health, Leisure, and Sports

This program is designed for students who wish either to study health, leisure, and sports for goals of personal growth, or for those students with professional interests in recreation/health services. As a professional program, the emphasis will be on the recreational use of leisure from sociological, psychological, economic, and environmental points of view. Although the program involves significant study of both personal and community health, students interested primarily in health services are usually better accommodated in other programs at UH/CLC: Administration of Health Services, Allied Health, or Health Education.

### Student Preparation

Although no specific prerequisites must be met prior to admission to the program, a background in the social sciences is strongly recommended.

### Program Requirements

The specific courses to be included in the Candidate Plan of Study will be selected by the student in consultation with a faculty advisor.

NOTE: This program may not be fully implemented until 1977-78. Interested students should consult first with the Dean, School of Human Sciences and Humanities.

## Multi-Cultural Studies (Undergraduate)

The program in multi-cultural studies leads to the Bachelor of Arts degree. Multi-Cultural Studies gives special attention to pluralism--the diverse ethnic, religious, class, and racial groups in American society. Students in the program may select courses from a variety of disciplines such as sociology, anthropology, history, psychology, economics, and languages. They will also have opportunities to work in communities in the Houston area as part of their academic preparation.

### Student Preparation

Although there are no specific courses that must be completed prior to admission to the program, a strong background in either social sciences or humanities is desirable.

### Program Requirements

The specific courses to be included in the Candidate Plan of Studies are to be selected by the student and his advisor to meet individual needs.

NOTE: This program may not be fully implemented until 1977-78. Interested students should consult first with the Dean, School of Human Sciences.

## Studies of the Future (Graduate)

The program in Studies of the Future leads to the Master of Science degree. The program is interdisciplinary and focuses on the direction of trends in contemporary life and the range of possible responses to those developments. Graduates may seek professional engagement in forecasting the future, but the program is open to those whose interests are more general.

Each applicant for admission to the graduate program will be evaluated individually, using all available information to help the program admissions committee determine the student's ability to do successful graduate work in his or her intended area of specialization.

Application for admission to the program and all inquiries concerning details of the program should be addressed to the Dean, School of Human Sciences and Humanities.

## Degree Requirements

The Candidate Plan of Studies will include a minimum of 30 semester hours' credit inclusive of Master's Degree Option 1, 2, or 3, or a minimum of 36 semester hours' credit inclusive of Option 4. The specific courses to be included will be determined for each student in consultation with a faculty advisor.

## PROGRAMS IN HUMANITIES

Liberal Education, viewed in itself, is simply the cultivation of the intellect . . . and its object is nothing more or less than intellectual excellence.

John Henry Neumann, *The Idea of a University*

A man that has a taste of music, painting, or architecture, is like one that has another sense, when compared with such as have no relish of those arts.

Joseph Addison, *The Spectator*

The Programs in Humanities bring together, in interdisciplinary union, such related and complementary areas of study as literature, history, art, theatre, music, philosophy, religion, languages, and the composite field of "communications." Since these disciplines represent the core of what has traditionally been called the Liberal Arts, the Programs in Humanities constitute in part the Liberal Arts College within the larger University.

The Programs in Humanities, in identifying with the liberal arts tradition, view Education as not merely the business of transmitting knowledge and imparting skills. Going beyond that, the Humanities are dedicated to a set of common principles: that the educational process be intellectually stimulating and challenging; that it insist on clarity of thought, speech, and writing, and encourage the formation of enlightened attitudes, concerns, and values; and most importantly, that it help develop to the utmost the critical and creative faculties of each individual student.

## Applied Design and Visual Arts (Undergraduate)

In 1976-77 the Program in Applied Design and Visual Arts will offer studio courses in ceramics, design, drawing, painting, and printmaking, as well as a variety of courses in art history and art education. Depending on the availability of facilities and equipment, additional studio courses, e.g. in sculpture and jewelry-making, may be introduced in 1977-78.

The Program in Applied Design and Visual Arts is designed to serve the needs of a wide range of students, from those who wish to study art for purposes of personal growth and enrichment, to others who wish to use it in school settings, or to combine it with training in psychology in order to qualify for the practice of art therapy, to those, finally, who wish to lay the foundation for a professional career in art.

Although the Visual Arts Program does not offer a graduate degree, qualified students have the option of earning graduate-level credit and applying it toward an M.A. in Humanities.

For additional information about the Program in Applied Design and Visual Arts, call or write the Director, Programs in Humanities.

## Student Preparation

Although there are no specific prerequisites for admission to the program, it is highly recommended that students have experience (or at least strong interest) in some area of art.

### Program Requirements

The courses to be included in the Candidate Plan of Studies will be selected by the student and his or her advisor to meet individual interests and needs. Students interested in art education must discuss their curriculum with advisors in both the art and professional education programs; those interested in art therapy must be sure to plan their curriculum with the appropriate advisor in the Behavioral Science Program.

## Historical Studies (Undergraduate)

The Program in Historical Studies is broadly conceived to include all aspects of man's development and heritage, whether they be political, social, religious, cultural, or philosophical. Hence an undergraduate degree program in Historical Studies is not limited to history courses but should draw from the entire range of related offerings, such as, for instance, anthropology, art, and economics. Students who plan to teach history and/or government in secondary school should select this program area.

For additional information about the Program in Historical Studies, call or write the Director, Programs in Humanities.

### Student Preparation

There are no specific prerequisites for admission to the program other than intellectual curiosity and a lively interest in how ideas, institutions, societies, and individuals change and have changed over time.

### Program Requirements

The specific courses to be included in the Candidate Plan of Studies will be selected by students and their advisors to meet individual needs and interests. Students who choose a conventional history concentration will probably want to emphasize either America or Europe; among more unconventional options could be a regional or thematic concentration in, for instance, the South, religious movements in Europe and America, etc.

Students who plan to teach social science (history and/or government) in secondary school must have dual advisement, both in the teaching field(s) and in professional education.

Qualified students are encouraged to include the Undergraduate Honors Thesis in their plan of studies.

## HISTORICAL STUDIES (Graduate)

The graduate program in Historical Studies offers interested students the possibility of earning the Master of Arts degree. Since the program is designed to facilitate an advanced level of historical inquiry, applicants for graduate degree candidacy should have had considerable undergraduate training in history. Students who lack sufficient background may be required to take supplementary course work before being admitted to candidacy.

### Degree Requirements

Each master's degree candidate devises his/her own plan of studies, with the assistance and approval of his or her faculty advisor. The plan must include a minimum of 30 semester hours of credit, inclusive of Master's Degree Options 1 or 2, or a minimum of 36 hours inclusive of Option 4.

For the successful completion of Master's Degree Option 1, the Master's Thesis, the student will be expected to do original work in some field of historical inquiry. Emphasis should be placed on the creative use of materials and methods, including those which can be appropriately borrowed from complementary disciplines such as literature, art, sociology,

and psychology. The presentation of the thesis need not be limited to the traditional style, but may include forms such as film, videotape, or theatre.

Application for admission to the program and inquiries concerning details of the program should be addressed to the Dean, School of Human Sciences and Humanities.

## Humanities (Undergraduate)

The undergraduate program in Humanities leads to the Bachelor of Arts degree. The program is designed to accommodate students who seek a general and integrative understanding of the liberal arts. Since a humanities concentration allows the student to draw from the entire range of courses offered by the University, it also imposes the responsibility for putting together a plan of studies which demonstrates an adventurous balance between variety and coherence.

Some humanities students may wish to specialize in American or European Studies. These options provide a broad perspective on America or Europe by bringing together literature, history, anthropology, philosophy, religion, art, music, theatre, the social sciences—as they contribute to the examination of critical issues in these cultures.

The openness of this degree program offers endless possibilities for devising integrative, creative plans of study suited to students' individual needs and interests. In addition to the thematic concentration mentioned above, the student could specialize in women's studies, the philosophical and religious concepts underlying Western civilization, or a combination of music and art (since the University offers music courses but no degree in music.)

For additional information about this undergraduate degree program, call or write the Director, Programs in Humanities.

### Student Preparation

There are no specific prerequisites for admission to the program. A background in the humanities is desirable, but what is really needed is an interest in one or more of the program areas in Humanities and a desire to make conceptual connections between them.

### Program Requirements

The specific courses to be included in the Candidate Plan of Studies will be selected by the student in consultation with his/her advisor. Qualified students are encouraged to include the Undergraduate Honors Thesis in their plan of studies.

## Humanities (Graduate)

The graduate program in Humanities leads to the Master of Arts degree. Applicants should have a strong background in literature, history, philosophy, religion, or the arts, and be prepared to formulate and carry through, on an advanced level, the kind of integrative plans of studies suggested at the undergraduate level. Application for admission to the program and all inquiries concerning details of the program should be addressed to the Dean, School of Human Sciences and Humanities.

### Degree Requirements

The Candidate Plan of Studies will include a minimum of 30 semester hours' credit inclusive of Master's Degree Option 1 or 2, or a minimum of 36 hours inclusive of Option 4.

## Literature (Undergraduate)

The undergraduate program in literature leads to the Bachelor of Arts degree. Students entering the program may choose from a variety of curricular options ranging from an individualized plan of studies, designed to meet a student's particular interests and needs, to more traditional concentrations in American, English, European, or Comparative Literature.

Students interested in creative writing and/or journalism should be aware that courses in these areas are listed under Communications (COMM) and that they may be incorporated in a literature concentration.

Students who plan to teach English in secondary schools should select this program area.

For further information about the Programs in Literature, call or write the Director, Programs in Humanities.

### **Student Preparation**

There are no specific prerequisites for admission to the program other than intellectual curiosity, love of reading, and a strong foundation in English composition. Students who plan to teach English in secondary school should have dual advisement, both in their teaching field and in professional education.

### **Program Requirements**

Students who choose the American Literature option will explore native traditions in poetry, fiction, drama, biography and the essay. English Literature offers the full range of British and Irish works from the Middle Ages to the present. The Comparative Literature option allows students with strong literary inclinations to pursue the coordinated study of two or more national literatures. And, as pointed out above, students have the option of planning, with their advisor, concentrations around a central theme (e.g., women and literature).

Qualified students are encouraged to include the Undergraduate Honors Thesis in their Candidate Plan of Studies.

## **Literature (Graduate)**

The graduate program in literature leads to the Master of Arts degree. Students may study literature from the distant past to the immediate present, or they may specialize in the literature of a single period. They may choose to read widely in a number of literatures, spreading their course selections among American, British, Continental, and Russian authors, for example, or they may work intensively with the literature of a single nation--normally England or the United States.

Applicants for graduate degree candidacy in literature should have had considerable undergraduate training in literature. Students who lack a sufficient background may be required to take additional courses before admission to candidacy. Application for admission to the program and all inquiries concerning details of the program should be addressed to the Dean, School of Human Sciences and Humanities.

### **Degree Requirements**

Each Master's Degree Candidate in Literature creates his own Candidate Plan of Studies, with the assistance and approval of his faculty advisor. The plan must include a minimum of 30 semester hours' credit inclusive of Master's Degree Option 1 or 2, or a minimum of 36 hours inclusive of Option 4. For the successful completion of Option 1, the Master's Thesis, students will be expected to write an original essay in literary criticism and/or scholarship. Option 2, the Master's Project, offers students the choice of completing their degree by doing some other substantive, original work of a literary nature. Although normally this will be a piece of creative writing, such as a long short story, a one-act play, a collection of poems, etc., students may work out, in consultation with their faculty advisor, still other approaches to the Master's Project.

Wherever appropriate, students are encouraged to elect graduate courses in complementary disciplines (e.g. communications, history, anthropology, sociology, and psychology.)

All Master's degree candidates are required to pass a comprehensive examination. This examination will be designed to reflect and support the course of study the student has chosen.

## Theatre Arts (Undergraduate)

The undergraduate program in Theatre Arts leads to the Bachelor of Arts degree. As an area of study in the Humanities, the theatre program offers students the opportunity of combining through training in drama and dance with extensive work in literature, art, history, psychology, music, and/or other subjects of interest or relevance from the whole range of the University's course offerings.

Students may wish to enter the theatre program for various reasons: either because they are considering a career in drama and dance, arts, or because they are preparing to teach drama, or simply to be involved in the theatre for personal enrichment and pleasure.

Although the Theatre Arts program does not offer a graduate degree, qualified students have the option of earning graduate-level credit and applying it toward an M.A. in Humanities or Literature.

The program in Theatre Arts is being introduced in 1976-77 and will have at its disposal, in the new Bayou Building on the UH/CLC campus, a professionally equipped theatre facility with a large proscenium stage, scene and costume shops, and a house with a seating capacity of 510. Prospective students are invited to visit the theatre and discuss their academic and career plans with the staff.

For appointments and/or further information regarding the theatre program, call or write the Director, Programs in Humanities.

### Student Preparation

While there are no specific prerequisites for admission to the program, prospective students should have some experience or at least strong interest in theatre.

### Program Requirements

The courses and projects in theatre to be included in the Candidate Plan of Studies will be selected by the student and his or her advisor to reflect individual needs and programmatic objectives.

## Modern Languages (Undergraduate)

In 1976-77 no degree programs will be available in Modern Languages. Some courses will be offered in Spanish and Russian; if demand justifies, instruction in French, German, and possibly other languages may be introduced. The only degree program likely to be implemented in the foreseeable future is Spanish.

For additional information about Modern Languages at UH/CLC, call or write the Director, Programs in Humanities.

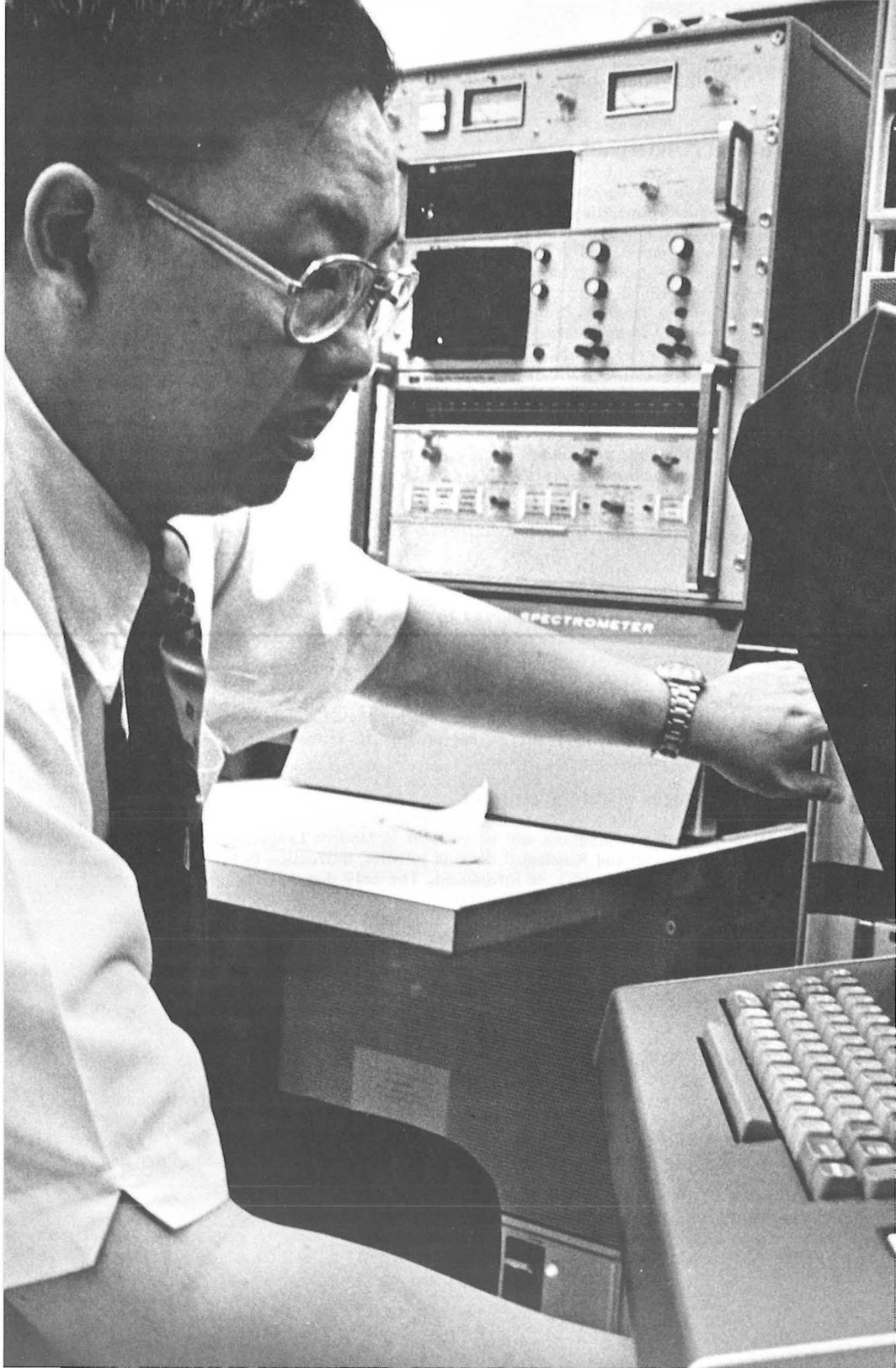
### \*Information Systems and Retrieval

### \*Linguistics

### \*Recreational Arts

\*Although courses will be offered in Linguistics and Communications, degree programs in the areas of Information Systems and Retrieval, Linguistics, and Recreational Arts may not be implemented until 1977-78.

For additional information about these programs, call or write the Director, Programs in Humanities.



# School of Professional Studies

The purpose of the School of Professional Studies is preparation for leadership in business, professional education, government, and society. The School is made up of three program clusters: (1) Business and Industry, (2) Professional Education, and (3) Public Affairs. Each program cluster consists of a complex of studies traditionally separated into discrete departments. The clusters are unified in their objective to provide specialized skills associated with the management and services of both public and private institutions.

In keeping with the philosophy of realistic preparation of students for employment, an effort is made to have close exchange between the programs and for larger community. Professionals in business, education, and government are invited to share their expertise with faculty and students; it is believed that active professionals have much to share with potential professionals.

## PROGRAMS IN BUSINESS AND INDUSTRY

Programs in Business and Industry are designed to prepare middle- and upper-level administrators and managers. Students may select one of the following concentrations: Accounting and Finance (BS, MS); Business and Industrial Management (BBA, MBA), or Transportation (B.S., M.S.). Specialization within these programs is possible to the extent described below under each program heading.

### Student Preparation (Undergraduate)

It is recommended that all degree-seeking students in the business and industry cluster of programs have completed the following in preparation for upper-level study:

Accounting Principles	6 semester hours
Behavioral Sciences	6 semester hours
Economic Principles	6 semester hours
Mathematics	6 semester hours
Natural Sciences	6 semester hours

Students who do not have the recommended preparation and who cannot demonstrate proficiency through examination may be required to take additional courses before enrolling for core or concentration requirements.

### Student Preparation (Graduate)

Students applying for graduate degree candidacies in the business and industry cluster should possess a bachelor's degree in the same or closely related field. Applicants whose undergraduate degrees are in fields other than business or related may apply, but preparatory work may be required before admission to candidacy. All students seeking a Master's degree must submit scores on the Graduate Management Admissions Test (GMAT). If the Graduate Record Exam (GRE) has previously been taken, this score may substitute for the GMAT score. Admission to candidacy is generally based on a GMAT score of 450 and a grade point average (GPA) of 2.50, where a GPA of 3.0 = B.

### Core Requirements (Undergraduate)

The courses below or their approved equivalents, constitute the required core. Students with excellent preparation, or those who demonstrate advanced proficiencies through special examination, may already have satisfied portions of these requirements.

ACCT	3331**	MGMT	3231
COMM	3133	MGMT	3232*
FINC	3131 or ECON 3331	MGMT	4132
FINC	3331	MGMT	4534
MGMT	3031	MKTG	3031
MGMT	3033	STAT	3231
MGMT	3131**	STAT	3232*

\*To be taken for Accounting and Finance concentrations only.

\*\*To be taken for concentrations other than Accounting and Finance.

## Accounting (Undergraduate)

A program in accounting, leading to the Bachelor of Science degree, is administered by the Director of Programs in Business and Industry in the School of Professional Studies. Students specializing in accounting follow a curriculum consistent with the guidelines of The Accounting Laws and Rules of the State of Texas, Board of Accountancy, as preparation for the C.P.A. examination.

### Concentration Requirements

The concentration consists of the following courses plus the number of semester hours in approved electives necessary to complete general degree requirements.

ACCT	3333	ACCT	4331
ACCT	3431	ACCT	4431
ACCT	3432	ACCT	4532

## Finance (Undergraduate)

A program in finance, leading to the Bachelor of Science degree, is administered by the Director of Programs in Business and Industry in the School of Professional Studies. Students specializing in finance are prepared for careers in commerce and industry calling for knowledge of the organization of financial aspects of the business world and the impact of monetary and fiscal policies on the business community.

### Concentration Requirements

The concentration consists of the following courses plus the number of semester hours in approved electives necessary to complete general degree requirements.

#### Concentration requirements

ACCT	3431
ACCT	3432
FINC	4332

6 semester hours of Finance electives

## Accounting (Graduate)

A program in Accounting, leading to the Master of Science degree, is administered by the Dean of the School of Professional Studies.

### Preparatory Requirements (or equivalent)

Students with undergraduate degrees in business may have satisfied many of these requirements:

ACCT	3431	FINC	5031
ACCT	3432	MGMT	5031
ACCT	4532	MGMT	5035
ACCT	5031	MKTG	5031
ECON	5031	STAT	5031

### Degree Requirements

The Candidate Plan of Studies will include a minimum of 30 semester hours of credit, inclusive of Master's Degree Option 1 or 2; or 36 semester hours, inclusive of Option 4, with specific requirements as follows:

ACCT	5132	ACCT	5332
ACCT	5331	ACCT	6731

The remaining hours will be elective hours, at least 6 of which must be in Accounting, exclusive of a thesis if that Option is chosen. A student whose previous work does not include ACCT 5131, or equivalent, may include this course as an Accounting elective.

### Finance (Graduate)

A program in Finance, leading to the Master of Science degree, is administered by the Dean of the School of Professional Studies.

#### Preparatory Requirements (or equivalent)

Students with undergraduate degrees in business may have satisfied many of these requirements:

ACCT	3431	MGMT	5031
ACCT	3432	MGMT	5032
ACCT	5031	MGMT	5035
ECON	5031	MKTG	5031
FINC	5031	STAT	5031

### Degree Requirements

The Candidate Plan of Studies will include a minimum of 30 semester hours credit, inclusive of Master's Degree Option 1 or 2; or, 36 semester hours, inclusive of Option 4, with specific requirements as follows:

Finance Concentration			Banking Option	
FINC	5131		FINC	6131
FINC	5133	or	FINC	6132
FINC	6731		FINC	6532

The remaining hours will be elective hours, at least 9 of which must be in Finance. If the Thesis Option is chosen, these 6 hours credit may be counted as Finance electives.

### Business and Industrial Management (Undergraduate)

A program in business and industrial management, leading to the Bachelor of Business Administration degree, is administered by the Director of Programs in Business and Industry in the School of Professional Studies. Students have the choice of pursuing a general business curriculum or specializing in the industrial, marketing, or personnel aspects of management.

### Concentration Requirements

The concentration consists of the courses from one of the following specialization groups plus the number of semester hours in approved electives necessary to complete general degree requirements.

#### General Business

Fifteen (15)  
semester hours  
of Business and  
Industry electives

#### Industrial

ACCT 3332  
MGMT 3332  
MGMT 4131  
MGMT 4332  
Business and Industry  
elective.

#### Marketing

MKTG 3131  
MKTG 3331  
MKTG 3531  
MKTG 4131  
MKTG 4631

#### Personnel

ECON 4331  
MGMT 3331  
MGMT 3531  
MGMT 4531  
Business and Industry  
elective

## Business and Industrial Management (Graduate)

A program in Business and Industrial Management, leading to the Master of Business Administration degree, is administered by the Dean of the School of Professional Studies.

### Preparatory Requirements (or equivalent)

Students with undergraduate degrees in business may have satisfied many of these requirements:

ACCT 5031	MGMT 5032
ECON 5031	MGMT 5035
FINC 5031	MKTG 5031
MGMT 5031	STAT 5031

### Degree Requirements

The Candidate Plan of Studies will include a minimum of 36 semester hours credit, inclusive of Master's Degree Option 1, 2, 3, or 4. The following courses are required of all candidates:

ACCT 5131	MGMT 5132
ECON 5136	MGMT 5431
FINC 5133	MGMT 6731
MGMT 5134	MKTG 5332

## Transportation (Undergraduate)

A program in Transportation, leading to the Bachelor of Science degree, is administered by the Director of Programs in Business and Industry in the School of Professional Studies. This concentration includes an analysis of the transportation services and management problems, with specific emphasis on pricing, financing, organization, of the five modes of transportation, and the regulation of transportation in our economy. The effective management of transportation involves a study of the components of physical distribution, logistics and its interaction with procurement, the level and control of inventories, warehousing, material handling, transport and data processing.

The curriculum in transportation is designed to prepare students to assume responsible positions with carriers, government agencies, traffic and physical distribution management in industry.

### Concentration Requirements

The concentration consists of the following courses plus the number of semester hours in approved electives necessary to complete general degree requirements.

TRAN	3131	6 semester hours of
TRAN	4332	Transportation electives
TRAN	3132 or 4731	

### Transportation (Graduate)

A program in Transportation, leading to the Master of Science degree, is administered by the Dean of the School of Professional Studies. The program is designed to prepare students for managerial and executive positions in transportation. Maximum flexibility is allowed in that the student may concentrate during the latter part of his program in either the physical distribution/logistics or the transportation systems aspect of the industry. The program also serves as a function for pursuit of doctoral programs in the field of transportation.

### Preparatory Requirements (or equivalent)

Students with undergraduate degrees in business may have satisfied many of these requirements:

ACCT	5031	MGMT	5032
ECON	5031	MGMT	5035
FINC	5031	MKTG	5031
MGMT	5031	STAT	5031

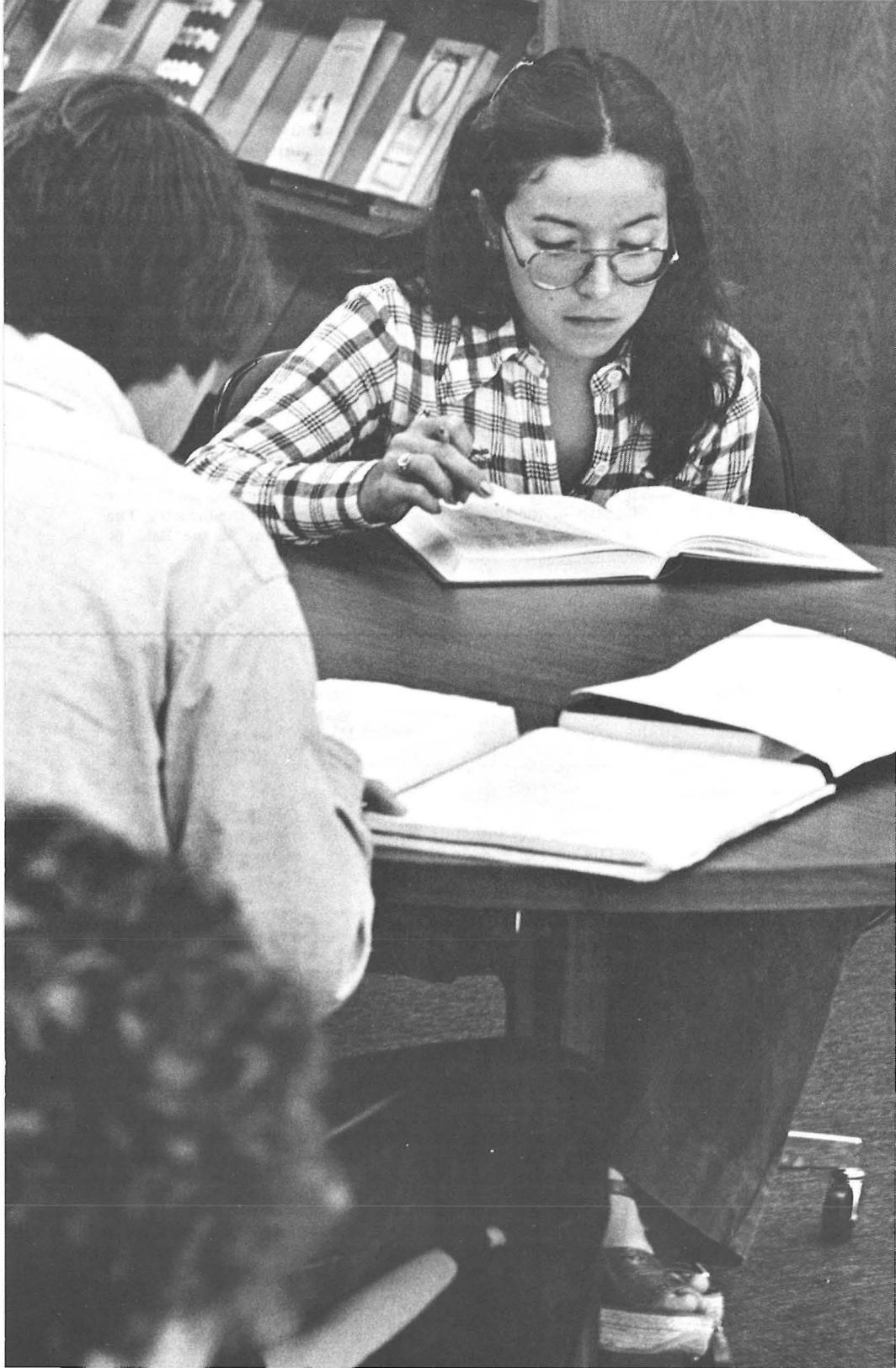
### Degree Requirements

The Candidate Plan of Studies will include a minimum of 30 semester hours credit, inclusive of Master's Degree Option 1 or 3; or 36 semester hours, inclusive of Option 4. The following courses are required of all candidates:

TRAN	5332	6 semester hours
TRAN	5133	selected from
TRAN	5331	TRAN 6733, 6734,
		6735, 6736, 6731,
		or 6931

If Option 4 is chosen, the student must choose 9 semester hours from the following list, in addition to the 15 semester hours required above:

TRAN 4331, 4332, 5131, 5132, 5331, 5531, 6734, 6735, 6736, 6731, GEOG 5334.



## PROGRAMS IN PROFESSIONAL EDUCATION

Programs in professional education offer preparation in the academic and teaching specialties requisite to careers ranging from kindergarten through junior college levels of teaching and administration. The objective is to provide future and practicing educators with the highest professional qualifications. Through on-campus classroom and laboratory activities and off-campus field experiences, it is anticipated that students in the teacher preparatory programs will acquire the intellectual competencies, professional attitudes, and technical skills for effective teaching.

Undergraduate students may select from a variety of areas of specialization in both elementary and secondary education. Students who have or who are qualifying for provisional certificates may qualify for bilingual endorsements, kindergarten endorsements, and language/learning disabilities endorsements. Graduate students with provisional certificates may qualify for advanced certificates while meeting requirements for the master's degree or they may enter master's degree programs not related to certification.

All programs in professional education are under the supervision of the Director of Programs in Professional Education. Questions and correspondence about these programs should be addressed to the Director.

### Preparation for Teaching Elementary Level

Students preparing to teach at the elementary level are expected to have a broad understanding of cultural heritage and of the physical and social development of children. In addition to these foundations, the student is expected to become proficient in professional aspects of teaching and to select areas of specialization and support to accompany the foundation and professional training. Areas of specialization available to students working toward elementary certificates include bilingual teaching, biology, earth science, English, geography, government, health education, history, life/earth middle school science, mathematics, psychology, reading, sociology, and Spanish.

#### Undergraduate Students

A concentration in elementary education, leading to the Bachelor of Science degree and qualifying a successful student for a provisional certificate, is administered by the Director of Programs in Professional Education. The program has been prepared within the guidelines of the Texas Education Agency.

#### Student Preparation

The academic foundation which every student is expected to have before entering the elementary education program corresponds to the core curriculum prescribed by the Coordinating Board, Texas College and University System, for junior college students in the arts and sciences preparing to transfer to a senior college or university. The following are suggested as an appropriate preparation.

English	12 semester hours
History	6 semester hours
Government	6 semester hours
Mathematics for Teachers	6 semester hours
Science or Foreign Language	6 semester hours from one
Fine Arts or Classics	3 semester hours
Behavioral Sciences	6 semester hours
Multicultural Studies	3 semester hours
Oral Communications	3 semester hours

In addition to this preparation, students are encouraged to earn an additional 9 to 12 semester hours in one of the areas of specialization for elementary education. Students who

do not meet all of the recommended lower division preparation and who cannot demonstrate proficiency through special examination may be required to take additional courses before being approved for teacher education.

### Professional Courses

The professional courses for students preparing for careers in elementary education are the following.

EDUC	30v1	ELEM	3361
ELEM	3131	ELEM	3391
ELEM	3331	ELEM	3561
ELEM	3332		

### Areas of Specialization

Most of the areas of specialization for elementary education have options and special requirements; a total of 18 to 24 semester hours (at least half of which must be in upper-level courses) constitutes an area of specialization. Since individuals vary widely in previous preparation and in fields of interest, the requirements and options for each specialization area will not be given here. Students are urged to discuss areas of specialization with advisors at the University in order to determine precise requirements.

### Support Areas

A total of 12 to 18 semester hours are required in educational support areas. GEOG 3137 or its equivalent and READ 4131 are required of all students; other support areas include earth science, economics, geography, health education, linguistics, psychology, reading, sociology, and courses for elementary teachers in art, music, and physical education.

### Completion of the Program

After being accepted for matriculation as an undergraduate, a student must be admitted to candidacy for the program in elementary education. Individuals having the recommended academic foundations and meeting the general requirements for matriculation may be admitted to degree candidacy in elementary education.

After admission to degree candidacy, each student must make formal application for teacher education; information and forms are available in the Office of the Director of Programs in Professional Education. During the first full semester (or first nine hours of course work attempted), the student must maintain a grade point average of 3.00 (b = 3.00) in all professional education courses, including EDUC 30v1, and a grade point average of 2.50 in the academic specialization area. Grades lower than C in professional courses do not satisfy certification requirements. Students who maintain high standards of academic performance in the program will be permitted to remain in candidacy and in teacher education. Students who complete all requirements will be recommended to the Texas Education Agency for certification.

### Graduate Students

It is possible that individuals who already possess a bachelor's degree in a field other than elementary education will wish to satisfy certification requirements of the Texas Education Agency. A sequence of courses which will meet these requirements is administered by the Director of Programs in Professional Education. A maximum of 30 semester hours of course work in professional education and the development of a teaching field are required to prepare such persons as elementary teachers. This mode of qualifying for elementary certification does not lead to a master's degree and the courses taken strictly

for certification are not necessarily applicable to a graduate degree. Students who wish to qualify for an elementary certificate in this manner must have maintained a minimum grade point average of 2.50 (B = 3.00) in the last 60 semester hours of course work.

The courses taken in qualifying for a provisional certificate at the elementary level by graduate students are selected from the following list.

EDUC	4131	*ELEM	5131	ELEM	6331
EDUC	5031	*ELEM	5132	HLTH	6031
EDUC	6031	*ELEM	5133	PSYC	5031 or 5033
EDUC	6332	ELEM	57v9	READ	4533
EDUC	6333				

For students without teaching experience, ELEM 57v9 is required.

\*Required methods courses

## Certificate Endorsements

Teachers who already possess provisional certificates may add endorsements through sequences of courses which will meet requirements of the Texas Education Agency. Course work leading to these endorsements is administered by the Director of Programs in Professional Education. Qualifying for endorsements does not lead to a master's degree; individuals who wish endorsements as additions to baccalaureate programs or in conjunction with earning the master's degree should determine precise requirements for such combinations through conference with an advisor.

## Bilingual Endorsement

Individuals seeking the bilingual endorsement must demonstrate written and oral proficiency in Spanish and English. The requirement for endorsement is 24 semester hours, including a practicum in a bilingual setting for those without teaching experience. All students must take LING 4331: Teaching English as a Second Language. The remaining hours are to be selected, with consent of the advisor, from the following list of courses to include three hours from each of the components.

### Foundation Component

BLNG	4931
EDUC	3531
EDUC	5031
EDUC	5032
EDUC	5731
SOCI	5331

### Linguistics Component

LING	4331
LING	5031
LING	5032

### Methodology Component

BLNG	5032
BLNG	5931
EDUC	4131
EDUC	4931
EDUC	5132

### Psychological Component

BLNG	5031
PSYC	4134
PSYC	4135
PSYC	4931
PSYC	5031

### Cultural Component

EDUC	3531
EDUC	5331
LITR	4331
LITR	5731
SOCI	4532
SPAN	4032
SPAN	4331
SPAN	4332

## Kindergarten Endorsement

### Undergraduate Students:

Individuals who wish to qualify for an elementary provisional certificate and kindergarten endorsement must

- complete all requirements for an elementary provisional certificate with three hours in student teaching (ELEM 3731);
- complete all requirements for kindergarten endorsement with three hours in student teaching (ECED 3731). The kindergarten endorsement requirement comprises 12 semester hours in early childhood courses including ECED 4031: Teaching Preschool Children. Other courses applicable to the endorsement include the following:

ECED	4032	ECED	4132
ECED	4131	ECED	4931

### Graduate Students:

Individuals who already possess a provisional certificate and are seeking the kindergarten endorsement need a total of 18 semester hours, including ECED 5031: Teaching Young Children and ECED 57v9 (practicum in a kindergarten setting for those without teaching experience). Other courses applicable to the endorsement include the following:

ECED	5032	ECED	5331
ECED	5131	ECED	5931
ECED	5132	ECED	59v9

## Early Childhood Education for Exceptional Children Endorsement

Individuals holding the LLD endorsement will complete the ECED component; those holding the kindergarten endorsement will complete the LLD component to qualify for certification in Early Childhood Education for Exceptional Children. Prerequisites to this endorsement are a bachelor's degree and an elementary teaching certificate.

All students must complete 12 semester hours in ECED courses and 12 semester hours in DIAG courses, including ECED 57v9 or DIAG 57v9 (practicum in a kindergarten or Diagnostic setting for those without teaching experience) selected from the following:

*ECED	5031	*ECED	5132	or	DIAG	5032	ECED	5931
*DIAG	5031	-ECED	5032	or	DIAG	5331	ECED	59v9
*DIAG	5133	ECED	5331	or	DIAG	5131	DIAG	5931
		ECED	5131	or	DIAG	5132	DIAG	59v9

\*Required courses

## Language/Learning Disabilities Endorsement

### Undergraduate Students:

Individuals who wish to qualify for an elementary provisional certificate and language/learning disabilities endorsement must

- complete all requirements for an elementary provisional certificate with three hours in student teaching (ELEM 3731);
- complete all requirements for L/LD endorsement with three hours in student teaching (DIAG 3731). The L/LD endorsement requirement comprises 12 semester hours in diagnostic courses, including DIAG 4031 and DIAG 4032. Other courses applicable to the endorsement include the following:

DIAG 4131  
DIAG 4132

DIAG 4133  
DIAG 4931

#### Graduate Students:

Individuals who already possess a provisional certificate and are seeking the language/learning disabilities endorsement need a total of 18 semester hours, including DIAG 5031, DIAG 5032, and DIAG 57v9 (practicum in a diagnostic setting for those without teaching experience). Two courses, or their equivalents, are prerequisite to work toward the endorsement: PSYC 5031 and PSYC 5034. Other courses applicable to the endorsement include the following:

DIAG 5131  
DIAG 5132  
DIAG 5133

DIAG 5331  
DIAG 5931  
DIAG 59v9

#### Library Science Endorsement

Individuals seeking the library science endorsement need both a bachelor's degree and a Texas teaching certificate. They must complete 18 semester hours of specialized work, including 3 semester hours in school library practice. Prerequisite to certification is READ 4532 or READ 4533 or an equivalent.

Courses applicable to certification are the following:

ADMN 6334  
EDUC 4132  
LIBR 6131

LIBR 6132  
LIBR 6133  
LIBR 6739

This endorsement is intended for students who plan careers as school librarians. Students who plan careers in other library settings should seek special advisement.

### Advanced Programs: Elementary Level

Graduate students have available two opportunities to earn the master's degree in elementary education. Experienced elementary teachers may wish to earn the master's degree and to qualify for the professional certificate in elementary education in a single sequence of courses; others will wish to earn the master's degree without satisfying special requirements for an advanced certificate. Students are urged to discuss educational objectives with an advisor before making a choice in order to avoid non-applicable courses.

#### Master's Degree and Professional Certificate

A concentration in elementary education, leading to the Master of Science degree, is administered by the Director of Programs in Professional Education and the Dean of the School of Professional Studies. The program is intended to provide training at an advanced level in elementary education and to qualify students having the provisional certificate and a minimum of three years teaching experience for the professional certificate.

Applicants for candidacy must have an appropriate background in elementary education, areas of specialization, and related fields. Admission to candidacy for the M.S. degree with concentration in elementary education is restricted to students with a minimum grade point average of 3.00 (B = 3.00) in the last 60 semester hours of course work.

This program requires a total of 36 semester hours of credit, including Option 4, from the University's general requirements for the master's degree. A total of 12 semester hours are to be selected from the area of specialization of the undergraduate degree: English, geography, government, history, mathematics, psychology, reading, sociology, or Spanish. Three hours must be selected from a resource area such as the humanities, the behavioral sciences, or multicultural studies. Nine hours are to be selected from the following professional methods courses.

EDUC	6332	ELEM	6331
ELEM	5131	HLTH	6031
ELEM	5132	PSYC	5033
ELEM	5133	READ	4533

Courses required of all candidates are EDUC 6132, EDUC 6333, EDUC 6531, and either PSYC 5031 or PSYC 5132. All candidates are required to perform at a satisfactory level on a comprehensive examination.

### Master's Degree in Elementary Education

A concentration in elementary education, leading to the Master of Science degree, is administered by the Director of Programs in Professional Education and the Dean of the School of Professional Studies. The program is intended to provide a comprehensive graduate specialization in elementary education, including the application of theory to classroom situations. Although it is anticipated that the majority of students will have backgrounds in elementary education, students with undergraduate degrees in other fields may enter the program. Individuals with minimal previous training in education may be required to complete preparatory work prior to achieving candidacy. Admission to candidacy for the degree is restricted to students with a minimum grade point average of 3.00 (B = 3.00) in the last 60 semester hours of course work.

The Candidate Plan of Studies will include 36 semester hours of credit, including Master's Degree Option. Students must earn 12 hours in courses chosen with the consent of the advisor; these courses are to be related to the student's specific interests in elementary education. An additional 12 hours must be earned in EDUC 6132, EDUC 6333, EDUC 6531, and either PSYC 5031 or PSYC 5132.

If Option 2 is chosen, at least 6 hours must be earned in EDUC 59v9: Problems in Educational Diagnostics, or ECED 59v9: Problems in Early Childhood Education. If Option 4 is chosen—a student in Education is satisfying requirements for certification. A student must complete 6 semester hours of course work in graduate courses approved by the appropriate Dean.

### Preparation for Teaching: Secondary Level

Students preparing to teach at the secondary level are expected to have strong academic backgrounds in their teaching fields, proficiency in professional aspects of teaching, and directed field experiences in the classroom setting. Areas of specialization available to students working toward secondary certificates in 1976-77 include biology, chemistry, earth science, economics, English, geography, government, health education, history, life/earth middle school science, mathematics, physical sciences, physics, psychology, reading, science (composite), social science, sociology, and Spanish.

### Undergraduate Students

Students who wish to prepare for careers as secondary teachers are expected to become candidates for the bachelor's degree in one or more subject matter fields and to qualify for the teaching certificate by meeting the requirements of the Texas Education Agency. All students who wish to become secondary teachers will have dual advisement; the professional education elements are administered by the Director of Programs in Professional Education while the academic areas are administered by the appropriate Program Directors. The professional education sequence for secondary education students has been prepared within the guidelines of the Texas Education Agency.

## Student Preparation

The academic foundation which every student is expected to have before entering the secondary education sequence corresponds to the core curriculum prescribed by the Coordinating Board, Texas College and University System, for junior college students in the arts and sciences preparing to transfer to a senior college or university. The following are suggested as an appropriate preparation.

English	12 semester hours
History	6 semester hours
Government	6 semester hours
Mathematics, Science or Foreign Language	12 semester hours from two
Fine Arts and Classics	3 semester hours
Behavioral Sciences	6 semester hours
Multicultural Studies	3 semester hours
Oral Communications	3 semester hours

In addition to this preparation, students are encouraged to have earned at least twelve additional hours in each of two of the areas of specialization for secondary teachers. Students who have not had all of the recommended preparation and who cannot demonstrate proficiency through special examination may be required to enroll in additional courses before being approved for teacher education.

## Professional Courses

The professional courses for students preparing themselves for secondary education are EDUC 30v1, SCED 3161, and SCED 3561.

## Areas of Specialization

For secondary education, each area of specialization consists of a minimum of 24 semester hours in an academic area. Students are expected to have two areas of specialization, except for a few areas where a single broad field of specialization of a minimum of 48 hours is acceptable. Since areas of specialization have specific requirements and since individual students vary widely in a previous preparation, the requirements for each area of specialization are not given here. Students are urged to discuss areas of specialization with both academic and professional education advisors in order to determine precise requirements.

## Qualifying for Certification

After being accepted for matriculation as an undergraduate, a student must be admitted to candidacy for the degree program in an academic specialty. Individuals having the recommended academic foundations may enroll in professional education courses as soon as the Candidate Plan of Studies is approved by the education advisor. After being admitted to degree candidacy, each student must make formal application for teacher education; information and forms are available in the Office of the Director of Programs in Professional Education. During the first full semester (or first nine hours of course work attempted), the student must maintain a grade point average of 3.00 (B=3.00) in all professional education courses, including EDUC 30v1, and a grade point average of 2.50 in both academic areas. Grades lower than C in professional courses do not satisfy certification requirements. Students who maintain high standards of academic performance in the program will be permitted to remain in teacher education. Students who complete all requirements will be recommended to the Texas Education Agency for certification.

## Graduate Students

It is possible that individuals who already possess a bachelor's degree in an academic field will wish to satisfy certification requirements of the Texas Education Agency. A sequence of courses which will meet those requirements is administered by the Director of Programs in Professional Education. A total of 18 semester hours of course work in professional education is required in addition to such courses as may be necessary in order to develop two areas of specialization. This mode of qualifying for secondary certification does not lead to a master's degree, and the courses taken strictly for certification are not necessarily applicable to a graduate degree. Students who wish to qualify for a secondary certificate in this manner must have maintained a minimum grade point average of 2.50 (B=3.00) in the last 60 semester hours of their course work.

The professional courses to be taken in qualifying for a provisional certificate at the secondary level by graduate students are selected from the following:

EDUC	4131	PSYC	5031 or
EDUC	5031	PSYC	5034 or
EDUC	6031	PSYC	5132 or
EDUC	6332	PSYC	5331
EDUC	6333	SCED	5031
		SCED	57v9

For students without teaching experience, SCED 57v9 is required.

## Advanced Programs: Secondary Level

Graduate students have two modes for earning the master's degree in secondary education. Experienced high school teachers may wish to earn the master's degree and to qualify for the professional certificate in secondary education in a single sequence of courses; other students may wish to earn the master's degree without satisfying special requirements for advanced certificate. Students are urged to discuss educational objectives with an advisor before making a choice in order to avoid non-applicable courses.

### Master's Degree and Professional Certificate

A concentration in secondary education, leading to the Master of Arts degree, is administered by the Director of Programs in Professional Education and the Dean of the School of Professional Studies. The program is intended to provide training at an advanced level in secondary education and to qualify students having the provisional certificate and a minimum of three years of successful teaching experience for the professional certificate.

Applicants for candidacy are expected to show evidence of the ability to do graduate work and must have an appropriate background in professional education, areas of specialization, and related fields. Admission to candidacy for the M.A. degree with concentration in secondary education is restricted to students with a minimum grade point average of 3.00 (B=3.00) in the last 60 semester hours of course work.

This program requires a total of 36 semester hours of credit, including Option 4, from the University's general requirements for the master's degree. A total of 18 semester hours is to be selected from one of the specializations of the undergraduate degree: economics, English, geography, government, history, psychology, reading, social sciences, sociology, or Spanish. Six hours must be selected from the resource areas of humanities, the behavioral sciences, or multi-cultural studies. Twelve hours are required of all candidates in EDUC 6132, EDUC 6333, EDUC 6531, and either PSYC 5031 or PSYC 5132. All candidates are required to perform at a satisfactory level on a comprehensive examination.

### Master's Degree in Secondary Education

A concentration in secondary education, leading to the Master of Arts degree, is administered by the Director of Programs in Professional Education and by the Dean of the School of Professional Studies. The program is designed to provide a strong graduate

specialization in secondary education, including the application of educational theory in learning situations.

Although it is anticipated that most students will have backgrounds in secondary education, students with training for other fields may enter the program. Individuals with minimal previous training in education may be required to complete preparatory courses prior to achieving candidacy. Admission to candidacy for the degree is restricted to students with a minimum grade point average of 3.00 (B=3.00) or higher on the last 60 semester hours of course work attempted.

The Candidate Plan of Studies will include a minimum of 36 semester hours of credit, including Master's Degree Option. Students must earn 12 hours in courses chosen with the consent of the advisor; these courses are to be related to the student's specific interests in secondary education. An additional 12 semester hours must be earned in EDUC 6132, EDUC 6333, EDUC 6531, and either PSYC 5031 or PSYC 5132.

If Option 2 is chosen, at least 6 hours must be earned in EDUC 59v9: Problems in Education, or BLNG 59v9: Problems in Bilingual Education, or DIAG 59v9: Problems in Educational Diagnostics. If Option 4 is chosen—a student in Education is satisfying requirements for certification. A student must complete 6 semester hours of course work in graduate courses approved by the appropriate Dean.

### Master's Degree in Education with Specialization in Futures Studies

This interdisciplinary program integrates the study of alternatives in education with societal/global futures. Although it is anticipated that most students will have backgrounds in education, students with preparation in other fields may enter the program. Some individuals with minimal experience in education may be required to complete preparatory courses prior to achieving candidacy. Admission to candidacy for the degree is restricted to students with a minimum grade point average of 3.00 (B=3.00) or higher on the last 60 semester hours of course work attempted.

The Candidate Plan of Studies will normally encompass 36 semester hours of credit including Master's Degree Option. Students must complete 12 semester hours in core courses. An additional 18 hours may be selected from a broad range of courses. Some of these options are listed as follows:

ANTH	5531	GOVT	5532	SOCI	4334
ECON	6332	HIST	6131	SOCI	6333
EDUC	5031	LITR	4536	SOCI	6332
EDUC	6731	LITR	5134	SOCI	6334
EDUC	5531	RSCE	5531	URBN	6131
EDUC	6733	SOCI	4136	SOCI	6731

Students with a specialization in Futures Studies may select Option 1 (thesis) or Option 2 (project) and complete a minimum of 36 semester hours. If Option 1 is chosen, at least 6 semester hours of credit are required in EDUC 6939: Master's Thesis Research, followed by successful defense of the thesis. If Option 2 is chosen, at least 6 hours must be taken in EDUC 59v9: Problems in Education. Each candidate is required to perform at a satisfactory level on a comprehensive examination.

### Preparation for College Teaching

Two master's degree objectives are available in higher education; both are administered by the Director of Programs in Professional Education and the Dean of the School of Professional Studies. The program leading to the Master of Arts degree is designed to serve needs of instructors in community colleges who desire graduate training in a specific teaching field in conjunction with professional education courses related to junior college

teaching. The program leading to the Master of Science degree is designed for the individual who wishes to earn a master's degree with the academic specialty in higher education.

### Master of Arts in College Teaching

Applicants for candidacy for the M.A. degree with a concentration in college teaching must have an appropriate background in an academic teaching specialty. Admission to candidacy for the M.A. degree is restricted to students with a minimum grade point average of 3.00 (B=3.00) on the last 60 semester hours of course work.

The program requires a total of 36 semester hours, including the student's choice of either Option 1 (thesis), Option 2 (project), or Option 3 (internship) from the University's general requirements for the master's degree. The Candidate Plan of Studies must include 18 hours of graduate credit from a selected academic teaching field; 12 semester hours are required in EDUC 6132, EDUC 6333, EDUC 6531, and PSYC 5132.

The required 6 semester hours for the Master's Degree Option may be satisfied by EDUC 6939: Master's Thesis Research, followed by a successful defense of the thesis, for students who choose Option 1. If Option 2 is chosen, at least 6 hours must be taken in EDUC 59v9: Problems in Education. Students who choose Option 3 may satisfy this 6-hour requirement by successful completion of HRED 6731: Seminar in Higher Education and HRED 6739: Internship in Higher Education. All candidates are required to perform at a satisfactory level on a comprehensive examination.

### Master of Science in College Teaching

Applicants for candidacy for the M.S. degree with concentration in college teaching are expected to have earned a minimum grade point average of 3.00 (B=3.00) on the last 60 semester hours of course work. Although it is anticipated that the majority of students will have backgrounds in education, students with undergraduate training in other fields may enter the program. Individuals who have a minimum of previous training in education may be required to complete preparatory work before they can achieve candidacy for the degree.

The Master of Science degree with concentration in college teaching requires a minimum of 36 semester hours of credit. The following 12 semester hours is required of all candidates: EDUC 6132, EDUC 6333, EDUC 6531, and PSYC 5132. An additional 12 semester hours of related courses are to be selected from the following courses:

EDUC	5031	GOVT	6032	HRED	6332
EDUC	5131	HIST	5132	HRED	6731
EDUC	5331	HRED	6131	LEGL	6131
EDUC	6534	HRED	6132	SOCI	5031
EDUC	6731	HRED	6331	SOCI	5131

Students who are candidates for the M.S. degree in college teaching may select Option 1 (thesis), Option 2 (project), or Option 3 (internship). If Option 1 is chosen, at least 6 hours of credit is required in EDUC 6939: Master's Thesis Research, followed by a successful defense of the thesis. If Option 2 is chosen, at least 6 hours must be taken in EDUC 59v9: Problems in Education. Students who choose Option 3 (internship) may satisfy this 6-hour requirement by successful completion of HRED 6731: Seminar in Higher Education and HRED 6739: Internship in Higher Education. All candidates are required to perform at a satisfactory level on a comprehensive examination.

## Educational Management

Educational management focuses on the diverse problems of administration of contemporary educational institutions of all types. Management, supervision, personnel, and fiscal operations are areas of program emphasis.

## Master of Science in Educational Management

Although it is anticipated that the majority of students will have backgrounds in education, students with undergraduate training in other fields may enter the program. Admission to candidacy for the M.S. degree is restricted to students with a minimum grade point average of 3.00 (B=3.00) on the last 60 semester hours of course work.

The program requires a total of 36 semester hours, including Option 1 (thesis), Option 2 (project), Option 2 (internship), or Option 4 (extended course work) from the University's general requirements for the master's degree. The following 12 semester hours are required of all candidates: EDUC 6132, EDUC 6333, EDUC 6531, and either PSYC 5031 or PSYC 5132. An additional 18 hours are to be selected from graduate courses designed to develop administrative competencies and understandings in administrative theory and practice, curriculum theory, and school business management. A minimum of 9 hours from this group of 18 hours must be earned in advanced courses from such academic areas as business administration, computer science, economics, psychology, or sociology. In addition to all other requirements, candidates must perform at a satisfactory level on a comprehensive examination.

## Education-Related Sciences

The program in education-related sciences (philosophy of education, educational psychology, educational sociology, and educational technology) examines modern-day educational institutions, public and private, from elementary school through university. The latest technological and pedagogical advances are studied and applied, with opportunity for in-service training, special workshops, and consultative activity.

### Master of Science in Education-Related Sciences

Applicants for candidacy for the M.S. degree are expected to have earned a minimum grade point average of 3.00 (B = 3.00) on the last 60 semester hours of course work. The concentration in education-related sciences requires a minimum of 30 semester hours of credit, including the Master's Degree Option. The following 12 semester hours are required of all candidates: EDUC 6132, EDUC 6333, EDUC 6531, and either PSYC 5031 or PSYC 5132.

Candidates for the M.S. degree may select either Option 1 (thesis) or Option 2 (project) from the University's general requirements for the master's degree. All candidates are required to perform at a satisfactory level on a comprehensive examination.

## Professional Certification

Professional certification requires a master's degree. Individuals seeking professional certification in Educational Diagnostics, Mid-Management (Principal), Supervision, or Reading may apply the requirements for certification towards a master's degree.

### Certification for Educational Diagnostics

Individuals seeking professional certification as educational diagnosticians need a total of 36 semester hours, including an internship, in a concentrated evaluative setting. Prerequisites include a special education certificate, a minimum of three years' teaching experience, and DIAG 5131 or its equivalent. Required courses are as follows:

DIAG	5531		DIAG	67v9		PSYC	6031
DIAG	6531		PSYC	5132			
DIAG	5031	or	PSYC	5131			
DIAG	5032	or	PSYC	5531			
PSYC	5034	or	PSYC	5331			
ECED	5331	or	PSYC	5031	or	PSYC	6132
EDUC	6131	or	EDUC	5132	or	EDUC	5731

An additional 6 semester hours are to be selected from the following:

DIAG	5132	EDUC	5331		
DIAG	5133	EDUC	5033	or	ELEM 5131

Appropriate course substitutions may be made, depending upon student background. If courses are selected judiciously, students may become eligible to take the examination for psychological associates. Students wishing to apply the Educational Diagnostician Certificate courses to a master's degree must complete EDUC 6333 and EDUC 6531 as a part of the program.

#### Certification for Mid-Management (Principal)

Individuals who wish to enter a program for certification in mid-management (principal) must have a Texas teaching certificate, a bachelor's degree, and a minimum of two years' creditable classroom teaching experience. They must complete a master's degree, a certificate program, and an approved administrative internship prior to certification.

The mid-management certificate program consists of 45 semester hours of graduate credit (applicable to a master's degree). Course work includes 18 semester hours of approved core courses such as the following:

ADMN	6131	EDUC	6231	or	EDUC	6232
ADMN	6332	EDUC	6535		LEGL	6131
					MGMT	5034

Nine to 12 additional semester hours of graduate credit must be earned in academic areas of study such as anthropology, sociology, economics, psychology, business administration, or a computer science.

Specialized preparation for principals includes 15 to 18 hours from the following:

ADMN	5931	ADMN	6431	or	ADMN	6432
ADMN	6132	EDUC	6334		READ	5132
ADMN	6333	HMRS	5132	or	HMRS	5731

Three or 6 semester hours of graduate credit must be earned in an approved internship (ADMN 6739). A student wishing to receive a Master's Degree and Mid-Management certification must complete all requirements for the Master's Degree and the certificate (48 semester hours).

#### Certification for Supervision

Students desiring certification as supervisors must meet the requirements for a master's degree, for professional certification, and have three years of successful classroom teaching experience. Course work includes 9 semester hours in the area of leadership for instructional improvement selected from the following:

EDUC	6031	EDUC	6431	EDUC	6432
EDUC	6032	EDUC	6231	EDUC	6232

An additional 21 semester hours are to be earned from graduate courses in resource areas selected from courses such as the following:

EDUC	5031	EDUC	5731	or	EDUC	5033
EDUC	6033	EDUC	6332	or	EDUC	6535
EDUC	6132	PSYC	5031	or	PSYC	5132
EDUC	6333	SOCI	6133	or	SOCI	5331
EDUC	6335	EDUC	6531		SOCI	5333

Specialization courses required include EDUC 6332 and EDUC 6533 or 6 hours in Academic field.

### Certification for Reading Specialist

Individuals seeking professional certification as reading specialists must meet the requirements for a master's degree and have three years of successful classroom teaching experience.

The program requires a total of 36 semester hours of credit. A student wishing to qualify as a reading specialist must complete 18 semester hours in the academic specialization area, including 6 hours selected from DIAG 5133, READ 5132, and READ 6131, and 12 hours from the following:

READ	5031	READ	6731		
READ	5133	READ	5931	or	READ 6732

Nine semester hours must be selected from the following resource areas:

LING	4331	LITR	5731	or	SOCI 5731
READ	4531				

An additional 9 semester hours must be selected from the following professional education courses.

EDUC	4131	READ	4532	or	READ 4533
EDUC	5031				

### Teacher Center

The Teacher Center is a confederation composed of designated representatives from the University of Houston at Clear Lake City, the professional organizations, and the following 16 independent school districts: Alvin, Brazosport, Clear Creek, Deer Park, Dickinson, Friendswood, Galena Park, Galveston, Goose Creek, Hitchcock, LaMarque, LaPorte, Pasadena, Pearland, Santa Fe, and Texas City. This body determines policy and procedures for observation in the public school classrooms, internships, and the student teaching program.

## PROGRAMS IN PUBLIC AFFAIRS

The seven interdisciplinary professional programs offered in Public Affairs are based on the belief that public decision makers share with their business colleagues a need for the managerial skills required to administer most organized enterprises. Beyond this commonality, however, lies a critically unique imperative--the new generation of public executives must have a broad knowledge of the political process and must be able to anticipate and solve the increasingly complex problems that affect society. As students sharpen their decision-making tools, so too must they develop special abilities to enhance the quality of public services through responsive, concerned and creative administration. The aim of all programs in Public Affairs is then to engender within its students not only an understanding of basic managerial skills but also an appreciation of the social, economic, and political environment of public affairs.

Each plan of study, through the core curriculum, provides a common framework basic to the study of Public Affairs. In addition, students are allowed considerable flexibility in molding their programs--with the assistance of a faculty advisor--to their individual needs and interests. Research and training in research are fundamental in all graduate programs.

Applicants for candidacy to any graduate program in Public Affairs, must submit their scores on the Graduate Record Examination. Plans of study will not be developed until a student has complied with this requirement. Students who have more than 24 hours of graduate level work at an accredited institution in a relevant field are exempt from this requirement. This test is used as a part of the process by which candidates are selected and is considered one element of evidence of an applicant's ability to do graduate work. In most cases, an overall undergraduate grade point average of 2.50 (B=3.00) or a 2.75 average for the last 60 hours work, is expected of all applicants.

All programs in public affairs are under the supervision of the Director of Programs in Public Affairs and the Dean of the School of Professional Studies.

## Administration of Health Services (Undergraduate)

The undergraduate program in the administration of health services leads to the Bachelor of Science degree. The objective of the program is to develop the student's managerial skills and abilities and also to provide special knowledge and competencies for enhancing the quality of patient care and the delivery of health care services in a variety of settings to include hospitals, nursing homes and other extended care facilities, health departments, planning agencies, health maintenance organizations and other types of medical group practice and ambulatory care systems, and mental health institutions and agencies.

The curriculum includes study in hospital and health services administration, business administration, and public health. To develop the student's understanding of the environment in which health institutions and agencies function, practical work in public administration and social policy is included.

### Degree Requirements

Requirements for the bachelor's degree include at least the following 45 hours of course work or their approved equivalents.

ACCT	3033	ADHS	4531	GOVT	4531
ADHS	3131	ADHS	4731	MKTG	4332
ADHS	37v9	BIOL	3335	SOCI	3531
ADHS	4132	GOVT	3031	SOCI	3535
ADHS	4332	GOVT	3532	STAT	3231

In addition to these courses, the student must take sufficient elective work to meet the University's General Requirements for the Bachelor's Degree. In the event a student's background is weak in the areas of accounting, economics, computer science, or statistics, the faculty advisor will probably recommend specific preparatory courses as a part of elective work.

## Administration of Health Services (Graduate)

The graduate program in the administration of health services is designed to develop the students' conceptual, analytical, and administrative abilities for application in planning, organizing, controlling, and evaluating the utilization of resources within community, regional, or national health care delivery systems.

The curriculum includes the study of the social, political, and economic forces that influence the development of health care delivery systems and that shape the problem-solving and decision-making processes of health care resources management.

The program in administration of health services leads to the Master of Science degree. Applicants for candidacy should have the following courses or their recognized equivalent. ACCT 5031, ECON 5031, MGMT 5031, MGMT 5032, MGMT 5132, and MGMT 5431. Otherwise, they may be prohibited from enrolling in some of the required degree courses.

### Degree Requirements

The Candidate Plan of Studies must include a minimum of 36 semester hours of course work. The following courses represent a typical selection for 30 of the required hours:

ADHS	4332	ADHS	5331	ADHS	6732
ADHS	5031	ADHS	6131	ENVR	5132
ADHS	5131	ADHS	6731	MKTG	4332
ADHS	5231				

In addition to courses listed, each student must complete ADHS 59v9 and ADHS 67v9 as integral elements of the graduate program.

## Development and Utilization of Human Resources (Undergraduate)

The undergraduate program in development and utilization of human resources leads to the Bachelor of Arts degree. The program is designed to prepare students for careers in public and private manpower administration. Students have an opportunity to emphasize either the social sciences or business management in planning their individual sequences of courses.

### Student Preparation

It is recommended that students planning to concentrate in the development and utilization of human resources have acquired a background in principles of economics and the behavioral sciences, including human psychology. Students who do not have the recommended preparation and who cannot demonstrate proficiency through special examination may be required to take additional courses before enrolling in the required ones.

### Core Requirement

The courses listed below, or their approved equivalents, constitute the core requirements. Students with strong preparation or those who demonstrate advanced proficiencies through special examination may already have satisfied portions of the core requirement.

ACCT	3033	GOVT	4531	STAT	3231; 3232	or
FINC	3332	GOVT	4532	RSCE	3531	
GOVT	3532					

### Concentration Requirements

The following 9 semester hours, plus 12 semester hours of approved course work in business and the social sciences, are to be included in all plans of study: HMRS 3331, HMRS 4031, and HMRS 4331.

## Development and Utilization of Human Resources (Graduate)

The graduate program in Development and Utilization of Human Resources leads to the Master of Arts degree. The program allows students to pursue individual objectives within the framework of human resource activities. Students may prepare for careers in manpower management, training, or planning either with private firms or governmental agencies. The program provides exposure to manpower planning, employment, salary and benefits, administration, training, organizational development, labor relations, affirmative action, and safety. Individuals who are interested in the sociological development of human resources may prepare for careers in such areas as public training programs, criminal justice programs, and other social services fields.

### Degree Requirements

The Candidate Plan of Studies will include a minimum of 30 semester hours of credit, inclusive of Master's Degree Option 1, 2, or 3, or a minimum of 36 hours under Option 4. All candidates must include GOVT 6331 and two of the following three courses—HMRS 5131, HMRS 5731, HMRS 5732.

## Environmental Management (Undergraduate)

The undergraduate program in environmental management leads to the Bachelor of Science degree. The program's goal is to prepare students for positions involving management of natural resources, but the curriculum has sufficient breadth to provide the students with the tools necessary for middle management and staff positions in a variety of public and private settings.

### Student Preparation

Although there are no specific courses that must be completed prior to admission to the program, there are courses that would be helpful to the student preparing for the environmental management program. Strong backgrounds in either the natural sciences or the social sciences are highly desirable; other relevant courses include accounting, statistics, speech, geography, management, finance, computer science, and legal studies. Students who do not have adequate preparation in the sciences may be required to take additional courses before enrolling for the required core.

### Core Requirements

The courses listed below, or their approved equivalents, constitute the core requirements. Students with strong preparations or those who demonstrate advanced proficiencies through special examinations may already have satisfied portions of the core requirement.

ACCT	3033	GOVT	4531	MGMT	3033
FINC	3332	GOVT	4532	RSCE	3531 or equivalent
GOVT	3532				

### Concentration Requirements

The following courses are to be included in all Candidate Plans of Study: ENVR 3131, ENVR 4331, ENVR 4131, ENVR 4132, and ENVR 4133. An internship, or its equivalent, is required of all degree candidates. Remaining courses are selected through consultation with the advisor.

## Environmental Management (Graduate)

The graduate program in environmental management leads to the Master of Science degree and is designed to prepare managers of operations that involve the natural environment. The program focuses on the interaction of science, technology, and public policy in a complex, highly industrialized setting. It seeks to train talented and competent decision makers for solving complex environmental problems; developing national, state, and local strategy options; evaluating needs for standards; and assessing the state-of-the-art.

### Degree Requirements

The Candidate Plan of Studies will include a minimum of 30 semester hours of credit inclusive of Master's Degree Option 1, 2, or 3, or a minimum of 36 hours inclusive of Option 4. All candidates must complete at least 15 semester hours of environmental management course work, including ENVR 5131, 5331, 6131, and 6132. All candidates must perform satisfactorily on a comprehensive examination.

## Government Planning and the Political Process (Undergraduate)

The undergraduate program in Government Planning and the Political Process leads to the Bachelor of Arts degree and is designed to prepare students for careers in public management. The public management profession may include persons elected to public office, individuals appointed to executive positions, and career civil servants promoted through the ranks. They may serve in the legislature, the execution branch, or in large nonprofit institutions. But all will share the common experience of holding positions of responsibility involving planning, policy making, and administration.

### Student Preparation

It is recommended that the applicant have taken six hours of introductory economics. Students deficient in this prerequisite will be expected to include appropriate ECON courses among their electives.

### Core Requirements

The courses listed below, or their approved equivalents, constitute the core requirements. Students with strong preparation or those who demonstrate advanced proficiencies may already have satisfied portions of the core requirement.

ACCT	3033	GOVT	3531	GOVT	4531
FINC	3332	GOVT	3532	GOVT	4532
GOVT	3332	GOVT	3533	STAT	3232 or
				RSCE	3531

### Concentration Requirements

The courses included in the Candidate Plan of Studies are selected by the student and his advisor to meet individual interests and needs. A minimum of 18 semester hours must be selected from courses offered in government, the behavioral sciences, environmental management, human resources, legal studies, and management.

## Government Planning and the Political Process (Graduate)

The graduate program in government planning and the political process leads to the Master of Arts degree. It seeks to train able people to occupy influential positions of responsibility involving planning, financing, and implementing public sector programs and projects.

### Student Preparation

Students entering this program will be expected to have completed the following undergraduate course work or its equivalent:

Economics	3 semester hours
Political Science or Government	6 semester hours
Statistics	3 semester hours

Deficiencies in these areas can be made up through the completion of approved course work at UH/CLC, chosen in consultation with the individual student's advisor.

### Degree Requirements

The Candidate Plan of Studies will include a minimum of 30 semester hours of credit, inclusive of Master's Degree Option 1, 2, or 3, or a minimum of 36 semester hours inclusive of Option 4. All candidates must complete GOVT 6331, FINC 5531, GOVT 5532, and GOVT 6731.

## The Law and the Citizen (Undergraduate)

The program in the Law and the Citizen leads to the Bachelor of Science degree and provides two areas of specialization: (1) Administration of Criminal Justice and (2) American Jurisprudence.

Courses in The Law and the Citizen may constitute a major part of a political science concentration for future teachers, may be clustered as an area of specialization for students in related programs, or may be organized as a pre-law curriculum.

It is recommended that applicant's previous college work include some courses from the fields of criminology, economics, government, history, natural sciences, psychology, and sociology.

### Administration of Criminal Justice

The Administration of Criminal Justice concentration is intended primarily for students whose interests lie in one or more of the following areas: law enforcement, criminal justice administration, criminal justice planning, corrections, law, probation, and parole. Emphasized are studies in criminal behavior, law enforcement, the law, and public administration. Students interested in professional careers in any aspect of the criminal justice system will find this concentration appropriate to their particular needs. The program is certified by the Texas Commission on Law Enforcement Officer Standards and Education.

The following courses, or their approved equivalents, constitute the core requirement: GOVT 3031, GOVT 4531, LEGL 3031, LEGL 3033, and STAT 3231.

A concentration must include 21 hours from an approved interdisciplinary list. At least two courses must be taken from the social sciences specialization group below; at least one from the legal; and one from the management group. Students who do not hold the Associate Degree in Law Enforcement may be required to complete additional course work in criminal justice.

#### Social Sciences

ECON	4534
GEOG	4133
GOVT	4135
PSYC	4531
PSYC	3334
PSYC	4331
PSYC	4532
PSYC	4533
PSYC	4731
SOCI	3532
SOCI	4133
SOCI	4331
SOCI	4131
SOCI	3335

#### Legal

GOVT	4133
GOVT	4533
GOVT	4336
LEGL	3131
LEGL	3132
LEGL	3331
LEGL	3332
LEGL	3534
LEGL	4331
LEGL	4131
LEGL	4132
LEGL	39v9

#### Management

GOVT	3532
HMRS	3331
MGMT	3033
MGMT	3331
MGMT	4332
MGMT	4333
SOCI	3533
SOCI	4035
STAT	3232

### American Jurisprudence

The concentration consists of a minimum of 36 hours of coherently organized courses, of which at least 18 hours must be GOVT and/or LEGL courses. The Candidate Plan of Studies will be individually designed in consultation with the advisor.

## Urban and Suburban Studies (Graduate)

The program in urban and suburban studies leads to the Master of Arts degree and is designed to prepare candidates for careers as professional regional, urban, and suburban planners. The program provides opportunity for involvement in a wide variety of planning programs through a combination of course work in interaction with practicing professional planners.

### Degree Requirements

The Candidate Plan of Studies will include a minimum of 48 semester credit hours inclusive of 12 semester credit hours in URBN 67v9 Graduate Internship in Urban and Suburban Studies. Competency in statistics must be demonstrated through examination or appropriate course work. All candidates must complete the following courses in addition to courses in Urban and Suburban Studies: ECON 5331, GEOG 5732, and URBN 5132. Depending upon interests, students may select courses from other cognate fields with the advisor's consent.

## Resource Utilization (Undergraduate)

The undergraduate program in resource utilization leads to a Bachelor of Science degree. The student may pursue either a general plan of studies, designed to provide an overview of the availability and utilization of resources or a more specialized one, centered on energy problems. The latter would emphasize the analysis of the implication of such new energy sources as geothermal and solar. Students will also be able to concentrate on energy economics, energy conversion, and resource transportation.

### Student Preparation

Although there are no specific courses that must be completed prior to admission to the program, there are courses that would be helpful to the student preparing for the resource utilization program. Strong backgrounds in either the natural sciences or economics are highly desirable; other relevant courses include accounting, statistics, geography, management, finance, computer science, and legal studies. Students who do not have adequate preparation in the sciences may be required to take additional courses before enrolling for the required core.

### Core Requirements

The courses listed below, or their approved equivalents, constitute the core requirements. Students with strong preparations or those who demonstrate advanced proficiencies through special examinations may already have satisfied portions of the core requirement.

ACCT	3033	GOVT	3532
FINC	3332	GOVT	4531
STAT	3231; 3232 or	GOVT	4532
RSCE	3531	MGMT	3033

### Concentration Requirements

Completion of 24 semester hours in addition to the core constitutes the concentration. The following three courses are to be included in all Candidate Plans of Study: RSCE 3131, 3331, and 4032; remaining courses are selected in consultation with the advisor.



---

# School of Sciences and Technologies

---

The purpose of the School of Sciences and Technologies is to produce graduates who are highly qualified to contribute to the continuing technical-scientific-industrial growth of the local region as well as the state and the nation. The School is divided into two major components: a cluster of programs in Science for Society, and a cluster in Technologies.

The Director of Programs in Science for Society will administer concentrations in the biological, physical, and mathematical sciences intended for undergraduates wishing to prepare themselves for careers in teaching, research, or industry. Graduate specializations in these programs will be characterized by an intensification of preparation and by attention to the interrelationships of advanced scientific, mathematical, and systems design theory and processes. Undergraduate concentrations for training para-professionals in the allied health sciences also are offered. Applicants for study in the allied health sciences should contact the office of the Dean for additional information.

The Director of Programs in Technologies will administer concentrations in a variety of technological fields needed by modern industry, governmental agencies, and research and development institutions. Specialists in the technical aspects of automatic control devices, oceanographic instrumentation, electro-optical devices, and computer applications to industrial systems will be trained and given opportunities for practical experience in cooperation with area industrial, scientific, and related organizations.

Students enrolled in the School of Sciences and Technologies are required to take Technical Writing (COMM 3135) or its equivalent to be determined by the individual's advisor.

Graduate applicants must submit scores (Verbal, Quantitative, Advanced) in the Graduate Record Examination (GRE), which may be taken on the Clear Lake City Campus. The Advanced test may be taken in a subject of the student's choice. The GRE should be completed prior to or during the first semester at UH/CLC.

## PROGRAMS IN SCIENCE FOR SOCIETY

Students in the applied sciences may select from undergraduate concentrations in the mathematical, physical, or biological sciences.

### Allied Health Sciences (Undergraduate)

The programs in the allied health sciences lead to the Bachelor of Arts or Bachelor of Science degree. Concentrations in medical records administration and medical technology are planned within the guidelines of the appropriate accrediting organizations. Students anticipating entering these programs should plan to have completed the necessary preparatory studies; further information may be obtained in the Office of the Dean.

#### Student Preparation

It is recommended that applicants for candidacy in the allied health sciences have completed the courses outlined below in preparation for study at UH/CLC:

General Chemistry	6 semester hours
Organic Chemistry	6 semester hours
Physics	6 semester hours
Biology and/or Life Sciences	6 semester hours
Calculus	6 semester hours
Computer Sciences	3 semester hours

Students who do not have the recommended preparation may be required to take appropriate courses for entry to the program.

## Biological Sciences (Undergraduate)

The program in the biological sciences, leading to the Bachelor of Arts or Bachelor of Science degree, is designed to prepare the student for continuing advanced study or for a career in applied science with industry or government. Concentrations in neuroscience, biomedical, and nutrition science are particularly applicable to students preparing for the health professions.

### Student Preparation

It is recommended that applicants for degree candidacy in the biological sciences have completed the courses outlined below in preparation for upper-level study:

Inorganic Chemistry	6 semester hours
Organic Chemistry	6 semester hours
Physics	6 semester hours
Biology and/or Zoology	6 semester hours
Differential and Integral Calculus	6 semester hours

Students who do not have the recommended preparation may be required to take additional courses before enrolling for the required core. It will also be to the student's advantage to have the basic courses in both accounting and economics before applying for candidacy.

### Core Requirements

The courses listed below, or their approved equivalents, constitute the core requirements for the B.S. degree in biological sciences. Students with excellent preparation or those who demonstrate advanced proficiencies through special examination may already have satisfied portions of the core requirements.

BIOL 3015	CHEM 4321	GEOL 3032
BIOL 3332	GEOL 3031	MATH 3331 or
CHEM 4331		STAT 3231

### Concentration Requirements

The concentration consists of 33 semester hours selected from the following specialization groups; substitutions may be made with the permission of the advisor.

#### Group A (Nutritional Science)

BIOL 3631; 3632	NUTR 4131; 4111	NUTR 4113
BIOL 3611; 3612	NUTR 4132; 4112	NUTR 4331
BIOL 4131	NUTR 4133	NUTR 4332
BIOL 4111	NUTR 4721	

Group B  
(Marine Biology)

BIOL	39v9	BIOL	4234;4214	OCIN	3111
BIOL	4132	BIOL	4531	OCIN	39v9
BIOL	4112	BIOL	4721	OCIN	4132
BIOL	4231;4211	CSCI	3111	OCIN	4331
BIOL	4211	GEOG	3533	PROC	3131
BIOL	4233;4213	OCIN	3131	PROC	3111
				PROC	3134

Group C  
(Environmental Biology)

ASTR	4231	BIOL	39v9	CHEM	4645
ASTR	4232	BIOL	4231;4211	CHEM	4646
ASTR	4332;4333	BIOL	4234;4214	ENVR	3131
BIOL	3132;3112	BIOL	4531	ENVR	4331
BIOL	3332	GEOG	4331	OCIN	4131
BIOL	3333				

Group D  
(Biomedical)

BIOL	3334	BIOL	4632	BIOL	4331
BIOL	3631;3632	BIOL	4633	BIOL	4312
BIOL	3611;3612	BIOL	4131	BIOL	4531
BIOL	39v9	BIOL	4111	CHEM	4645;4646
BIOL	4631	BIOL	4332		

Group E  
(Neurosciences)

BIOL	3331	BIOL	4311	BIOL	4634
BIOL	3631;3632	BIOL	4332	BIOL	4635
BIOL	3611;3612	BIOL	4312	BIOL	4722
BIOL	39v9	BIOL	4531	PSYC	4731
BIOL	4131	BIOL	4631	STAT	3231;3232
BIOL	4111	BIOL	4632	STAT	4431;4432
BIOL	4331	BIOL	4633		

In addition, candidates may select 15 hours of elective courses, of which 9 hours should be distributed among ACCT, ECON, FINC, and MKTG selections. Students who have already had basic courses in ACCT and ECON may substitute selections from the humanities.

## Biological Sciences (Graduate)

The graduate program in biological sciences leads to the Master of Science degree. Applicants for candidacy are expected to have a bachelor's degree in biology, although applicants with other degrees may apply if their degree included a substantial number of advanced credits in the biological sciences.

The Candidate Plan of Studies must include a minimum of 30 semester hours of credit, inclusive of Option 1 or 2, or a minimum of 36 hours inclusive of Option 4. Up to 12 semester hours may be in other sciences, but the balance must be selected from BIOL and/or NUTR courses of the 5000 and 6000 levels. A candidate's particular academic emphasis will be negotiated with the advisor in preparing the Candidate Plan of Studies; selecting from the specialization group, or from other groups upon approval of advisor and Dean. (Group A-Nutrition; Group B-Neurosciences).

## Mathematical Sciences (Undergraduate)

The undergraduate program in mathematical sciences leads to the Bachelor of Arts or Bachelor of Science degree. Emphasis is on applied mathematics, and students may specialize in either analytical mathematics or mathematical modeling. Additional concentrations are anticipated for the future.

### Student Preparation

It is recommended that degree-seeking students in mathematical sciences have completed the following in preparation for upper-level study:

College Algebra and Linear Algebra	6 semester hours
Differential and Integral Calculus	6 semester hours
College Physics	6 semester hours
Computer Science	3 semester hours

Students who do not have the recommended preparation and who cannot demonstrate proficiency through special examination may be required to take additional courses before registering for the required core.

### Core Requirements

The following courses, or their approved equivalents, constitute the required core. Students with excellent preparation or those who demonstrate advanced proficiencies through special examination may already have satisfied portions of the core requirements.

MATH 3231	MATH 4131	PSYC 3431;3432
MATH 3331	MATH 4132	STAT 4431;4432
MATH 4031		

### Concentration Requirements

The concentration consists of 27 semester hours of courses in the following groups or additional courses selected in consultation with the advisor.

#### Group A (Analytical)

MATH 3231	MATH 4431;4432
MATH 3232	MATH 4631;4632
MATH 4234	CTEC 4531

#### Group B (Mathematical Modeling)

CSCI 3231;3232	BIOL 3335	MATH 4234
CSCI 4131	MATH 3232	MATH 4235
CSCI 4133		

The balance of the candidate's semester hours may consist of selections approved by the advisor. Selections from ACCT, ECON, FINC, and MGMT listings are recommended.

## Mathematical Sciences (Graduate)

The graduate program in mathematical sciences leads to the Master of Science degree. Applicants for candidacy are expected to have a bachelor's degree in mathematics. Applicants with another degree may apply if the degree included advanced credits in mathematics, but such applicants may be required to take additional courses before being admitted to candidacy.

## Degree Requirements

The Candidate Plan of Studies must include a minimum of 30 semester hours' credit inclusive of Master's Degree Option 1 or 2, or a minimum of 36 hours inclusive of Option 4. A maximum of 12 hours may be in courses other than mathematics but must be closely related. In all instances, the balance of credits must be in MATH courses of the 5000 and 6000 level.

## Physical Sciences (Undergraduate)

The undergraduate program in physical sciences leads to the Bachelor of Arts or Bachelor of Science degree. Students may select from several specializations in planning their studies in relation to intended careers in teaching, research, or industry.

### Student Preparation

It is recommended that applicants for degree candidacy in the physical sciences have completed the courses outlined below in preparation for upper-level study:

General Chemistry	6 semester hours
Quantitative and/or Organic Chemistry	6 semester hours
College Algebra and Linear Algebra	6 semester hours
Differential and Integral Calculus	6 semester hours
Computer Science	3 semester hours
College Physics	6 semester hours
Geology	6 semester hours

Students who do not have the recommended preparation may be counseled to take additional courses before enrolling for the required core.

### Core Requirements

The following courses, or their approved equivalents, constitute the core requirements.

CHEM 3121	GEOL 4331	PHYS 3014
CHEM 4231;4232	MATH 3331 or	PHYS 3431;3432
CHEM 4211;4212	STAT 3231	

Students with excellent preparation may already have satisfied portions of the core requirements or may wish to substitute appropriate courses.

### Concentration Requirements

The concentration consists of 28 semester hours to be selected from the following specialization groups; substitutions may be made with the permission of the advisor.

Group A (Analysis, Synthesis, and Industrial Processes)					
BIOL 4531	CHEM 4645;4646	PROC 4234			
CHEM 4441	CHEM 4632;4633	PROC 4235			
CHEM 4442	CHEM 4613	PROC 3131;3111			
CHEM 4423	PROC 4231	PHYS 4335			
CHEM 4521;4522	PROC 4232	PHYS 4331			
CHEM 4632;4633					

Group B  
(Energy/Earth Science)

GEOL	3031	GEOL	4411	PROC	4232
GEOL	3022	GEOL	4432	PROC	4233
GEOL	3012	GEOL	4433	PROC	4234
GEOL	3321	GEOL	4434	PROC	4235
GEOL	3311	GEOL	4414	ENVR	3131
GEOL	3531	GEOL	4721	ENVR	4031
GEOL	4431	PROC	4231	ENVR	4331

Group C  
(Polymers and Materials Science)

BIOL	4531	CHEM	4634	CHEM	4721
CHEM	3331	CHEM	4614	PHYS	4335
CHEM	3332	CHEM	4645;4646	PROC	3131
CHEM	4631	CHEM	4632;4633	PROC	3111
CHEM	4611	CHEM	4613	PROC	3133

Group D  
(Space Science)

ASTR	3331	ASTR	4132	ASTR	4232
ASTR	3332	ASTR	4133	ASTR	4332;4333
ASTR	3739	ASTR	4231	ASTR	4531
ASTR	4131	ASTR	4331	ASTR	4721

Group E  
(Environmental Science)

RSCE	3531	BIOL	4231;4211	GEOL	4721
ENVR	3131	GEOG	3132	ASTR	4231
ENVR	4031	GEOL	3533	ASTR	4232
ENVR	4331	GEOL	3221;3211	ASTR	4331
BIOL	3332	GEOL	4131	ASTR	4332;4333
BIOL	3333	GEOL	4331		

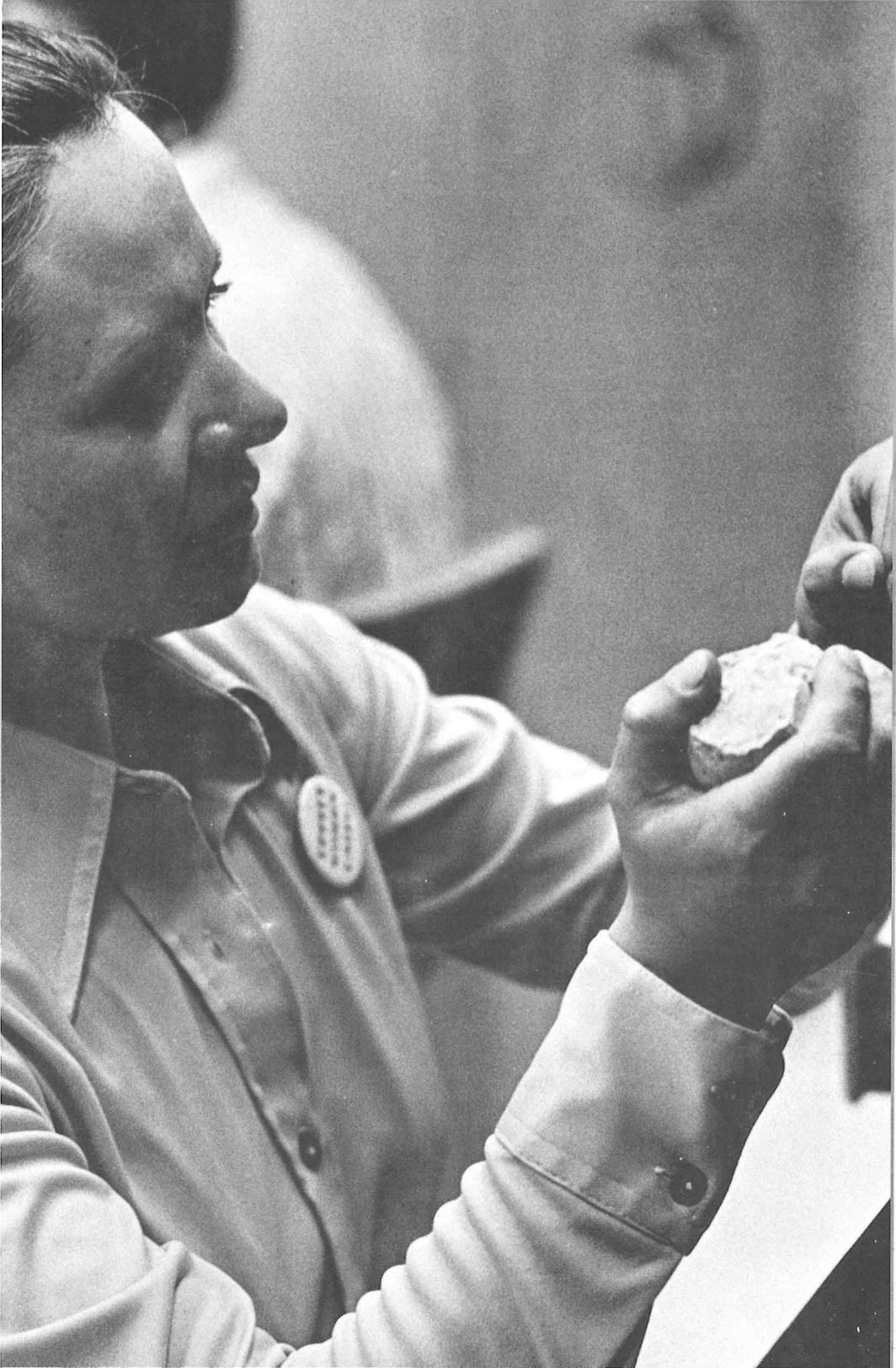
In addition, candidates may select 15 hours of elective courses, of which 9 hours should be distributed among ACCT, ECON, FINC, and MGMT selections. Students who have already had basic courses in ACCT and ECON may substitute selections from the humanities.

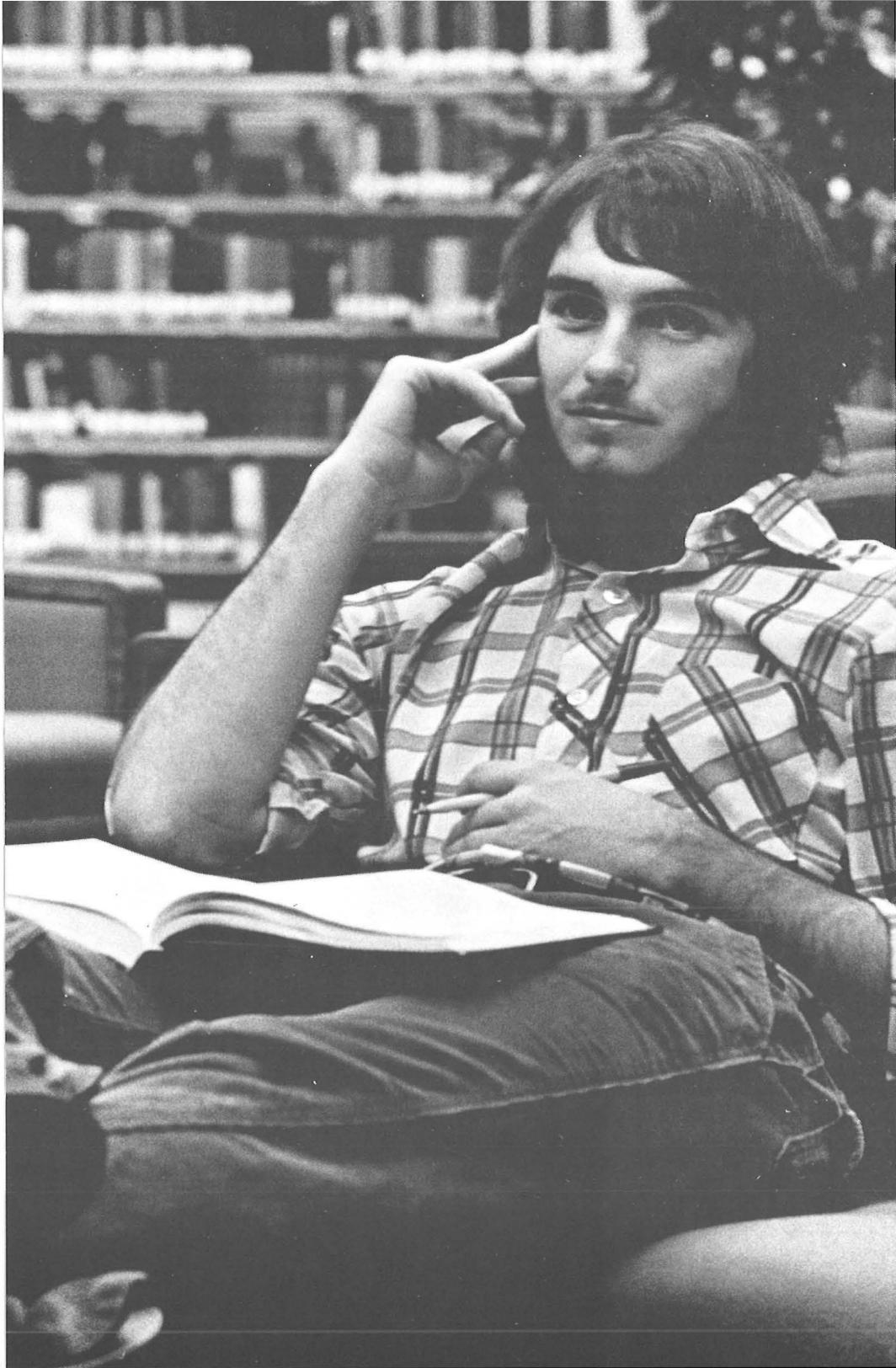
## Physical Sciences (Graduate)

The graduate program in physical sciences leads to the Master of Science degree. Applicants for candidacy are expected to have the bachelor's degree in one of the physical sciences, although applicants with other degrees may apply if preparation has included substantial numbers of advanced credits in the physical sciences.

The Candidate Plan of Studies must include a minimum of 30 semester hours of credit, inclusive of Option 1 or 2, or a minimum of 36 hours inclusive of Option 4. Up to 12 semester hours may be in other sciences or advanced technologies, but the balance must be selected from physical science courses of 5000 and 6000 levels. Candidates should select 18 semester hours from the specialization groups, or consult with the advisor or Dean concerning other possible emphases for the Candidate Plan of Studies.

GROUP A	Materials Science
GROUP B	Astronomy and Space Science
GROUP C	Analysis, Synthesis, and Industrial Processes





## PROGRAMS IN TECHNOLOGIES

Students desiring to concentrate in technologies may choose any one of five general programs at either the undergraduate or graduate level, with opportunity for specialized concentration within the selected program. Applicants should consult the Director of Programs in Technologies for additional information.

### Avionics Instrumentation (Undergraduate)

A concentration in avionics instrumentation, leading to the Bachelor of Science degree, is administered by the Director of Programs in Technologies. The program is designed to qualify graduates to develop, install, test, maintain, and adapt avionics instrumentation systems as found in modern airborne and ground support systems for guidance, control, monitoring, and communications. Students should contact their advisor concerning licensing and certification requirements necessary for certain aspects of this field.

#### Student Preparation

It is recommended that students planning to concentrate in avionics instrumentation have the courses outlined below in preparation for upper-level study.

Algebra/Trigonometry	6 semester hours
Fundamentals of Instrumentation	3 semester hours
Solid State Devices	4 semester hours
Electronic Circuits	12 semester hours
College Physics	6 semester hours
Calculus	6 semester hours
Computer Science	3 semester hours

Students who do not have the recommended preparation and who cannot demonstrate proficiency through special examination may be required to take additional courses before enrolling in certain courses of the required core.

#### Core Requirements

The courses listed below, or their approved equivalents, constitute the core requirements and are designed to provide the student with a fundamental background in digital hardware and software techniques, linear hardware techniques, and avionics, as related to instrumentation systems.

AVIN	3122	CTEC	3111	PROC	3114
AVIN	3133	CTEC	3132	PROC	3132
AVIN	4131	CTEC	3331	PROC	3331
AVIN	4132	CTEC	3531	PROC	3112
CSCI	3111	MATH	3333	PROC	3431
CTEC	3131				

NOTE: Students without credit for the equivalents of CSCI 3132 or MATH 3332 must take these courses or pass equivalency exams.

In addition, the student may select 12 semester hours of electives, as endorsed by his advisor, from ACCT, ECON, ENVR, FINC, MGMT, PSYC, SOCI, and STAT.

#### Concentration Requirements

Completion of 12 semester hours beyond the core, with grades of C or higher, constitutes the concentration. These 12 hours are to be selected from the following:

AVIN	39v9	AVIN	4332	CTEC	4532
AVIN	4133	AVIN	4531	PROC	4331
AVIN	4134	AVIN	4931	PROC	4311
AVIN	4331	AVIN	4939	MATH	4134

The balance of the student's semester hours may consist of free electives. Humanities courses are especially recommended.

A comprehensive examination must be passed during the student's last 12 hours leading to the B.S. degree.

## Avionics Instrumentation (Graduate)

A concentration in avionics instrumentation, leading to the Master of Science degree is administered by the Dean of the School of Sciences and Technologies. The program is designed to prepare students for professional and managerial positions in education, science, and industry.

## Candidate Preparation

Students aspiring to graduate degree candidacy are advised to have completed the following courses or their equivalent and to have gained computer programming proficiency in a compiler language: AVIN 4132, PROC 3331, CTEC 3531, CTEC 3331, and MATH 3333.

### Degree Requirements

The Candidate Plan of Studies must include a minimum of 30 semester hours credit inclusive of Master's Degree Options. All candidates must complete a minimum of 9 semester hours from both of the following lists of courses.

#### Group A

AVIN	5131	AVIN	59v9
AVIN	5332	AVIN	6131
AVIN	5531	AVIN	6331
AVIN	5931	PROC	5332

#### Group B

AVIN	5331	CTEC	5331	CTEC	5332
------	------	------	------	------	------

## Computer Applications to Industrial Processes (Undergraduate)

Concentrations in computer applications leading to the Bachelor of Science degree, are administered by the Director of Programs in Technologies in the School of Sciences and Technologies. The program is designed to prepare students to develop, install, test, maintain, and adapt both large and small computer systems for industrial and scientific purposes. Students may select from concentrations in hardware (Peripherals or Process Control) and/or software (Information and Computer Science). All concentrations emphasize the use of microprocessors and minicomputers in real time, time share, and computer network applications.

### Student Preparation for Computer Hardware Concentrations

It is recommended that students planning to concentrate in Computer Peripherals or Computer Process Control have completed the following courses or their equivalents in preparation for upper-level study.

Solid State Devices	4 semester hours
Electronic Circuits	12 semester hours
College Physics	6 semester hours
Calculus	6 semester hours
Computer Science	3 semester hours

Students who do not have the recommended preparation and who cannot demonstrate proficiency through special examination may be required to take additional courses before enrolling in certain courses of the required core.

#### Core Requirements for Computer Hardware Concentrations

The courses listed below, or their approved equivalents, constitute the core requirements.

CSCI	3111	CTEC	3132	CTEC	4113
CSCI	3331	CTEC	3331	MATH	3333
CSCI	3332	CTEC	3531	PROC	3114
CSCI	4532	CTEC	4131	PROC	3132
CTEC	3131	CTEC	4133	PROC	3112
CTEC	3111				

NOTE: Student without credit for the equivalents of CSCI 3132 and MATH 3332 must take these courses or pass equivalency exams.

In addition, the student is to select 12 semester hours, as endorsed by his advisor, from ACCT, ECON, ENVR, FINC, MGMT, MKTG, PSYC, SOCI, and STAT.

#### Concentration Requirements for Computer Hardware

Completion of 12 semester hours beyond the core with grade of C or higher constitutes the concentration. These 12 hours are to be selected from one of the two specialization groups and the common group. At least six hours, as endorsed by the advisor, must be chosen from one of the specialization groups.

##### Group A (Computer Peripherals)

CTEC	4331	CTEC	4332	CTEC	4334
PROC	4131				

##### Group B (Computer Process Control)

CTEC	4531	PROC	4231	PROC	4232
OCIN	4431	PROC	4232	PROC	4235
PROC	3531	PROC	4233		

##### Common Group

CTEC	39v9	CTEC	4532	CTEC	4939
CTEC	4132	CTEC	4333	MATH	4134

The balance of the student's semester hours may consist of free electives. Humanities courses are recommended.

A comprehensive examination must be passed during the student's last 12 hours leading to the B.S. degree.

### Student Preparation for Computer Software Concentration

It is recommended that students planning to concentrate in Information and Computer Science have completed the following courses or their equivalents in preparation for upper-level study.

Introduction to Digital Logic	4 semester hours
Electronic Circuits	7 semester hours
College Physics	6 semester hours
Calculus	6 semester hours
Computer Science	12 semester hours

Students who do not have the recommended preparation and who cannot demonstrate proficiency through special examination may be required to take additional courses before enrolling in certain courses of the required core.

### Core Requirements for Computer Software Concentration

The courses listed below, or their approved equivalents, constitute the core requirement.

CSCI 3111	CSCI 4531	CTEC 4532
CSCI 3331	CSCI 4532	MATH 3333
CSCI 3231	CSCI 4533	MATH 4235
CSCI 3332	CTEC 3132	PROC 3131 or 3132
CSCI 3232	CTEC 3531	PROC 3111 or 3112
CSCI 4332		

NOTE: Students without credit for the equivalents of CSCI 3132 and MATH 3332 must take these courses or pass equivalency exams. In addition, the student is to select 12 semester hours, as endorsed by his advisor, from ACCT, ECON, ENVR, FINC, MGMT, MKTG, PSYC, SOCI and STAT.

The balance of the student's hours may consist of free electives. Humanities courses are recommended.

A comprehensive examination must be passed during the student's last 12 hours leading to the B.S. degree.

### Computer Applications To Industrial Processes (Graduate)

Concentrations in computer applications, leading to the Master of Science degree, are administered by the Dean of the School of Sciences and Technologies. The program is designed to prepare students for professional and managerial positions in education, science, or industry. Both concentrations emphasize the use of microprocessors and minicomputers in real time, time share and computer network applications.

#### Candidate Preparation

Students aspiring to graduate degree candidacy with concentration in Computer Process Control are advised to have completed the following courses or their equivalents and to have gained computer programming proficiency in a compiler language: CTEC 3531, CTEC 4133, CTEC 4113, CTEC 4532, CSCI 4532 and MATH 3333.

Students aspiring to graduate degree candidacy with concentration in Information and Computer Science are advised to have completed the following courses or their equivalents: CTEC 3531, CTEC 4532, CSCI 4531, CSCI 4532, CSCI 4533, MATH 3333, and MATH 4235.

## Degree Requirements

The Candidate Plan of Studies must include a minimum of 30 semester hours credit inclusive of Master's Degree Options. All of the courses from one of the following two specialization groups and the common group should be included.

<b>Group A</b>					
(Computer Process Control)					
CTEC	6331	CSCI	4332	PROC	5332
CTEC	6532	CSCI	4531		
<b>Group B</b>					
(Information and Computer Science)					
CSCI	5131	CSCI		CSCI	6531
CSCI	5531	CSCI		CSCI	6532
<b>Common Group</b>					
CTEC	5331			CTEC	5332

## Electro-Optical Technology (Undergraduate)

A concentration in electro-optical technology, leading to the Bachelor of Science degree, is administered by the Director of Programs in Technologies in the School of Sciences and Technologies. The program is designed to qualify graduates to develop, install, test, maintain, and adapt electro-optical instrument systems as found in process monitoring and control, precision measurement and tracking, telemetry and communications, non-destructive testing, optical memory systems and biomedical diagnostics.

### Student Preparation

It is recommended that students planning to concentrate in electro-optical technology have completed the following courses or their equivalents in preparation for upper-level study.

Solid State Devices	4 semester hours
Electronic Circuits	8 semester hours
Communications Hardware	4 semester hours
College Physics	6 semester hours
Calculus	6 semester hours
Computer Science	3 semester hours

NOTE: Students without credit for the equivalents of CSCI 3132 and MATH 3332 must take these courses or pass equivalency exams.

Students who do not have the recommended preparation and who cannot demonstrate proficiency through special examination may be required to take additional courses before enrolling in certain courses of the required core.

### Core Requirements

The courses listed below, or their approved equivalents, constitute the core requirements.

CSCI	3111	CTEC	3531	PROC	3114
CTEC	3131	EOPT	3131	PROC	3132
CTEC	3111	EOPT	3132	PROC	3112
CTEC	3132	EOPT	3431	PROC	3134
CTEC	3331	MATH	3333	PROC	4332

In addition, the student is to select 12 semester hours, as endorsed by his advisor, from ACCT, ECON, ENVR, FINC, MGMT, MKTG, PSYC, SOCI, and STAT.

### Concentration Requirement

Completion of 12 semester hours beyond the core, with grades of C or higher, constitutes the concentration. These 12 hours are to be selected from one of the following two specialization groups and the common group. At least six hours, as endorsed by the advisor, must be chosen from one of the specialization groups.

Group A (Biomedical Instrumentation)					
EOPT	4231	EOPT	4234	BIOL	3611
EOPT	4232	EOPT	4331	BIOL	3632
EOPT	4233	BIOL	3631	BIOL	3612
Group B (Electro-Optical Instrumentation)					
CTEC	4333	EOPT	4431	EOPT	4532
EOPT	4111	EOPT	4432	EOPT	4533
EOPT	4132	EOPT	4531	OCIN	4331
EOPT	4331				
Common Group					
EOPT	39v9	EOPT	4931	MATH	4134
EOPT	4534	EOPT	4939		

The balance of the student's semester hours may consist of free electives. Humanities courses are recommended.

A comprehensive examination must be passed during the student's last 12 hours leading to the B.S. Degree.

## Electro-Optical Technology (Graduate)

The graduate program in electro-optical technology leads to the Master of Science degree and is designed to prepare students to enter science and industry with expectations for rapid advancement in research, education, or in management and supervision of an electro-optical enterprise.

### Candidate Preparation

Students aspiring to graduate degree candidacy are advised to have completed the following courses or their equivalents and to have gained computer programming proficiency in a compiler language: CTEC 3531, CTEC 3331, EOPT 3431, and MATH 3333.

### Degree Requirements

The Candidate Plan of Studies will include a minimum of 30 semester hours of credit inclusive of Master's Degree Option 1 or 2. All candidates must complete a minimum of 9 hours from both of the following lists of courses.

Group A					
EOPT	5131	EOPT	5332	EOPT	6331
EOPT	5231	EOPT	5931	EOPT	6431
EOPT	5331	EOPT	59v9	EOPT	5332

## Group B

CTEC 5331                      CTEC 5332                      EOPT 5431

**Oceanographic Instrumentation (Undergraduate)**

A concentration in oceanographic instrumentation, leading to the Bachelor of Science degree, is administered by the Director of Programs in Technologies in the School of Sciences and Technologies. The program is designed to qualify graduates to develop, install, test, maintain, and adapt modern oceanographic instrumentation systems. Students should contact their advisor concerning licensing and certification requirements necessary for certain aspects of this field.

**Student Preparation**

It is recommended that students planning to concentrate in oceanographic instrumentation have the courses outlined below in preparation for upper-level study.

Fundamentals of Instrumentation	3 semester hours
Solid State Devices	4 semester hours
Electronic Circuits	8 semester hours
Aquatic Biology	3 semester hours
Geology	3 semester hours
Calculus	6 semester hours
Computer Science	3 semester hours

NOTE: Students without credit for the equivalents of CSCI 3132 and MATH 3332 must take these courses or pass equivalency exams.

Students who do not have the recommended preparation and who cannot demonstrate proficiency through special examination may be required to take additional courses before enrolling in certain courses of the required core.

**Core Requirements**

The courses listed below, or their approved equivalents, constitute the core requirements and are designed to provide the student with a fundamental background in digital hardware and software techniques, linear hardware techniques, and oceanography.

CSCI 3111	GEOL 3031	OCIN 4231
CTEC 3131	GEOL 3032	PROC 3114
CTEC 3111	MATH 3333	PROC 3132
CTEC 3132	OCIN 3131	PROC 3112
CTEC 3331	OCIN 3111	PROC 3531
CTEC 3531	OCIN 3231	

In addition, the student is to select 12 semester hours, as endorsed by his advisor, from ACCT, ECON, ENVR, FINC, MGMT, MKTG, PSYC, SOCI, and STAT.

**Concentration Requirements**

Completion of 12 semester hours beyond the core, with grades of C or higher, constitutes the concentration. These 12 hours are to be selected from one of the following four specialization groups and the common group. At least six hours' as endorsed by the advisor, must be chosen from one of the specialization groups.

Group A  
(Shipboard Systems)

AVIN 4331	OCIN 4232	OCIN 4234
BIOL 4231	OCIN 4233	PROC 3331

Group B (Offshore Drilling)					
OCIN	4131	OCIN	4433	PROC	4232
OCIN	4331	PROC	4231		
Group C (Offshore Production/Pipeline)					
AVIN	3133	OCIN	4434	PROC	4231
AVIN	4331	OCIN	4231	PROC	4233
				PROC	4234
Group D (Offshore Seismic)					
OCIN	4433			OCIN	4432
OCIN	4431			PROC	4231
Group E (Offshore Petrochemical Technology: Selections from Group B, C, and D)					
Common Group					
CTEC	4532	OCIN	4931	PROC	3134
OCIN	39v9	OCIN	4939		

The balance of the student's semester hours may consist of free electives. Humanities courses are recommended.

A comprehensive examination must be passed during the student's last 12 hours leading to the B.S. degree.

## Oceanographic Instrumentation (Graduate)

The graduate program in oceanographic instrumentation leads to the Master of Science degree and is designed to prepare the student for careers in research, education or management of shipboard systems or offshore petrochemical automation systems.

### Candidate Preparation

Students aspiring to graduate degree candidacy are advised to have completed the following courses or their equivalents and to have gained computer programming proficiency in a compiler language: CTEC 3531, GEOL 3032, MATH 3333, OCIN 3131, OCIN 3111, OCIN 4231, and PROC 3331.

### Degree Requirements

The Candidate Plan of Studies must include a minimum of 30 semester hours of credit inclusive of Master's Degree Options. All of the courses from one of the following two specialization groups and the common group should be included.

Group A (Offshore Petrochemical Systems)					
OCIN	5431			OCIN	5432
Group B (Shipboard Systems)					
OCIN	5232			OCIN	6431

## Common Group

CTEC 5331  
OCIN 5131

OCIN 5231  
OCIN 5331

**Process Monitoring and Control (Undergraduate)**

The undergraduate program in process monitoring and control leads to the Bachelor of Science degree and is designed to prepare students for careers in process automation as encountered in a variety of industrial settings.

**Student Preparation**

It is recommended that students planning to concentrate in process monitoring and control have completed the following courses in preparation for upper-level study.

Fundamentals of Electronics	4 semester hours
Industrial Instrumentation	12 semester hours
College Physics	3 semester hours
General Chemistry	3 semester hours
Calculus	6 semester hours
Computer Science	3 semester hours

Students who do not have the recommended preparation and who cannot demonstrate proficiency through special examination may be required to take additional courses before enrolling in certain courses of the required core.

**Core Requirements**

The courses listed below, or their approved equivalents, constitute core requirements.

CSCI 3111	CTEC 4532	PROC 3331
CTEC 3131	MATH 3333	PROC 3431
CTEC 3111	PROC 3132	PROC 3531
CTEC 3132	PROC 3112	PROC 4331
CTEC 3331	PROC 3114	PROC 4311
CTEC 3531		

NOTE: Students without credit for the equivalents of CSCI 3132 and MATH 3332 must take these courses or pass equivalency exams.

In addition, the student is to select 12 semester hours, as endorsed by his advisor, from ACCT, ECON, ENVR, FINC, MGMT, MKTG, PSYC, SOCI, and STAT listings.

**Concentration Requirements**

Completion of 12 hours beyond the core, with grades of C or higher, constitutes the concentration. These 12 hours are to be selected from one of the following three specialization groups and the common group. At least six hours as endorsed by the advisor, must be taken from one of the specialization groups.

Group A  
(Automatic Machine Systems)

PROC 4131  
PROC 4434

PROC 4435  
PROC 4436

Group B  
(Electric Power)

PROC 4031  
PROC 4431

PROC 4432  
PROC 4433

PROC 4434

Group C  
(Petrochemical Processes)

PROC 4231	PROC 4233	PROC 4235
PROC 4232	PROC 4234	OCIN 4431

Common Group

MATH 4134	PROC 3134	PROC 4931
CTEC 4531	PROC 39v9	PROC 4939

The balance of the Student's semester hours may consist of free electives. Humanities courses are recommended.

A comprehensive examination must be passed during the student's last 12 hours leading to the B.S. degree.

## Process Monitoring and Control (Graduate)

The graduate program in process monitoring and control leads to the Master of Science degree and is designed to prepare students for professional and managerial positions in education, science or industry. All concentrations emphasize modern hardware and software techniques for process automation.

### Candidate Preparation

Students aspiring to graduate degree candidacy are advised to have completed the following courses of their equivalents and to have gained computer programming proficiency in a compiler language: CTEC 3531, PROC 3331, PROC 4331, PROC 4311, and MATH 4134.

### Degree Requirements

The Candidate Plan of Studies must include a minimum of 30 semester hours credit inclusive of Master's Degree Options. All of the courses from the common group and three of the courses from one of the following two specialization groups should be included.

Group A  
(Electrical Power)

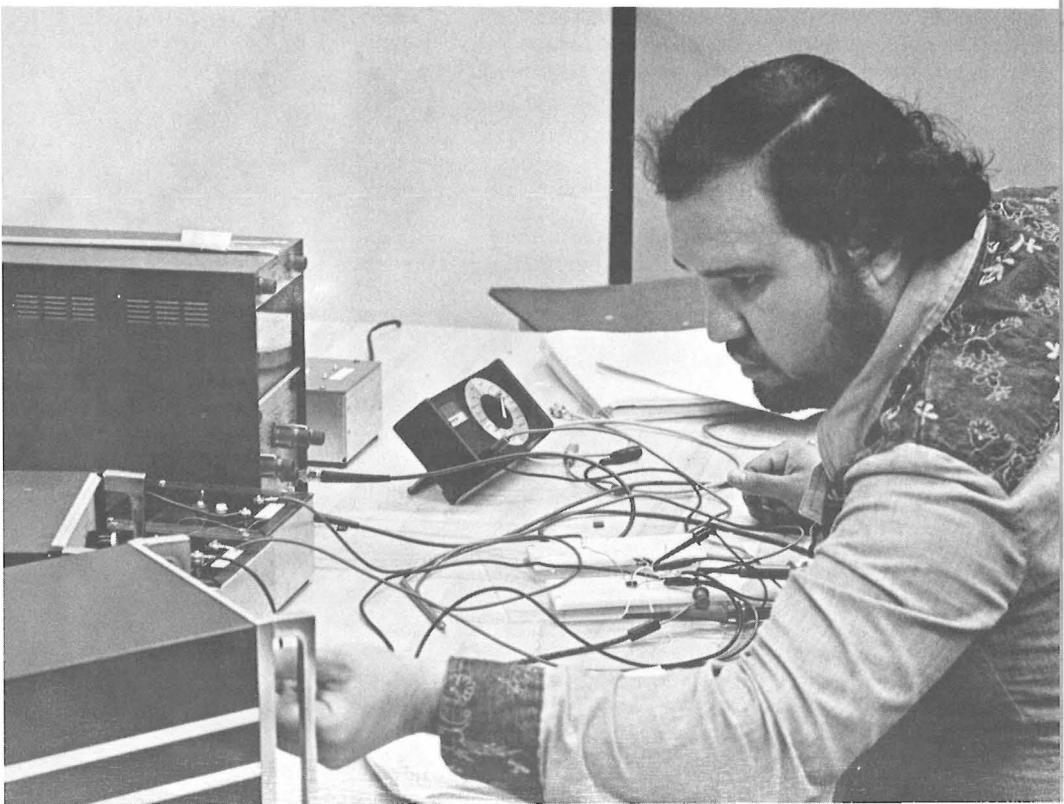
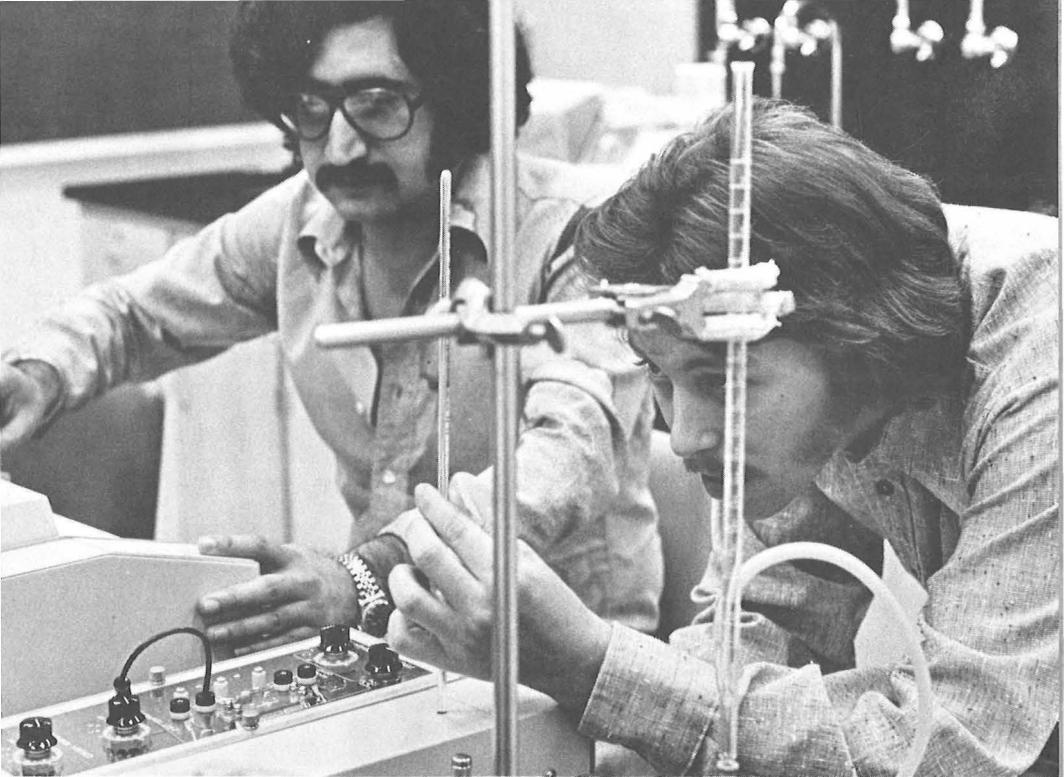
PROC 5332	PROC 5433	PROC 6531
PROC 5432	PROC 5931	PROC 6533

Group B  
(Petrochemical Processes)

AVIN 5331	PROC 5332	PROC 6533
CTEC 5531	PROC 6532	OCIN 5432
PROC 5233	PROC 5931	

Common Group

CTEC 5331	CTEC 5332	PROC 5531
-----------	-----------	-----------





# Roster of Courses

## COURSE NUMBERING

All courses offered at the University of Houston at Clear Lake City are identified by a four-letter abbreviation of an academic discipline plus a four-digit number; e.g., ACCT 3031 identifies an accounting course.

The first digit of a course number indicates scholastic level and also provides information regarding restriction to undergraduate and/or graduate student enrollment:

3000 series courses—intermediate level undergraduate; normally open to undergraduates only;

4000 series courses—advanced level undergraduate; open to undergraduates, and to graduate students within the limitations imposed by master's degree requirements;

5000 series courses—beginning level graduate; open to graduate students only;

6000 series courses—intermediate level graduate; open to graduate students only.

The second digit provides coding information for administrative purposes and has no significance for the student.

The third digit indicates the number of semester credit hours associated with the course. When the letter "v" appears in place of a third digit, the course is offered for variable credit, and the actual number of credits for which the student registers is subsequently inserted on the student's record by the Registrar.

The fourth digit provides sequential coding information for administrative purposes and has no significance for the student.

**EXAMPLES:** MGMT 4331 is an advanced undergraduate course in management, carrying 3 semester credit hours; LITR 6533 is an intermediate level graduate course in literature, carrying 3 semester credit hours; BIOL 3312 is an intermediate level undergraduate course in biology, carrying 1 semester credit hour.

## COURSE PUNCTUATION

When two or more course numbers are separated by semicolons (;), latter courses may not be taken until credit is earned for previous ones. When a single course is followed by a colon (:), the course may be taken as an independent one-semester course.

## AVAILABILITY OF COURSES

The University cannot guarantee in advance that courses listed in this catalogue will be offered in any specific term or year.

## ACCOUNTING

### ACCT 3033: MEASUREMENT AND REPORTING OF BUSINESS INFORMATION

The nature of the accounting process and the uses of accounting information; not intended for students majoring in accounting.

### ACCT 3331: MANAGERIAL ACCOUNTING

*Prerequisite: Principles of Accounting or equivalent.* Analysis of financial statements; income and capital budgeting, cost concepts, interpretation and relationship of financial information in managerial control and planning. Not intended for students concentrating in accounting.

### ACCT 3332: INSTITUTIONAL ACCOUNTING

*Prerequisite: Principles of Accounting or equivalent.* The use of accounting in governmental organizations; allocation of funds, disbursements, administrative control, and legal requirements.

**ACCT 3333: COST ACCOUNTING**

*Prerequisite: Principles of Accounting or equivalent.* Analysis of cost systems and preparation of cost statements.

**ACCT 3431;3432: INTERMEDIATE ACCOUNTING THEORY**

*Prerequisite: Principles of Accounting or equivalent.* Concepts and procedures underlying the measurement and reporting of financial information.

**ACCT 3739: UNDERGRADUATE INTERNSHIP IN ACCOUNTING**

*Prerequisite: 15 hours of upper-level credit and approval of program director.* Six hours of supervised work experience each week in an approved accounting firm, governmental agency, or business.

**ACCT 39v9: PROJECTS IN ACCOUNTING**

*(Variable credit, 1-6 semester hours.)*

*Prerequisite: approval of advisor and project director.* Individual projects and planned readings in accounting.

**ACCT 4331: FEDERAL INCOME TAXES**

Analysis of the Internal Revenue Code as applied to individuals.

**ACCT 4332: FINANCIAL INFORMATION SYSTEMS**

*Prerequisite: ACCT 3432 or equivalent.* Methods and procedures through which accounting information is provided for managerial planning and control.

**ACCT 4431;4432: AUDITING**

*Prerequisite: ACCT 3432 or equivalent.* Auditing theory, procedures, and problems; examination of working papers and reports; governmental auditing practices.

**ACCT 4532: ADVANCED FINANCIAL ACCOUNTING**

*Prerequisite: ACCT 3432 or equivalent.* Problems in financial accounting; partnerships, corporations, consolidated statements, and fiduciary accounting.

**ACCT 4533: ADVANCED TAX ACCOUNTING**

*Prerequisite: ACCT 4331 or equivalent.* The Internal Revenue Code as applied to fiduciary relationships, partnerships, and corporations; preparation of income, gift, estate, and inheritance tax returns.

**ACCT 4534: ADVANCED COST ACCOUNTING**

*Prerequisite: ACCT 3333 or equivalent.* Intensive examination of cost systems, cost behavior, and approaches to cost statements; implications for managerial planning and control.

**ACCT 4731: SEMINAR IN ACCOUNTING**

*Prerequisite: ACCT 3432 or equivalent.* The development of accounting theory; AICPA research bulletins and opinions; statements of the Financial Accounting Standards Board; pronouncements of other authoritative accounting bodies.

**ACCT 4931: SELECTED TOPICS IN ACCOUNTING**

*(Identified by specific title each time course is offered.)*

**ACCT 5031: ACCOUNTING CONCEPTS FOR MANAGERS**

*(For students with no previous training in accounting.)* Methods and procedures for communicating financial information, planning, analyzing business activity, and establishing controls.

**ACCT 5131: ACCOUNTING FOR ADMINISTRATIVE CONTROL**

*Prerequisite: ACCT 5031 or equivalent.* Cost concepts and behavior, performance measurement, and analytical uses of accounting data for administrative decisions.

**ACCT 5132: FEDERAL INCOME TAX ACCOUNTING**

Federal income tax accounting applied to individuals and corporations.

**ACCT 5331: ACCOUNTING ANALYSIS FOR MANAGEMENT DECISIONS**

*Prerequisite: ACCT 5131 or equivalent.* Pricing, cost analysis, process evaluation, managerial control, and planning for business decisions.

**ACCT 5332: ACCOUNTING INFORMATION SYSTEMS**

*Prerequisite: ACCT 3432 or equivalent.* Concept, design, and operational relationships of accounting information systems to the flow of data in business organizations.

**ACCT 5333: COST ACCOUNTING SYSTEMS**

*Prerequisite ACCT 5131 or equivalent.* Cost accounting systems and their applications to generation of data for inventory evaluation, decision-making, and control.

**ACCT 5531: INTERNATIONAL ACCOUNTING**

Analysis and application of accounting principles as utilized by multi-national business firms; case study method emphasized.

**ACCT 59v9: PROBLEMS IN ACCOUNTING**

*(Variable credit, 1-6 semester hours.)*

*Prerequisite: approval of advisor and problem director.*

**ACCT 6731: SEMINAR IN FINANCIAL ACCOUNTING THEORY**

*Prerequisite: ACCT 3432 or equivalent.* Theoretical approaches to the solution of current problems in financial reporting.

**ACCT 6732: SEMINAR IN AUDITING THEORY AND PRACTICE**

*Prerequisite: ACCT 4431 or equivalent.* Standards and procedures as currently accepted by independent public accountants; ethics, responsibilities, audit programs, and reporting dimensions.

**ACCT 6733: SEMINAR ON TAXATION**

*Prerequisite: ACCT 5132 or equivalent.* Recognition and analysis of the tax implications of business decisions; tax research and planning for the business enterprise.

**ACCT 67v9: GRADUATE INTERNSHIP IN ACCOUNTING**

*(Variable credit, 1-6 semester hours.)*

*Prerequisites: master's degree candidacy and approval of advisor and dean.* Supervised internship with an approved financial institution or firm; written and oral reports required.

**ACCT 6939: MASTER'S THESIS RESEARCH****ADMINISTRATION OF HEALTH SERVICES****ADHS 3131: FOUNDATIONS OF HEALTH SERVICES ADMINISTRATION**

The administration of health care services and basic principles of organization for patient care including financial, manpower and systems development and control considerations in meeting health requirements at community, state, regional and national levels.

**ADHS 3531: HOSPITAL ORGANIZATION AND MANAGEMENT**

*Prerequisite: ADHS 3131 or equivalent.* Structure, organization, and management of hospitals; ownership, administration, professional and nonprofessional departments, and personnel staff.

**ADHS 37v9: INTERNSHIP IN HEALTH SERVICES ADMINISTRATION**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: 30 hours of upper-level credit and approval of program director.* Supervised field experiences with an approved public or private health facility, agency, or planning council.

**ADHS 39v9: PROJECTS IN HEALTH CARE ADMINISTRATION**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and project director.* Individual projects and planned readings in the administration and delivery of health care; written reports required.

**ADHS 4131: HEALTH SERVICE INFORMATION SYSTEMS**

Gathering, analyzing, and reporting information in health institutions; computer applications to patient, personnel, and financial records and reports.

**ADHS 4132: HEALTH CARE PLANNING**

*Prerequisite: ADHS 3131 or equivalent.* Concepts of planning and their application to the delivery of health care; community health needs, and resources planning.

**ADHS 4133: HOSPITAL PLANNING, CONSTRUCTION, AND DESIGN**

*Prerequisite: ADHS 3131 or equivalent.* Planning, financing and constructing health care facilities; roles of consultants and architects; location and community involvement.

**ADHS 4134: EXTENDED CARE FACILITIES**

*Prerequisite: ADHS 3131 or equivalent.* Planning, financing, and administering extended care services; contrasting problems of short-term and long-term care and rehabilitation.

**ADHS 4332: LEGAL DIMENSIONS OF HEALTH SERVICES ADMINISTRATION**

Legal aspects of the doctor-patient-nurse-other health professional relationships; individual, corporate, and institutional liability and responsibility.

**ADHS 4531: FINANCIAL DIMENSIONS OF HEALTH SERVICES ADMINISTRATION**

*Prerequisites: Principles of Accounting and ADHS 3131 or equivalent.* Analysis of the financial framework within which health care organizations and facilities operate; sources and flow of funds, cost information systems, and capital budgeting.

**ADHS 4731: SEMINAR IN THE ADMINISTRATION OF HEALTH CARE**

*Prerequisite: 12 hours in ADHS.* Current problems, policies, and procedures in health care; recent professional literature and research.

**ADHS 4931: SELECTED TOPICS IN HEALTH SERVICES ADMINISTRATION**

*(Identified by specific title each time course is offered.)*

**ADHS 5031: FINANCIAL MANAGEMENT OF HEALTH SERVICES**

*Prerequisite: ACCT 5031 or equivalent.* Principles of finance and accounting as applied to health service delivery systems.

**ADHS 5131: HEALTH SERVICE SYSTEMS**

Managerial and administrative processes in hospitals and health care facilities; staffing, budgeting, and organizational policy formation.

**ADHS 5231; 5232: GOVERNMENT HEALTH SERVICE PROGRAMS**

Survey of federal, state, and local health service programs, with international comparisons; sources of information and funds, qualifications of patients and institutions, and proposed procedures.

**ADHS 5331: THE PATIENT**

Human aspects of providing health services as related to assessing needs, setting objectives, and evaluating care.

**ADHS 5931: RESEARCH TOPICS IN HEALTH SERVICES ADMINISTRATION**

*(Identified by specific title each time course is offered.)*

**ADHS 59v9: PROBLEMS IN HEALTH SERVICES ADMINISTRATION**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of academic advisor and residency preceptor.*

**ADHS 6131: ECONOMICS OF HEALTH CARE SYSTEMS**

Financing health service institutions and comparison of public and private organizations and structures; project in local health agency arranged.

**ADHS 6731: HEALTH SERVICES PERSONNEL ADMINISTRATION**

Problems of personnel management in health service organizations; emphasis on case studies.

**ADHS 6732: SEMINAR IN HEALTH SERVICES ADMINISTRATION**

Current issues and practices in health services administration.

**ADHS 67v9: GRADUATE RESIDENCY IN HEALTH ADMINISTRATION**

*(Variable credit, 1-6 semester hours)*

*Prerequisites: master's degree candidacy and approval of advisor and dean. Supervised residency with an approved health agency or organization; written and oral reports required.*

**ADHS 6939: MASTER'S THESIS RESEARCH****ADMINISTRATION, EDUCATIONAL****ADMN 5931: SELECTED TOPICS IN EDUCATIONAL ADMINISTRATION**

*(Identified by specific title each time course is offered.)*

**ADMN 59v9: PROBLEMS IN EDUCATIONAL ADMINISTRATION**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: Approval of advisor and problem director.*

**ADMN 6131: PRINCIPLES OF EDUCATIONAL ADMINISTRATION**

Principles and theory of administration; educational management and personnel relations.

**ADMN 6132: PUBLIC SCHOOL ORGANIZATION AND ADMINISTRATION**

Relationships of principals and supervisors to a school district; applications of principles and theory of administration to problem-solving and decision-making.

**ADMN 6331: ORGANIZATION AND ADMINISTRATION OF THE INSTRUCTIONAL IMPROVEMENT PROGRAM**

*Prerequisites: PSYC 5031 and either EDUC 6231 or 6232.* System-wide curriculum and instructional improvement programs; principles and procedures of their organization and administration.

**ADMN 6332: ADMINISTRATION OF SPECIAL AND COMPENSATORY EDUCATION**

Program evaluation, administration, and supervision; study of state and national plans, surveys of local needs, and program evaluation and improvement.

**ADMN 6333: ADMINISTRATION AND SUPERVISION IN SPECIAL EDUCATION**

*Prerequisite: DIAG 5031 or equivalent.* Philosophy, concepts, and problems in the administration and supervision of special education programs.

**ADMN 6334: ADMINISTRATION OF LIBRARY SERVICES**

Principles and illustrative practices in the organization, budgeting, and staffing of public school libraries and learning resource centers.

**ADMN 6335: ORGANIZATION AND ADMINISTRATION OF PUPIL PERSONNEL AND GUIDANCE SERVICES**

Models, management techniques, and methodology for student personnel and guidance services in schools.

**ADMN 6431: 6432: ROLE OF THE PUBLIC SCHOOL PRINCIPAL**

Administrative tasks of principals in the organization and management of their schools; two semesters devoted to elementary and secondary levels, respectively.

**ADMN 6731: ISSUES IN SCHOOL ADMINISTRATION**

Contemporary issues in educational administration; implications for planning, organizing, and controlling public schools.

**ADMN 6739: INTERNSHIP IN EDUCATIONAL ADMINISTRATION**

May be repeated for a maximum of six credits. Supervised internship in an approved educational environment; written and oral reports required.

**ANTHROPOLOGY****ANTH 3131: CULTURAL ANTHROPOLOGY**

Comparative study of societies and cultures with attention to cultural evolution theories, problems of cultural function, personality, language, social organization, marriage and family.

**ANTH 3132: SOCIAL ORGANIZATION**

The structure of human relationships and their relation to individuals, institutions and ways of life.

**ANTH 3331: ECOLOGICAL ANTHROPOLOGY**

*Prerequisite: Cultural Anthropology.* Interrelationships between man and his environment, in human evolution and in the structure of human ways of life.

**ANTH 3332: AFRO-AMERICAN ANTHROPOLOGY**

Afro-American culture extending from Brazil through the Caribbean into the United States, with emphasis on the African heritage as it has survived in music, art, and social systems.

**ANTH 3531: NEW VIEWS ON THE NATURE OF MAN**

Recent thought on the nature of man from such disciplines as anthropology, political theory, psychology, philosophy, religion, and economics.

**ANTH 37v9: UNDERGRADUATE PRACTICUM**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: 12 semester hours of appropriate upper-level work and approval of instructor. Written report required.*

**ANTH 39v9: PROJECTS IN ANTHROPOLOGY**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and project director. Individual projects and planned readings in anthropological inquiry.*

**ANTH 4131: COMPARATIVE MYTHOLOGY**

Comparative analysis of mythic systems; psychocultural unity versus psychocultural diversity.

**ANTH 4331: INDIANS OF NORTH AMERICA**

The native cultures of North America; redirections imposed by European influences and pressures, with special attention to the Indians of Texas and the Southwest.

**ANTH 4332: PEOPLES OF MESO-AMERICA**

An anthropological approach to the study of modern Meso-American peoples, especially those of Indian culture and descent.

**ANTH 4333: URBAN ANTHROPOLOGY**

Social systems and modernization processes of contemporary cities; comparison of urban structures in American industrial centers.

**ANTH 4431: WOMEN IN SOCIETY**

Anthropological perspectives on the ways and roles of women around the world.

**ANTH 4532: POLITICAL ANTHROPOLOGY**

Political processes and structures, law, and social control in industrial and non-industrial societies.

**ANTH 4533: CULTURAL EVOLUTION AND TRENDS**

Evolution of culture from pre-human origins to the present; conjectures about the current and future status of man.

**ANTH 4534: ANTHROPOLOGICAL APPROACH TO AESTHETICS**

Forms and uses of art as a central component of human culture; modes of Western and non-Western aesthetic expression and their implications about the nature of man.

**ANTH 4631: CULTURE THEORY**

Approaches to explaining the variety and similarity of human ways of living and thinking; various theories' implications for the future.

**ANTH 4632: PSYCHOLOGICAL ANTHROPOLOGY**

Approaches to relations between individual personality and culture and to the cross-cultural study of personality.

**ANTH 4633: ANTHROPOLOGY OF RELIGION**

Anthropological approaches to the nature of religion in human societies; cross-cultural study of religions.

**ANTH 4931: SELECTED TOPICS IN ANTHROPOLOGY**

*(Identified by specific title each time course is offered)*

**ANTH 5331: LANGUAGE AND CULTURE**

Relationship between linguistic structure and patterns of culture.

**ANTH 5431: ANTHROPOLOGY OF THE FAMILY**

Cross-cultural study of the structure and life ways of families and other small kin groups.

**ANTH 5531: MULTICULTURALISM AND THE FUTURE**

Contemporary perspectives on the future of pluralism in America.

**ANTH 5731: SEMINAR IN U.S. CULTURE**

The anthropological literature of American culture and American subcultures.

**ANTH 57v9: PROBLEMS IN ANTHROPOLOGY**

*(Variable credit, 1-6 semester hours)*

Prerequisite: approval of advisor and instructor.

**ANTH 59v9: PROBLEMS IN ANTHROPOLOGY**

*(Variable credit, 1-6 semester hours)*

Prerequisite: approval of advisor and instructor.

**ANTH 5931: RESEARCH TOPICS IN ANTHROPOLOGY**

*(Identified by specific title each time course is offered.)*

**ANTH 6331: COGNITIVE ANTHROPOLOGY**

Cross-cultural study of human mental structure and symbols.

**ANTH 67v9: GRADUATE INTERNSHIP**

*(Variable credit, 1-9 semester hours)*

Prerequisites: 12 hours of graduate level course work and approval of Internship Committee. Minimum of two days a week in an approved internship setting. Written report required.

**ANTH 68v9: MASTER'S PROJECT RESEARCH**

*(Variable credit, 1-6 semester hours)*

**ANTH 69v9: MASTER'S THESIS RESEARCH**

*(Variable credit, 1-9 semester hours)*

**ARTS**

(Please note: Lab fee may be charged in all Studio courses.)

**ARTS 3133: ADVANCED DESIGN I**

Prerequisite: Permission of instructor. Emphasis on specific two-dimensional design projects.

**ARTS 3135: ADVANCED DESIGN II**

Prerequisite: ARTS 3133 or permission of instructor. Emphasis on specific three-dimensional design projects.

**ARTS 3231: CERAMICS**

Study of ceramic design as related to tools, materials, and processes; handbuilding and potter's wheel.

**ARTS 3233: INTERMEDIATE CERAMICS**

Prerequisite: ARTS 3231 or permission of instructor. Forming techniques determined by individuals. Glaze technology, clay body construction, firing methods.

**ARTS 3331: INTERMEDIATE DRAWING I**

Prerequisite: Permission of instructor. Principles of space relationship and composition using recognizable forms.

**ARTS 3332: INTERMEDIATE DRAWING II**

*Prerequisite: ARTS 3331 or permission of instructor.* A continuation of ARTS 3331.

**ARTS 3335: INTERMEDIATE PAINTING I**

*Prerequisite: Permission of instructor.* Exploration of the techniques and methods of painting, either in oils or acrylics and works on paper.

**ARTS 3336: INTERMEDIATE PAINTING II**

*Prerequisite: Permission of instructor.* A continuation of ARTS 3335.

**ARTS 3431: INTERMEDIATE PRINTMAKING I**

*Prerequisite: Permission of instructor.* Exploration of printing techniques in relief, woodcuts, and dry point.

**ARTS 3432: INTERMEDIATE PRINTMAKING II**

*Prerequisite: ARTS 3431 or permission of instructor.* A continuation of ARTS 3431.

**ARTS 3831: WESTERN ART THROUGH THE MIDDLE AGES**

Development of art from prehistory through the late Middle Ages, with attention to ways in which they reflect the cultures that produced them.

**ARTS 3832: WESTERN ART: RENAISSANCE TO MODERN**

European art from the Renaissance to the beginning of the modern era, with attention to the intellectual, political, and social context.

**ARTS 3835: PRIMITIVE ART**

The arts of North America, Africa, and Oceania; anthropological and formal aesthetic approaches; lectures, class discussions, field trips, and individual projects.

**ARTS 3837: ART IN TEXAS**

Development of architecture, painting, sculpture, and art collections in Texas; lectures, class discussions, field trips in Houston and Galveston.

**ARTS 3839: THE ART MUSEUM**

Introduction to the organization, methods, and functions of the art museum in contemporary society. Museum workshops, individual projects, class discussions, and field trips.

**ARTS 39v9: PROJECTS IN ART**

*(Variable credit, 1-6 semester hours.)*

*Prerequisite: Approval of advisor and instructor.* Individual projects and planned readings in art education, art history, or studio.

**ARTS 4031: ART AND EDUCATION**

Art expression based on an understanding of child development; laboratory with two and three dimensional media, class discussions, and field experience.

**ARTS 4032: CRAFTS FOR TEACHERS**

Contemporary crafts for teachers; media, techniques, and design; attention to crafts in diverse cultures. Laboratory and field experience.

**ARTS 4133: COLOR**

*Prerequisite: ARTS 3135 or permission of instructor.* Color theory; elements and principles of color design.

**ARTS 4233: ADVANCED CERAMICS**

*Prerequisite: ARTS 3233 or permission of instructor.* Ceramics workshop with emphasis on individual projects. (May be repeated for credit.)

**ARTS 4331: ADVANCED DRAWING**

*Prerequisite: ARTS 3332 or permission of instructor.* Principles of space relationship and composition with emphasis on creative expression. (May be repeated for credit.)

**ARTS 4335: ADVANCED PAINTING**

*Prerequisite: ARTS 3336 or permission of instructor.* Exploration of the techniques and methods of painting either in oils or acrylics, with emphasis on creative expression. (May be repeated for credit.)

**ARTS 4431: ADVANCED PRINTMAKING**

*Prerequisite: ARTS 3432, or permission of instructor.* Exploration of printmaking techniques in etching, monotypes, and viscosity with emphasis on creative expression. (May be repeated for credit.)

**ARTS 4731: ART EDUCATION SEMINAR**

Investigation of new ideas in art education; curriculum development; the creative process; laboratory with mixed media; individual projects; field experience.

**ARTS 4831: MODERN ART**

The great revolutionary moments in modern art from the 19th Century to the present, with attention to changes and conflicts in society. Lectures, class discussions, individual projects, field trips.

**ARTS 4832: AMERICAN ART**

Architecture, painting, sculpture, and crafts in the United States; emphasis on 20th-Century American art. Lectures, class discussions, individual projects, and field trips.

**ARTS 4833: ANCIENT ART**

Prehistoric art; the arts in Egypt, Mesopotamia, and the Aegean; Greek and Roman architecture, sculpture, and painting.

**ART 4834: PRE-COLUMBIAN ART**

Arts of the high civilizations of Meso-American and the Central Andes up to the Spanish conquest; lectures, class discussions, field trips, and individual projects.

**ARTS 4837: THE HUMAN FORM**

Investigation of the image of man and woman in western and non-western traditions; emphasis on development of sculpture.

**ARTS 4839: ART, SCIENCE, AND TECHNOLOGY**

Art in relation to recent advances in science and technology; lectures, field trips, class discussions, and individual projects.

**ARTS 4931: SELECTED TOPICS IN ART**

*(Identified by specific title each time course is offered.)*

**ARTS 49v9: PROJECTS IN ART**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and instructor.)*

**ARTS 5231: CERAMIC STUDIO**

*Prerequisite: Permission of instructor.* Supervised projects. (May be repeated for credit.)

**ARTS 5331: PAINTING-DRAWING**

*Prerequisite: permission of instructor.* Supervised projects. (May be repeated for credit.)

**ARTS 5431: PRINTMAKING**

*Prerequisite: Permission of instructor.* Supervised projects. (May be repeated for credit.)

**ARTS 59v9: PROBLEMS IN ART**

*(Variable credit, 1-6 semester hours.)*  
*Prerequisite: approval of advisor and instructor.*

**ARTS 6231: CERAMIC STUDIO**

*Prerequisite: Permission of instructor.* Independent study. (May be repeated for credit.)

**ARTS 6331: PAINTING-DRAWING**

*Prerequisite: Permission of instructor.* Independent study. (May be repeated for credit.)

**ARTS 6431: PRINTMAKING**

*Prerequisite: Permission of instructor.* Independent study. (May be repeated for credit.)

## ASTRONOMY AND SPACE SCIENCE

**ASTR 3131: MODERN ASTRONOMY**

Current knowledge and theories in astronomy; formation of galaxies, stars, and planets; black holes, pulsars, quasars, and related phenomena.

**ASTR 3331: STARS AND GALAXIES**

*Prerequisite: Calculus.* Cosmology and the evolution of stars; galaxies, interstellar medium, and the nature, variety, and measurement of stars.

**ASTR 3332: THE SOLAR SYSTEM**

*(Formerly PHYS 3033)*  
*Prerequisite: Calculus.* Gravitation, mechanics of the solar system, and the physical nature of the sun, planets, comets, meteoroids, and interplanetary medium.

**ASTR 3739: FIELD EXPERIENCES IN SPACE SCIENCE**

*Prerequisites: 12 semester hours in Astronomy and Space Science and approval of program director.* Supervised field experiences with an approved space science agency or laboratory; written and oral reports required.

**ASTR 39v9: PROJECTS IN ASTRONOMY AND SPACE SCIENCE**

*(Variable credit, 1-6 semester hours.)*  
*Prerequisites: Approval of advisor and instructor.*

**ASTR 4131: SOLAR PHYSICS AND SOLAR ENERGY**

*Prerequisites: Calculus and College Physics.* Atmosphere and interior of the sun; fusion processes, solar winds, and terrestrial utilization of solar energy.

**ASTR 4132: STELLAR PHYSICS**

*Prerequisites: MATH 4131 and PHYS 3432.* Radiation from stars and nebulae as determinants of the compositions and physical conditions of matter in and between the stars; stellar nuclear energy sources.

**ASTR 4133: CELESTIAL MECHANICS**

*Prerequisites: ASTR 3331 and MATH 4131.* Stellar and solar system dynamics; orbits and rotations; gravitational fields and masses.

**ASTR 4231: METEOROLOGY***(Formerly PHYS 3034)*

*Prerequisite: General Physics.* Weather phenomena and the physical properties underlying them; interpretation of weather systems through the application of fluid mechanics.

**ASTR 4232: CLIMATOLOGY**

*Prerequisite: General Physics.* Atmospheric structure and motions; oceano-atmospheric interactions, energy exchanges, and induced patterns of weather formation.

**ASTR 4331: INTRODUCTION TO GEOPHYSICS**

*Prerequisite: General Physics or GEOL 3031, or equivalent.* Earth as a planetary body; structure, atmosphere, geomagnetism, and radiation belts.

**ASTR 4332; 4333: EARTH OBSERVATION**

*Prerequisite: Calculus.* Earth observation from atmospheric craft and from satellites; implications for agriculture, environmental control, and natural resource development.

**ASTR 4531: PLANETARY ATMOSPHERE**

*Prerequisites: Calculus and General Physics.* Atmospheric composition and characteristics of primary and secondary planetary bodies; applications of planetary observation data, solar wind effects, and related topics.

**ASTR 4721: RESEARCH SEMINAR IN SPACE SCIENCE**

*Prerequisite: 12 semester hours in Astronomy and Space Science.* Current foci of theoretical astronomy; individual investigative assignments and reports.

**ASTR 4931: SELECTED TOPICS IN SPACE SCIENCE**

*(Identified by specific title each time course is offered.)*

**ASTR 5131: STELLAR ATMOSPHERES**

Spectral line formation and stellar continuum radiation; comparisons of space and ground observations; stellar atmospheric theories.

**ASTR 5132: INTERSTELLAR AND INTERPLANETARY MEDIUM**

Composition of the interstellar and interplanetary medium; analysis of data from interplanetary probes, satellites, and radio and ground observations.

**ASTR 5133: PARTICLES, FIELDS, AND PLASMAS**

*Prerequisites: MATH 4531 and PHYS 3432.* Dynamics of collisionless plasma, wave interaction, particle acceleration mechanisms, and plasma stability.

**ASTR 5931: RESEARCH TOPICS IN SPACE SCIENCE**

*(Identified by specific title each time course is offered.)*

**ASTR 59v9: PROBLEMS IN SPACE SCIENCE**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**ASTR 6131: SOLAR SYSTEM COSMOGONY**

Origins of planetary bodies as deduced from recent space probe data; contributions of the lunar landing missions to current theory.

**AVIONICS TECHNOLOGY****AVIN 3122: INTRODUCTION TO AVIONICS**

*Prerequisites: PROC 3132, and CTEC 3132 or equivalents.* Functions and operations of aircraft electronic systems; related FCC and FAA regulations and procedures.

**AVIN 3133: MICROWAVE SYSTEMS**

*Prerequisites:* PROC 3132, MATH 3332, and CTEC 3132, or equivalents. Microwave systems; electromagnetic waves and radiating systems. (Laboratory instruction)

**AVIN 39v9: PROJECTS IN AVIONICS INSTRUMENTATION**

*(Variable credit, 1-6 semester hours)*

*Prerequisite:* approval of advisor and project director. Individual projects and laboratory investigations in avionics instrumentation.

**AVIN 4131: AIRCRAFT COMMUNICATION SYSTEMS**

*Prerequisite or Corequisite:* AVIN 3122, CTEC 3331 or equivalent. Aircraft VHF, UHF, HF, and interphone systems; test equipment techniques and requirements for FCC licensing. (Laboratory instruction)

**AVIN 4132: AIRCRAFT NAVIGATION SYSTEMS**

*Prerequisites:* AVIN 3122 and CTEC 3331 or equivalents. VOR, ILS, ADF, DME, glidescope, marker beacon, and integrated navigation systems. (Laboratory instruction)

**AVIN 4133: AIRCRAFT RADAR SYSTEMS**

*Prerequisites:* AVIN 3122 and CTEC 3331 or equivalents. Weather radar, radio altimeters, Doppler navigation systems and ATC transponders. (Laboratory instruction)

**AVIN 4134: AIRCRAFT ELECTRICAL AND INSTRUMENT SYSTEMS**

*Prerequisites:* AVIN 3122 and CTEC 3331 or equivalents. Aircraft electrical power sources, wiring requirements, monitoring and alarm systems, compasses, and autopilot systems. (Laboratory instruction)

**AVIN 4331: TELEMETRY SYSTEMS**

*Prerequisite:* CTEC 3331 or equivalent. Transmitting and receiving data over digital channels; encoding, quantization, and channel coding strategies.

**AVIN 4332: ANTENNAS**

*Prerequisites:* CTEC 3331, MATH 3333, and AVIN 3133, or equivalent. Radiation from point sources, lines, apertures, arrays, and networks.

**AVIN 4531: INSTALLING AND MAINTAINING AVIONICS SYSTEMS**

*Prerequisites:* AVIN 3122 and CTEC 3331 or equivalents. Modern hardware and software techniques for installing, checking out, and troubleshooting avionic systems. (Laboratory instruction).

**AVIN 4931: SELECTED TOPICS IN AVIONICS**

*(Identified by specific title each time course is offered.)*

**AVIN 4939: UNDERGRADUATE HONORS PROJECT**

*Prerequisites:* 36 hours of upper-level credit and approval of program director.

**AVIN 5131: MICROWAVE TRANSMITTERS AND RECEIVERS**

*Prerequisites:* AVIN 3133, CTEC 3331, and MATH 3333, or equivalent. Comparative study of modern hardware techniques employed in microwave transmitters, and receivers; emphasis on solid state devices.

**AVIN 5331: TECHNIQUES OF DIGITAL SIGNAL PROCESSING**

*Prerequisite or Corequisite:* CTEC 5331. Applications of Fourier series, convolution integrals, FFT's, sampling theory, orthogonal representations, and digital filtering.

**AVIN 5332: ADVANCED ANTENNA THEORY**

*Prerequisites: CTEC 5331 and AVIN 4332 or equivalent.* Comparative characteristics of modern antennas; electrically small antennas, arrays, and aperture antennas, with emphasis on measurement and evaluation.

**AVIN 5531: COMPUTER MODELING OF AVIATION PROCESSES**

*Prerequisites: Previous work in avionics, a course in stochastic processes, and compiler language proficiency.* Applications of computer modeling to aviation processes; materials, structures, and flight dynamics. (Laboratory instruction)

**AVIN 5931: RESEARCH TOPICS IN AVIONICS INSTRUMENTATION**

*(Identified by specific title each time course is offered.)*

**AVIN 59v9: PROBLEMS IN AVIONICS INSTRUMENTATION**

*(Variable credit, 1-6 semester hours.)*  
*Prerequisite: approval of advisor and project director.*

**AVIN 6131: INTEGRATED AVIONICS INSTRUMENTATION SYSTEMS**

*Prerequisites: AVIN 5331 and CTEC 5331.* Modern integrated aircraft instrumentation systems; computer monitoring of navigation, communications, meteorology, and flight control.

**AVIN 6331: AEROSPACE COMMUNICATIONS AND TELEMETRY TECHNIQUES**

*Prerequisites: AVIN 4331, AVIN 5331 and CTEC 5331.* Problems and techniques encountered in space communications and telemetry systems; long distance transmission, wave propagation, and spacecraft guidance and control.

**AVIN 6939: MASTER'S THESIS RESEARCH****BILINGUAL EDUCATION****BLNG 3731: BILINGUAL STUDENT TEACHING**

*Corequisite: ELEM 3731.* Supervised field experiences in mechanics of teaching in the bilingual classroom.

**BLNG 39v9: PROJECTS IN BILINGUAL EDUCATION**

*(Variable credit, 1-6 semester hours)*  
*Prerequisite: approval of advisor and project director.* Individual projects and planned readings in bilingual education.

**BLNG 4931: SELECTED TOPICS IN BILINGUAL TEACHING**

*(Identified by specific title each time course is offered.)*

**BLNG 5031: INSTRUCTIONAL PROBLEMS OF THE BILINGUAL CLASSROOM**

Specialized techniques, processes, and materials designed to meet the unique needs of the non-English speaking child.

**BLNG 5032: CURRICULUM PROBLEMS IN EDUCATING THE BILINGUAL**

Programmatic considerations for designing effective instructional sequences for bilingual children; opportunities for individual case studies.

**BLNG 57v9: PRACTICUM IN BILINGUAL TEACHING**

*(Variable credit, 1-6 semester hours)*  
*Prerequisite: approval of advisor and program director.* Directed field experiences in a bilingual educational setting.

**BLNG 5931: RESEARCH TOPICS IN BILINGUAL EDUCATION**

*(Identified by specific title each time course is offered.)*

**BLNG 59v9: PROBLEMS IN BILINGUAL EDUCATION***(Variable credit, 1-6 semester hours)**Prerequisite: approval of advisor and problems director.***BIOLOGY****BIOL 3015: DEVELOPMENT OF THE LIFE SCIENCES***Temporal relationships of major figures, theories, and discoveries with the emergence of modern concepts in the life sciences.***BIOL 3032: FUNDAMENTALS OF LIFE SCIENCE***Similarities and differences in structure, function, and life cycles of living matter as related to man-initiated disruptions of eco-systems.***BIOL 3033; 3034: HUMAN ANATOMY***Corequisite: BIOL 3013; 3014. Fundamentals of human anatomy and physiology; emphasis on etiology and functions of anatomical systems.***BIOL 3013; 3014: LABORATORY FOR HUMAN ANATOMY***Corequisite: BIOL 3033; 3034. Three laboratory hours per week.***BIOL 3131: COMPARATIVE VERTEBRATE STRUCTURE AND EMBRYONIC DEVELOPMENT***Prerequisite: General Biology; corequisite: BIOL 3111. Study of vertebrate structure and embryonic development.***BIOL 3111: LABORATORY FOR COMPARATIVE VERTEBRATE STRUCTURE AND DEVELOPMENT***Corequisite: BIOL 3131. Three laboratory hours each week.***BIOL 3132: GENERAL ENTOMOLOGY***Prerequisite: General Biology; Post or corequisite: BIOL 3112. Biology of insects; form, function, classification, behavior, and ecological relationships including effects on man.***BIOL 3112: LABORATORY FOR GENERAL ENTOMOLOGY***Pre or Corequisite: BIOL 3132. Three laboratory hours each week.***BIOL 3133: PLANT ANATOMY***Prerequisite: General Biology; corequisite: BIOL 3113. Structures, tissues, and cells of vegetative organs related to concepts of growth, differentiation, and organization.***BIOL 3113: LABORATORY FOR PLANT ANATOMY***Corequisite: BIOL 3133. Three laboratory hours each week.***BIOL 3134: PLANT PHYSIOLOGY***Prerequisites: CHEM 3212 and CHEM 3232; corequisite: BIOL 3114. Physiological processes of plants.***BIOL 3114: LABORATORY FOR PLANT PHYSIOLOGY***Corequisite: BIOL 3134. Three laboratory hours each week.***BIOL 3331: GENETICS***Prerequisite: 8 semester hours in Biology. The principles of genetics, including genetics and evolution of populations.*

**BIOL 3332: BIO–ECOLOGY**

*Prerequisite: General Biology.* Relation of organisms to their environments.

**BIOL 3333: ENVIRONMENTAL BIOLOGY**

*Prerequisite: General Biology.* Effects of pollutants on organisms and the ecology.

**BIOL 3334: PUBLIC HEALTH MICROBIOLOGY**

*Prerequisite: Elementary Microbiology.* Identification and control of infectious diseases important in protecting public health.

**BIOL 3335: EPIDEMIOLOGY**

The incidence, causes, and control of diseases in population.

**BIOL 3631; 3632: PRINCIPLES OF HUMAN PHYSIOLOGY**

*Prerequisite: General Biology.* Neuromuscular, heart and circulatory and endocrine systems; brain and special senses, body fluids and kidney functions, respiration, digestion, temperature and metabolism. (Laboratory required)

**BIOL 3611; 3612: LABORATORY FOR PRINCIPLES OF HUMAN PHYSIOLOGY**

*Pre or Corequisite: BIOL 3631; 3632.* Three laboratory hours each week.

**BIOL 39v9: PROJECTS IN BIOLOGY**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and project director.* Individualized projects and planned readings in the biological sciences.

**BIOL 4011; 4012: LABORATORY FOR LIFE SCIENCE FOR TEACHERS I AND II**

*Corequisite: BIOL 4031, 4032.*

**BIOL 4031; 4032: LIFE SCIENCES FOR TEACHERS I AND II**

*Corequisite: BIOL 4011; 4012.* Recent developments in plant and animal physiology, ecology, and environmental science; emphasis on approach to biology from a contemporary standpoint.

**BIOL 4131: CELLULAR PHYSIOLOGY**

*Prerequisite: 12 semester hours in Biology and Chemistry; post or corequisite: BIOL 4111.* Cell structure and function; emphasis on cytological, biochemical, genetical and developmental perspectives.

**BIOL 4111: LABORATORY FOR CELLULAR PHYSIOLOGY**

*Pre or Corequisite: BIOL 4131.* Three laboratory hours each week.

**BIOL 4231: MARINE BIOLOGY**

*Prerequisites: General Biology and General Chemistry.* Study of marine organisms and their environment. (Laboratory required)

**BIOL 4211: LABORATORY FOR MARINE BIOLOGY**

*Pre- or corequisite: BIOL 4231.* Three laboratory hours each week.

**BIOL 4232: MARINE INVERTEBRATE PHYSIOLOGY**

*Prerequisites: General Biology and Organic Chemistry.* Physiology of organ systems in marine invertebrates. (Laboratory required)

**BIOL 4212: LABORATORY FOR MARINE INVERTEBRATE PHYSIOLOGY**

*Pre- or corequisite: BIOL 4232.* Three laboratory hours each week.

**BIOL 4233: PHYSIOLOGY OF FISHES**

*Prerequisites: General Biology and Organic Chemistry.* Study of organ systems of fishes. (Laboratory required)

**BIOL 4213: LABORATORY FOR PHYSIOLOGY OF FISHES**

*Pre- or corequisite: BIOL 4233.* Three laboratory hours each week.

**BIOL 4234: AQUATIC MICROORGANISMS**

Microorganisms in fresh, brackish, and saline environments. (Laboratory required)

**BIOL 4214: LABORATORY FOR AQUATIC MICROORGANISMS**

*Pre- or corequisite: BIOL 4234.* Three laboratory hours each week.

**BIOL 4331: IMMUNOLOGY**

*Prerequisite: General Biology.* Microbiological and immunological aspects of infectious diseases. (Laboratory required)

**BIOL 4311: LABORATORY FOR IMMUNOLOGY**

*Pre- or corequisite: BIOL 4331.* Three laboratory hours each week.

**BIOL 4332: HISTOLOGY**

*Prerequisite: General Biology.* Microscopic study of animal tissues. (Laboratory required)

**BIOL 4312: LABORATORY FOR HISTOLOGY**

*Pre- or Corequisite: BIOL 4332.* Three laboratory hours each week.

**BIOL 4531: MICROSCOPIC ANALYSIS**

Analytical applications of the scanning electron microscope. (Laboratory instruction)

**BIOL 4631: THE CENTRAL NERVOUS SYSTEM**

*Prerequisite: BIOL 3631 or 3033 or equivalent.* Organization and function of the brain and spinal cord; regions and pathways, neural interaction, reflexes, and neuro-electrical activity.

**BIOL 4632: THE NERVE CELL**

*Prerequisite: 12 semester hours in biology or biological chemistry.* The integrative role of the nerve cell: structural and functional elements of neurons, neurotransmitters, neural conduction and synaptic communication.

**BIOL 4633: NEUROCHEMISTRY**

Excitable membranes and neurotransmitters; biogenic amines, lipids, proteins, peptides, and nucleic acids in neural function.

**BIOL 4634: BRAIN AND BEHAVIOR**

*Prerequisite: BIOL 4631 or equivalent.* Neuronal and hormonal bases of coordinated movement, perception, and intelligent behavior; measuring and interpreting behavioral manifestations of neural activity.

**BIOL 4635: PSYCHOACTIVE DRUGS**

*Prerequisite: BIOL 4633 or equivalent.* Effects of psychoactive compounds on the central nervous system and on behavior; attention to the major classes of such drugs.

**BIOL 4721: SEMINAR IN MARINE BIOLOGY**

Discussion and analysis of current theory and research in marine biology.

**BIOL 4722: SEMINAR IN PHYSIOLOGY**

Discussion and analysis of current theory and research in physiology.

**BIOL 4931: SELECTED TOPICS IN THE BIOLOGICAL SCIENCES**

*(Identified by specific title each time course is offered.)*

**BIOL 5131: VITAMINS, MINERALS AND ENZYMES**

*Prerequisites: BIOL 3632 and CHEM 4331.* Biochemical, physiological, and biophysical interrelationships of vitamins, essential minerals, and enzymes.

**BIOL 5132: PROTEINS AND AMINO ACIDS**

*Prerequisites: BIOL 3632 and CHEM 4331.* Protein structure and synthesis; metabolic processes and reactions, and effects of nutritional deficiencies.

**BIOL 5133: LIPIDS AND CARBOHYDRATES**

*Prerequisites: BIOL 3632 and CHEM 4331.* Metabolic pathways for lipids and carbohydrates; problems in metabolism; biochemical and physiological considerations.

**BIOL 5931: RESEARCH TOPICS IN BIOLOGY**

*(Identified by specific title each time course is offered.)*

**BIOL 59v9: PROBLEMS IN BIOLOGICAL SCIENCES**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**BIOL 6631: THE BIOLOGY OF MENTAL DYSFUNCTION**

Survey of research efforts to discover genetic and biochemical factors of mental disorders.

**BIOL 6632: BIOLOGICAL BASES OF LEARNING AND MEMORY**

Survey of research efforts to discover the biological mechanisms for memory formation and learning.

**BIOL 6939: MASTER'S THESIS RESEARCH****CHEMISTRY****CHEM 3121: STEREOCHEMISTRY**

*Prerequisite: General Chemistry.* Applications of steric factors in molecular structure to physical properties and chemical reactivity; emphasis on biochemical and polymerization reactions.

**CHEM 3331: INDUSTRIAL MATERIALS**

Chemical and physical properties of structural materials; implications for construction and industrial plant equipment.

**CHEM 3332: BIOMEDICAL MATERIALS**

Chemical and physical properties of materials compatible with living organisms; problems associated with fabrication, implantation, rejection, and extended functioning.

**CHEM 39v9: PROJECTS IN CHEMISTRY**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: Approval of advisor and project director.*

**CHEM 40II; 4012: LABORATORY FOR CHEMISTRY FOR TEACHERS I AND II**

*Corequisite: CHEM 4031; 4032.*

**CHEM 4031; 4032: CHEMISTRY FOR TEACHERS I AND II**

*Corequisite: CHEM 4011; 4012.* Modern concepts in inorganic, physical, and organic chemistry and in biochemistry; emphasis on teaching chemistry from a contemporary standpoint.

**CHEM 4231;4232: PHYSICAL CHEMISTRY**

*Prerequisites: General Chemistry, Calculus, and College Physics or equivalent.* States of matter, thermodynamics, kinetics, solutions, phase equilibria, and molecular structure. (Laboratory required)

**CHEM 4211; 4212: LABORATORY FOR PHYSICAL CHEMISTRY**

*Pre- or corequisite: CHEM 4231; 4232.* Three laboratory hours each week.

**CHEM 4331: BIOLOGICAL CHEMISTRY**

*Prerequisite: Organic Chemistry.* Chemistry of constituents of living systems; regulation of vital processes at the cellular and multicellular levels. (Laboratory required)

**CHEM 4321: LABORATORY FOR BIOLOGICAL CHEMISTRY**

*Pre- or corequisite: CHEM 4331.* Six laboratory hours each week.

**CHEM 4335: INORGANIC CHEMISTRY**

*Pre- or corequisite: CHEM 4232.* Concepts and systems of inorganic chemistry; atomic structure, molecular structure and bonding, ionic crystals, defect solid state, and coordination compounds.

**CHEM 4441: SYNTHETIC ORGANIC CHEMISTRY**

*Prerequisites: Organic Chemistry and CHEM 3121.* Concepts of synthesis planning; methods of organization in a multistep reaction sequence.

**CHEM 4442: SYNTHETIC INORGANIC CHEMISTRY**

*Prerequisite: CHEM 3121.* Synthesis and application of transition metal complexes and bioinorganic compounds; mechanisms of inorganic reactions.

**CHEM 4423: LABORATORY FOR SYNTHETIC CHEMISTRY**

*Pre- or corequisite: CHEM 4441 or CHEM 4442.* Experimental applications of synthetic and analytic methods in preparation of complex organic and inorganic compounds. Six laboratory hours each week.

**CHEM 4521: INSTRUMENTAL METHODS OF ANALYSIS**

*Prerequisite: CHEM 4232.* Theory of optical, chromatographic, and electroanalytical methods of chemical analysis. (Laboratory required)

**CHEM 4522: INSTRUMENTAL METHODS LABORATORY**

*Pre- or Corequisite: CHEM 4521.* Application of instrumental methods of chemical analysis. Six laboratory hours each week.

**CHEM 4631: PHYSICAL PROPERTIES OF POLYMERS**

*Prerequisites: Organic Chemistry and CHEM 3121.* Assigning structure to polymers through analysis of mechanical and chemical properties. (Laboratory required)

**CHEM 4611: LABORATORY FOR PROPERTIES OF POLYMERS**

*Pre- or corequisite: CHEM 4631.* Analysis of polymers through electron microscopy; determination of molecular weights and of mechanical and surface properties. Three laboratory hours each week.

**CHEM 4632;4633: CHEMICAL PROPERTIES OF POLYMERS**

*Prerequisites: Organic Chemistry and CHEM 3121.* Classification of polymers, polymerization kinetics, copolymerization, and cross-linking; properties of natural polymers. (Laboratory required)

**CHEM 4613: LABORATORY FOR CHEMISTRY OF POLYMERS**

*Pre- or corequisite: CHEM 4633.* Three laboratory hours each week.

**CHEM 4634: POLYMERIZATION PROCESSES**

*Pre- or corequisite: CHEM 4632 or equivalent.* Synthesis and technology of polymers. (Laboratory required)

**CHEM 4614: LABORATORY FOR POLYMERIZATION PROCESSES**

*Pre- or corequisite: CHEM 4634.* Three laboratory hours each week.

**CHEM 4645; 4646: CHEMICAL SEPARATION AND IDENTIFICATION**

*Prerequisites: Organic Chemistry, and PROC 3131 or PROC 3133.* Techniques for identifying and separating mixtures; chemical and instrumental methods. (Laboratory instruction.)

**CHEM 4721: SEMINAR IN CHEMICAL ANALYSIS**

Theoretical approaches to solution of current problems in chemical analysis.

**CHEM 4931: SELECTED TOPICS IN CHEMISTRY**

*(Identified by specific title each time course is offered)*

**CHEM 5131: SCIENCE OF SURFACES**

*Prerequisite: PHYS 4335.* Characteristics and properties of materials surfaces; theories of adsorption; heterogeneous catalysis.

**CHEM 5132: CRYSTALLINE DISLOCATIONS**

*Prerequisite: PHYS 4335.* Crystal defects and resultant physical and mechanical properties of materials.

**CHEM 5123: MATERIALS SCIENCE LABORATORY**

*Pre- or corequisite: CHEM 5132.* Optical and physical methods in metallurgical studies; recognition and definition of crystal defects by means of optical and scanning electron microscopy. Six laboratory hours each week.

**CHEM 5931: RESEARCH TOPICS IN CHEMISTRY**

*(Identified by specific title each time course is offered.)*

**CHEM 59v9: PROBLEMS IN CHEMISTRY**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**CHEM 6939: MASTER'S THESIS RESEARCH****COMMUNICATIONS****COMM 3031: SPEECH FOR PROSPECTIVE TEACHERS**

Principles of oral communication, emphasizing effective use of speech in school settings.

**COMM 3037: ADVANCED WRITING**

From invention of ideas to strategies appropriate to various kinds of writing. Models of organization, analysis of style, role and importance of mechanics and syntax.

**COMM 3131: ORAL COMMUNICATIONS IN BUSINESS**

Oral requirements in business situations; conference leadership, interviews, proposal presentations, and negotiations.

**COMM 3132: WRITTEN COMMUNICATIONS IN BUSINESS**

Theory and practices of business communications; preparation of effective letters, policy statements, procedures, reports, and related documents.

**COMM 3133: ORGANIZATIONAL COMMUNICATION**

A study of theories and practices in organizational communication; dissemination of information in organizational settings; effectiveness, relative costs, and feedback potential.

**COMM 3135: TECHNICAL WRITING**

Approaches, through good models and bad, to the writing of proposals, reports, recommendations, and descriptions of mechanisms and processes. The technical article and the abstract. The oral presentation.

**COMM 3231: WRITING FOR THE MEDIA**

Introduction to the fundamental writing and fact-gathering skills of journalism, advertising, and public relations for print and electronic media.

**COMM 3431: THE HISTORY OF MASS MEDIA**

Development of the media as they have been shaped by political, cultural, and social factors; philosophies of exploitation and censorship, from the first printing press to the present.

**COMM 3531: THE MASS MEDIA AND SOCIETY**

Aims and influences of newspaper and magazine publication, mass-advertising, especially television-radio-film. Case study approach: newspaper policies and the federal government, magazines and their readers, consumer emotions, social implication of TV and film stereotypes and biases.

**COMM 3533: UNDERSTANDING ADVERTISING**

Scrutiny of advertising assumptions and approaches, means and ends. Contributions of economic planning, psychology, and technology to the systematic direction of consumer behavior.

**COMM 3535: THE TELEVISION CULTURE**

Analysis of the impact of television on modern life. Case study approach: early TV, live vs. tape and film, the genesis and appeal of "hits," TV and schools, network fare vs. educational broadcasting.

**COMM 3731: SEMINAR IN CREATIVE WRITING**

*Prerequisite: Permission of instructor.* Practice in writing fiction, poetry, or drama; emphasis on critical discussion of participants' work.

**COMM 4031: JOURNALISM FOR THE HIGH SCHOOL TEACHER**

Principles of journalistic writing; emphasis on problems of supervising student newspapers, yearbooks, and other school publications.

**COMM 4231: POETRY WRITING**

Theory, practice, and criticism in the atmosphere of a group workshop.

**COMM 4233: FICTION WRITING**

Theory, practice, and criticism in the atmosphere of a group workshop.

**COMM 4235: PLAYWRITING**

Theory and practice of dramatic composition. Exercises in plot-construction, characterization, handling of stage-business. Successful and unsuccessful examples from dramatic literature, both contemporary and earlier.

**COMM 4331: THE CRITICAL REVIEW**

Composing reviews of movies, television programs, drama productions, recent literature, and the arts. Analysis of good and bad models in newspaper, magazines, and television.

**COMM 4333: SCRIPT WRITING**

Generation of ideas, model forms: film, TV, radio-news, entertainment, documentary.

**COMM 4531: NEWS**

Selection of what is newsworthy, editorial and report writing, news styles, investigative reporting, the problem of verification, impact on audience and newsmakers.

**COMM 4533: POPULAR JOURNALISM**

Definitions of "popular" and "serious," analysis of popular myths created in magazines and newspapers, topology, sensitivity of popular culture to social aims and anxieties, the New Journalism, "gonzo" and other subjectivist approaches.

**COMM 4535: COMMUNITY JOURNALISM**

Organization and production of neighborhood journalism, roles and functions of local newspapers and dispersal of local information, community involvement of amateurs and semi-professionals.

**COMM 4631: THE DOCUMENTARY**

Development of documentary film and video tape for industrial, political, educational, and cultural uses. Critical viewing of major works.

**COMM 4633: FILM PROPAGANDA**

History of the propaganda film, analysis of rhetoric and content, effects on public life. Critical viewing of classics: Soviet revolutionary films by Eisenstein, Pudovkin, and Dovzhenko; Nazi publicity by Leni Riefenstahl and German war newsreels; American WWII mobilization of Hollywood, documentaries of the 60's and 70's.

**COMM 4931: SELECTED TOPICS IN COMMUNICATIONS**

*(Identified by a specific title each time course is offered.)*

**COMM 49v9: PROJECTS IN COMMUNICATIONS**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: Permission of advisor and instructor.*

**COMM 5931: RESEARCH TOPICS IN COMMUNICATIONS**

*(Identified by specific title each time course is offered.)*

**COMM 59v9: PROBLEMS IN COMMUNICATIONS**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: Approval of advisor and instructor.*

## COMPUTER SCIENCE

**CSCI 3111: TIME-SHARING LANGUAGE SKILLS**

Laboratory introduction to time sharing languages; use of the computer as a tool in academic coursework. (Laboratory instruction)

**CSCI 3132: INTRODUCTION TO COMPUTER SCIENCE**

Modular programming approach to implementing scientific and technical algorithms in ANSI FORTRAN. (Laboratory instruction.)

**CSCI 3231; 3232: NUMERICAL METHODS**

*Prerequisites: Calculus, CSCI 3111 and CSCI 3132.* Computer solutions of linear and non-linear systems, approximation, interpolation, differentiation, integration, and differential equations. (Laboratory instruction)

**CSCI 3331: ASSEMBLY LANGUAGE PROGRAMMING FOR MINICOMPUTERS AND MICROPROCESSORS**

Emphasis on requirements and techniques of data treatments and on I/O transfers in process monitoring and control unit operations. (Laboratory instruction)

**CSCI 3332: COMPUTER ORGANIZATION AND PROGRAMMING**

*Prerequisites: CSCI 3111 and CSCI 3132.* Organization of systems hardware and software. Principles of programming, scheduling, and control in multiprocessing and time sharing environments.

**CSCI 39v9: PROJECTS IN COMPUTER SCIENCE**

*(Variable credit, 1-6 semester hours.)*

*Prerequisite: approval of advisor and project director.* Individual projects and laboratory investigations in computer science. (Laboratory instruction)

**CSCI 4131: MATHEMATICAL MODELING FOR MANAGERIAL SCIENCE**

*Prerequisites: CSCI 3111 and 12 hours of management science or equivalent.* Techniques of simulating general management decisions; utilizing information from marketing, production, finance, and industrial relations. (Laboratory instruction)

**CSCI 4133: MATHEMATICAL MODELING FOR APPLIED SCIENCES**

*Prerequisites: MATH 4235 and compiler language experience.* Techniques of simulating physical, environmental, and biological processes. (Laboratory instruction)

**CSCI 4136: INTERACTIVE LEARNING SYSTEMS**

Automated learning systems; function learning, self-organization and abstraction; techniques used for CAI and CMI. (Laboratory instruction)

**CSCI 4138: HEALTH INFORMATION PROCESSING**

*Prerequisite: compiler language experience.* Information processing applications in health care; biomedical research, patient records, diagnostic decision-making, and biomedical documentation.

**CSCI 4331: DATA PROCESSING LANGUAGES**

Extended usage of COBOL, RPG, and related data processing languages. (Laboratory instruction)

**CSCI 4332: CONSTRUCTION OF ASSEMBLERS, LOADERS AND MONITORS**

*Prerequisites: CSCI 4532, CSCI 3331, and CTEC 3531.* Systems programming approach to development and implementation. Emphasis on considerations of real time and time sharing environments. (Laboratory instruction)

**CSCI 4333: DESIGN OF DATA BASE SYSTEMS**

*Prerequisites: Compiler language experience and approval of Program Director.* Files, sorts, retrieval algorithms; and problems of feasibility in data base management systems.

**CSCI 4531: FORMAL LANGUAGES**

*Prerequisites: CSCI 3332 and CTEC 3132.* Linguistic analysis of programming languages, structure of statements and algorithms: list processing, string manipulation, and symbol substitution. Uses ALGOL, APL and PL 1.

**CSCI 4532: ANALYSIS OF DATA STRUCTURES**

*Prerequisites:* CSCI 3331, CSCI 3332, and CTEC 3132. Data structure configurations: stacks, linked lists, dynamic storage allocation, and symbol manipulation algorithms.

**CSCI 4533: THEORY OF INTERPRETERS AND COMPILERS**

*Prerequisites:* CSCI 4531, CSCI 4532, and CTEC 3531. Applications of theoretical concepts, syntactic and semantic notation; analysis of translators, algorithms for reducing compiler size and increasing compiler speed. (Laboratory instruction)

**CSCI 4731: SEMINAR ON INSTRUCTIONAL APPLICATIONS OF THE COMPUTER IN EDUCATION**

Current trends, methodology and future expectations.

**CSCI 4732: SEMINAR ON ADMINISTRATIVE APPLICATIONS OF THE COMPUTER IN EDUCATION**

*Prerequisite:* Familiarity with a computer language and concepts of MIS. Current trends, methodology and future expectations. (Laboratory instruction)

**CSCI 4931: SELECTED TOPICS IN COMPUTER SCIENCE**

*(Identified by specific title each time course is offered.)*

**CSCI 4939: UNDERGRADUATE HONORS PROJECT**

*Prerequisites:* 36 hours of upper-level credit and approval of Program Director.

**CSCI 5031: MATRIX ALGEBRA SOFTWARE WITH STATISTICAL APPLICATIONS**

*Prerequisites:* compiler language proficiency and a course in statistics. Software techniques used with matrix operations for regression analysis, linear statistical models, and related topics. (Laboratory instruction)

**CSCI 5032: SEMINAR ON APPLICATIONS OF THE COMPUTER IN GUIDANCE AND COUNSELING**

*Prerequisites:* Familiarity with a computer language and 9 credit hours in guidance and counseling. Current trends, methodology and future expectations.

**CSCI 5131; 5132: SIMULATION TECHNIQUES**

*Prerequisites:* Compiler language and hardware proficiency and MATH 4134 or 4235. Modern techniques in model construction for industrial and scientific uses; special-purpose simulation languages.

**CSCI 5331: COMPUTER GRAPHICS**

*Prerequisites:* CSCI 4531, CSCI 4532, and CTEC 3531. On-line computer graphics and graphics software; display memory, generations of points, display algorithms and graphics languages. (Laboratory instruction)

**CSCI 5531: ANALYSIS OF OPERATING SYSTEMS**

*Prerequisites:* CSCI 4532, CSCI 4531, and CTEC 3531. Theoretical and comparative analyses of batch, time-sharing, real-time, multi-programming, and multi-processor systems.

**CSCI 5532: PATTERN RECOGNITION AND IMAGE PROCESSING**

*Prerequisites:* CSCI 5031, CSCI 4532, and CTEC 5332. Software and hardware techniques for statistical pattern recognition and extracting useful information from pictures by automatic means.

**CSCI 5931: RESEARCH TOPICS IN COMPUTER SCIENCE**

*(Identified by specific title each time course is offered.)*

**CSCI 59v9: PROBLEMS IN COMPUTER SCIENCE***(Variable credit, 1-6 semester hours.)**Prerequisite: approval of advisor and project director.***CSCI 6531: SYNTHESIS AND IMPLEMENTATION OF OPERATING SYSTEMS***Prerequisite: CSCI 5531. Advanced concepts in job, task, data, and memory management; multi-programming and multi-processing. (Laboratory instruction)***CSCI 6532: SYNTHESIS AND IMPLEMENTATION OF COMPILERS***Prerequisite: CSCI 4533. Source languages, object code generation, operator and operand stacks, and subroutine and function compilation. (Laboratory instruction)***CSCI 6533: TURING MACHINES AND RECURSIVE FUNCTIONS***Prerequisites: 6 graduate hours in CSCI and CTEC 5332. Turing machines, primitive recursive functions, recursively enumerable sets, undesirability, models of effective computability.***CSCI 6534: FINITE AUTOMATA AND FORMAL LANGUAGES***Prerequisites: 6 graduate hours in CSCI and CTEC 5332. Mathematical theory of automata; abstract machines, decomposition theory, and grammar for formal languages.***CSCI 6939: MASTER'S THESIS RESEARCH****COMPUTER TECHNOLOGY****CTEC 3131: MEDIUM- AND LARGE-SCALE DIGITAL INTEGRATED CIRCUITS***Corequisite: CTEC 3111, MSI, LSI, MOS, bipolar and CCD circuits in digital systems.***CTEC 3111: LABORATORY FOR DIGITAL INTEGRATED CIRCUITS***Corequisite: CTEC 3131. Three laboratory hours each week.***CTEC 3132: LOGIC ANALYSIS WITH BOOLEAN ALGEBRA***Applications of topology and Boolean Algebra to asynchronous and synchronous circuits. (Laboratory instruction)***CTEC 3331: DIGITAL INFORMATION CODING AND COMMUNICATION***Prerequisite or Corequisite: CTEC 3132 and MATH 3333. Digital information coding and communication techniques; error detection and error correction circuitry. (Laboratory instruction)***CTEC 3531: COMPUTER ARCHITECTURE: MINIS AND MICROS***Prerequisites: CTEC 3132 and CSCI 3111. Control logic, addressing, registers, instructions, memory units, arithmetic elements, interrupts, and input-output structures. (Laboratory instruction)***CTEC 39v9: PROJECTS IN COMPUTER TECHNOLOGY***(Variable credit, 1-6 semester hours)**Prerequisite: approval of advisor and project director. Individual projects and laboratory investigations in computer technology.***CTEC 4131: TELECOMMUNICATIONS SYSTEMS AND DEVICES***Prerequisite: CTĒC 3331. Acoustic and hardwired couplers, modems, and multiplexers; PSK, QPSK, FSK, AM, PAM, PCM, FDM, and TDM systems. (Laboratory instruction)***CTEC 4132: MODULAR MEMORY SYSTEMS***Prerequisite: CTEC 3531. Digital memory techniques: magnetic cores, rods, and bubbles; metal ribbons, RAMS, ROMS, CCDS, PLAS and scratch pads.*

**CTEC 4133: INTERFACE SYNTHESIS TECHNIQUES**

*Prerequisites: CTEC 3131 and CTEC 3531; corequisite: CTEC 4113.* Synthesis, construction, and maintenance techniques for interfacing central processing units to peripherals in batch, time-sharing, and real-time environments.

**CTEC 4113: LABORATORY FOR INTERFACE SYNTHESIS TECHNIQUES**

*Corequisite: CTEC 4133.* Three laboratory hours each week.

**CTEC 4331: DIGITAL READERS AND PRINTERS**

*Prerequisite: CTEC 4133.* Digital readers and printers: optical and mechanical paper tape readers, card readers, punches, and hardcopy printers. (Laboratory instruction)

**CTEC 4332: MAGNETIC TAPES, DISCS, and DRUMS**

*Prerequisite: CTEC 4133.* Magnetic peripherals: tape transports, cassette/cartridge systems, fixed- and moving-head discs, drums, and floppy discs. (Laboratory instruction)

**CTEC 4333: DATA TERMINALS**

*Prerequisite: CTEC 3331.* Keyboards; CRT, LED, and plasma displays; impact, spray ink, and thermal printers; interactive light displays. (Laboratory instruction)

**CTEC 4334: PLOTTERS AND GRAPHICS HARDWARE**

*Prerequisite: CTEC 4133.* Matrix and xy plotters, digitizers, graphics displays, light pen displays and computer-controlled microfilm and microfiche displays. (Laboratory instruction)

**CTEC 4531: ANALOG COMPUTING SYSTEMS**

*Prerequisites: CTEC 3131 and PROC 3132.* Analog computing systems; software and hardware considerations of arithmetic networks and function generators. (Laboratory instruction)

**CTEC 4532: COMPUTER-AUTOMATED SYSTEMS**

*Prerequisites: CTEC 3531 and CSCI 3332.* Configurations of mini- and maxi-computers and microprocessors; data acquisition, supervisory control, and direct digital control systems.

**CTEC 4939: UNDERGRADUATE HONORS PROJECT**

*Prerequisites: 36 hours of upper-level credit and approval of program director.*

**CTEC 5331: THEORY OF INFORMATION AND CODING**

*Prerequisites: CTEC 3132 and MATH 3333 or equivalent.* Shannon's theory of information and coding applied to discrete communications channels; theory of finite fields applied to error detection and correction codes.

**CTEC 5332: SYNTHESIS OF SEQUENTIAL LOGIC SYSTEMS**

*Prerequisite: CTEC 3132 or equivalent.* Techniques of state assignment and minimization; synthesis of linear sequential networks and asynchronous sequential machines.

**CTEC 5531: HYBRID COMPUTER SYSTEMS**

*Prerequisites: CTEC 3531, CTEC 4531, MATH 3333 and compiler language proficiency.* Combined analog and digital computer systems; hardware and software applications.

**CTEC 5731: SEMINAR IN COMPUTER SYSTEMS ANALYSIS**

*Prerequisite: approval of program director.* Comparative- efficiency, effectiveness, and economics of modern computer systems.

**CTEC 5931: RESEARCH TOPICS IN COMPUTER TECHNOLOGY**

*(Identified by specific title each time course is offered.)*

**CTEC 59v9: PROBLEMS IN COMPUTER TECHNOLOGY**

*(Variable credit, 1-6 semester hours.)*

*Prerequisite: approval of advisor and project director.*

**CTEC 6131: COMPUTER AIDED NETWORK ANALYSIS**

*Prerequisites: CTEC 5331, CTEC 5332, MATH 4134, and compiler language proficiency.* Analysis and synthesis of logic circuitry for computer aided network analysis programs; active and passive device modeling. (Laboratory instruction.)

**CTEC 6132: COMPUTER MODELING, SIMULATION, AND EMULATION**

*Prerequisites: CTEC 5332, MATH 4134, and compiler language proficiency.* Software and hardware techniques for computer modeling, simulation, and emulation.

**CTEC 6331: THEORY AND SYNTHESIS OF DIGITAL FILTERS**

*Prerequisites: CTEC 5331 and CTEC 5332:* Transforms, convolutions, and numerical integration techniques for discrete time signal processing; problems of filter construction.

**CTEC 6531: PATTERN RECOGNITION AND ARTIFICIAL INTELLIGENCE**

*Prerequisites: CTEC 5331 and CTEC 5332:* Problems of "intelligent" systems: pattern recognition, neural nets, and visual and speech scanning/generating techniques.

**CTEC 6532: SYNTHESIS OF COMPUTER NETWORKS**

*Prerequisites: CTEC 4133, CTEC 4532, CTEC 5331, CTEC 5332, and CSCI 4532.* Problems of hierarchical and distributed networks incorporating micros, minis, and large scale processors and peripherals.

**CTEC 6939: MASTER'S THESIS RESEARCH****DIAGNOSTICS, EDUCATIONAL****DIAG 3731: DIAGNOSTIC AND PRESCRIPTIVE STUDENT TEACHING**

*Corequisite: ELEM 3731.* Supervised field experiences in mechanics of teaching exceptional children through diagnostic and prescriptive methods.

**DIAG 39v9: PROJECTS IN EDUCATIONAL DIAGNOSTICS**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and project director.* Individual projects and planned readings in educational diagnostics.

**DIAG 4031: TEACHING EXCEPTIONAL CHILDREN**

Survey of physical, behavioral, and learning characteristics and their implications for teaching all exceptional children; required for LLD endorsement. (Field experiences required)

**DIAG 4032: LANGUAGE DEVELOPMENT AND LEARNING DISABILITIES**

Overview of language development and learning processes and styles; required for LLD endorsement. (Field experiences required)

**DIAG 4131: DIAGNOSTIC INSTRUCTION FOR LLD STUDENTS**

Administration of specific diagnostic devices and techniques to determine appropriate teaching materials and approaches for language/learning disabilities.

**DIAG 4132: PROGRAMMING FOR LLD STUDENTS**

Development of individual and group programs to teach specific skills and meet children's educational needs.

**DIAG 4133: CURRICULUM MATERIALS AND APPLICATIONS**

Evaluation and development of commercial and teacher-made materials; curricular approaches for specific learning processes. (Field experience required)

**DIAG 4931: TOPICS IN DIAGNOSTIC TEACHING**

*(Identified by specific title each time course is offered.)*

**DIAG 5031: EXCEPTIONALITY IN CHILDREN AND YOUTH**

Characteristics of major categories of exceptional children; psychological and sociological implications for instruction.

**DIAG 5032: LANGUAGE DEVELOPMENT AND DISORDERS**

Language development and control of normal, delayed, and disordered language functions; understanding, evaluation, and remediation of language disorders.

**DIAG 5131: DIAGNOSIS OF EDUCATIONAL DISABILITIES**

Developmental patterns and appraisal techniques for determining extent of educational difficulties; language, learning, and other disabilities.

**DIAG 5132: CURRICULAR APPROACHES TO LEARNING DIFFICULTIES**

Causal factors and remedial alternatives for children with low performance records in regular school environments.

**DIAG 5133: PROGRAMMING FOR EDUCATIONAL DISABILITIES**

Prescriptive models for intervention in cases of educational difficulties; language, learning, and other disabilities.

**DIAG 5331: ISSUES IN EDUCATIONAL DISABILITY INTERVENTION**

Current issues in curriculum planning for disabled youth; social adjustment, nature, and needs.

**DIAG 5531: EDUCATIONAL APPRAISAL**

*Prerequisites: DIAG 5131, PSYC 6031 or equivalent, and approval of instructor.* Administration of specialized tests to determine sources of educational dysfunction; uses of test data in educational programming.

**DIAG 5532: INDIVIDUAL TESTING: METHODS AND PRACTICES**

*Prerequisite: approval of advisor and instructor.* Theories and methods of administering tests in evaluating individuals; experience in administering, scoring, and interpreting.

**DIAG 57v9: PRACTICUM IN DIAGNOSTIC TEACHING**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor.* Directed field experiences in a diagnostic educational setting.

**DIAG 5931: RESEARCH TOPICS IN EDUCATIONAL DIAGNOSTICS**

*(Identified by specific title each time course is offered.)*

**DIAG 59v9: PROBLEMS IN EDUCATIONAL DIAGNOSTICS**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**DIAG 6531: ADVANCED EDUCATIONAL APPRAISAL**

*Prerequisite: DIAG 5531.* Advanced techniques of appraisal; communication of educational and psychological test results via conferences and written reports.

**DIAG 67v9: INTERNSHIP IN EDUCATIONAL EVALUATION***(Variable credit, 1-6 semester hours)*

Supervised internship in a public school; written and oral reports required.

**EARLY CHILDHOOD EDUCATION****ECED 3731: KINDERGARTEN STUDENT TEACHING***Corequisite: ELEM 3731.* Supervised field experiences in mechanics of teaching preschool and kindergarten children.**ECED 39v9: PROJECTS IN EARLY CHILDHOOD EDUCATION***(Variable credit, 1-6 semester hours)**Prerequisite: approval of advisor and project director.* Individual projects and planned readings in early childhood education.**ECED 4031: TEACHING PRESCHOOL CHILDREN**

Child development and educational needs related to learning readiness of young children; required for kindergarten endorsement. (Field experiences required)

**ECED 4032: TECHNIQUES AND MATERIALS FOR PRESCHOOL INSTRUCTION**

Activities appropriate for young children in art, music, rhythm, games, and creative expression; required for kindergarten endorsement. (Field experiences required)

**ECED 4131: LANGUAGE ARTS IN EARLY CHILDHOOD**

Analysis and strategies for teaching listening and speaking skills to young children. (Field experiences required)

**ECED 4132: COMMUNITY MODELS OF EARLY CHILDHOOD EDUCATION**

School programs, methods of evaluation, and appropriate learning objectives for kindergarten and preschool. (Field experiences required)

**ECED 4931: SELECTED TOPICS IN EARLY CHILDHOOD EDUCATION***(Identified by specific title each time course is offered.)***ECED 5031: TEACHING YOUNG CHILDREN**

Techniques designed to develop learning readiness in preschool children.

**ECED 5032: CURRENT MODELS OF EARLY CHILDHOOD EDUCATION***Prerequisite: ECED 5031 or equivalent.* Descriptive analysis of types of existing schools, learning objectives, and methods of evaluating achievement for kindergarten and preschool populations.**ECED 5131: CREATIVE ACTIVITIES FOR THE PRESCHOOL CHILD**

Art, music, rhythm, indoor and outdoor games, and dramatic activities for young children.

**ECED 5132: LANGUAGE DEVELOPMENT IN EARLY CHILDHOOD***Prerequisite: ECED 5031 or equivalent.* Techniques for the development of oral and listening skills in young children.**ECED 5331: EVALUATION OF DEVELOPMENTAL SKILLS IN YOUNG CHILDREN***Prerequisite: ECED 5031 or equivalent.* Formal and informal evaluation of motor, perceptual, and cognitive skills of preschool children.**ECED 57v9: PRACTICUM IN KINDERGARTEN TEACHING***(Variable credit, 1-6 semester hours)**Prerequisite: approval of advisor.* Directed field experiences in a kindergarten setting.

**ECED 5931: RESEARCH TOPICS IN EARLY CHILDHOOD EDUCATION**

*(Identified by specific title each time course is offered.)*

**ECED 59v9: PROBLEMS IN EARLY CHILDHOOD EDUCATION**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**ECONOMICS****ECON 3033: POLITICAL ECONOMY**

Integrated analysis of social, political, philosophical, and economic concepts in the formation of an economic system. (Formerly ECON 3533).

**ECON 3131: ECONOMIC DEVELOPMENT**

Economic doctrines and the frameworks in which economic development takes place; emphasis on the American economy.

**ECON 3331: INTERMEDIATE MICROECONOMICS**

*Prerequisite: A foundations course in microeconomics or equivalent.* Allocation of resources under different market structures; theory of consumer behavior, production and cost, and income distribution.

**ECON 3332: INTERMEDIATE MACROECONOMICS**

*Prerequisite: A foundations course in macroeconomics or equivalent.* Determinants of income and employment; business investments, private and government spending, and fiscal and monetary policies.

**ECON 3431: BUSINESS ECONOMICS**

*Prerequisite: A foundations course in microeconomic principles.* An application of microeconomic theory to the solution of business problems; introduction to analytical tools based on microeconomic principles.

**ECON 3534: CONTEMPORARY SOCIO-ECONOMIC PERSPECTIVES**

Contemporary socio-economic problems; emphasis on the range of individual choice for achievement of personal goals.

**ECON 39v9: PROJECTS IN ECONOMICS**

*(Variable credit, 1-6 semester hours.)*

*Prerequisite: Approval of advisor and project director.* Supervised readings pertaining to a selected problem in economics.

**ECON 4131: CURRENT ECONOMIC ISSUES**

*Prerequisite: Principles of Economics or equivalent.* The analysis and treatment of current economic problems in the United States.

**ECON 4132: ECONOMICS OF MINORITY COMMUNITIES IN THE U.S.**

Economic dimensions of minority communities in the U.S.; their relationship to economic power, ethnic consciousness, and political force.

**ECON 4133: COMPARATIVE ECONOMIC SYSTEMS**

Analysis of alternative economic systems; the viability of Marxism and Socialism in meeting consumer demands and maximizing welfare.

**ECON 4331: ECONOMICS OF LABOR RELATIONS**

*Prerequisite: Principles of Economics or equivalent.* Economics of the labor market, unionization, collective bargaining, and government regulations of labor relations.

**ECON 4531: BUSINESS FORECASTING**

*Prerequisite: Principles of Economics or equivalent.* The nature and causes of business fluctuations; forecasting variations in the level of business activity.

**ECON 4532: INTERNATIONAL ECONOMICS**

*Prerequisite: Principles of Economics or equivalent.* Principles of international trade, trade theories, tariffs, and foreign exchange; the United States' international trade position.

**ECON 4533: ECONOMICS OF THE SPACE INDUSTRY**

Application of economic analysis to the space industry; emphasis on case studies.

**ECON 4534: ECONOMICS OF CRIME**

Application of economic principles to the study of crime and the ensuing costs to society; interrelationships between crime and economic structures.

**ECON 4535: ECONOMICS OF AGING**

Application of economic principles to the study of problems of the aging; public finance, labor force participation, and societal costs.

**ECON 4536: ECONOMICS OF TRANSPORTATION**

*Prerequisite: A foundations course in microeconomic principles.* (Formerly ECON 3532). Development of the United States' transportation system, application of economic tools to the analysis of transportation problems, and government transportation policy.

**ECON 4537: ECONOMICS OF REGULATION**

*Prerequisite: ECON 3331 or approval of program director.* Application of economic theory to the problems of regulating firms; emphasis on pricing policy and constrained rate of return.

**ECON 4731: SEMINAR IN ECONOMIC THOUGHT**

Ideas of major economic thinkers in the context of their times.

**ECON 4931: SELECTED TOPICS IN ECONOMICS**

*(Identified by specific title each time course is offered)*

**ECON 5031: ECONOMIC PROCESSES**

An intensive summary of basic micro- and macro-economic theories as applied to business. (Formerly ECON 5131).

**ECON 5132: ECONOMICS OF HEALTH SYSTEMS**

*Prerequisite: ECON 5031 or equivalent.* Economic analysis of health systems, particularly in metropolitan areas; evaluating and financing alternative modes of providing adequate medical care. (Formerly ECON 5332).

**ECON 5133: ECONOMIC INFLUENCES ON EDUCATION**

The impact of economic principles and practices on emerging educational thought. (Formerly ECON 6031).

**ECON 5134: MANPOWER POLICY**

*Prerequisite: ECON 5031 or equivalent.* Societal demands for labor and methods of meeting such demands; analysis of federal, state, and local efforts. (Formerly ECON 6131).

**ECON 5135: RESOURCES IN THE FUTURE**

Economic mechanisms by which human and natural resources may be allocated in the future. (Formerly ECON 6332).

**ECON 5136: BUSINESS ECONOMICS**

*Prerequisite: ECON 5031 or equivalent.* Capital budgeting, price determination, and linear programming; resource allocation, market structures, and business forecasting. (Formerly ECON 5431; 5432).

**ECON 5331: URBAN AND SUBURBAN ECONOMICS**

Economic dimensions of metropolitan areas; location theory, regional economics, natural resources, manpower, energy, and levels of development.

**ECON 5333: MACROECONOMIC THEORY**

*Prerequisite: ECON 3332 or approval of program director.* The interrelationships of government, business, and consumer activity with respect to national income and employment levels.

**ECON 5334: MICROECONOMIC THEORY**

*Prerequisite: ECON 3331 or approval of program director.* Resource allocation and product distribution through various market structures; analysis of modern consumer and production theories.

**ECON 5531: QUANTITATIVE METHODS IN ECONOMICS**

The presentation of economic theory in mathematical terms; emphasis on analytical techniques in economics as applied to business problems.

**ECON 5533: HISTORY OF ECONOMIC THOUGHT**

Historical survey of the development of economic thought; major economic theorists and the doctrines of their times.

**ECON 5534: ECONOMIC DEVELOPMENT**

Theories of economic growth and development; emphasis on problems of underdeveloped economies.

**ECON 5931: RESEARCH TOPICS IN ECONOMICS**

*(Identified by specific title each time course is offered.)*

**ECON 59v9: PROBLEMS IN ECONOMICS**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**ECON 6331: ECONOMIC POLICY**

*Prerequisite: ECON 5333 or equivalent.* Monetary and fiscal policy as related to inflation, economic stability, and growth.

**ECON 6531: ECONOMIC REGULATION: THEORIES AND POLICIES**

*Prerequisite: ECON 3331 or equivalent.* Advanced analysis of the pricing policies of regulated firms; regulation-induced distortions in contrast to "free" economy.

**ECON 6532: MONETARY THEORY**

*Prerequisite: ECON 5031 or equivalent.* The relationship of money to the economic activity of a society; evaluation of various monetary theories.

**ECON 6533: INTERNATIONAL ECONOMICS:**

International trade and its environment; trade flows, financial and monetary relations.

**ECON 6731: SEMINAR ON ECONOMIC ISSUES**

*Prerequisites: ECON 5031 or equivalent and approval of program director.* Contemporary issues influencing the American economy.

**ECON 6939: MASTER'S THESIS RESEARCH**

## EDUCATION

### EDUC 30vi: FUNDAMENTALS OF EDUCATIONAL PHILOSOPHY, PSYCHOLOGY, AND LEARNING THEORY

*(Variable credit, 1-6 semester hours, depending on student preparation)*

The American educational system and its antecedents, implications of learning theories for growth and developmental stages, and psychological processes in teaching. (Field experiences required)

### EDUC 3531: IMPLICATIONS FOR MULTICULTURAL EDUCATION

Teaching and learning in environments of multicultural and multiethnic confluence.

### EDUC 39v9: PROJECTS IN EDUCATION

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and project director.* Individual projects and planned readings in professional education.

### EDUC 4131: PLANNING AND DEVELOPING EDUCATIONAL MATERIALS

Design, development, preparation, evaluation, and application of educational media for elementary, secondary, and college teachers.

### EDUC 4132: MEDIA REFERENCE TOOLS AND EQUIPMENT

Basic sources and resources of educational media and materials; operation and maintenance of equipment.

### EDUC 4531: EDUCATIONAL APPLICATIONS OF MEDIA

*Prerequisites: EDUC 4131, EDUC 4132, and approval of program director.* Supervised work experiences in a learning resources center, audio-visual center, or other approved media center; six hours of experience each week.

### EDUC 4931: SELECTED TOPICS IN EDUCATION

*(Identified by specific title each time course is offered.)*

### EDUC 5031: ACCULTURATION THROUGH EDUCATION

Implications for teaching and learning attributable to the increasing complexity of the clientele of the American public schools.

### EDUC 5032: EDUCATION OF THE CULTURALLY DIFFERENT LEARNER

Sociological and psychological forces threatening the culturally different learner, and methods for overcoming the negative effects of these forces.

### EDUC 5033: CURRICULAR NEEDS OF CULTURALLY DIFFERENT STUDENTS

Relation of curricular processes and programs to the unique educational needs of culturally different students.

### EDUC 5131: EDUCATIONAL PROBLEMS IN URBAN CENTERS

Analysis of societal forces which contribute to the ever-changing environment of contemporary schools.

### EDUC 5132: LANGUAGE SKILLS FOR THE CULTURALLY DIFFERENT LEARNER

Language development problems peculiar to culturally different children, and methods of overcoming those problems.

### EDUC 5231: PRINCIPLES OF GUIDANCE

*Prerequisite: 12 hours of Psychology.* History, principles, services, and theoretical development of guidance.

**EDUC 5331: MULTICULTURAL DETERMINANTS IN LEARNING**

The effects of cultural environments on student self-concept and self-awareness in relation to the learning process.

**EDUC 5531: EDUCATIONAL/SOCIETAL FUTURES**

Participatory, experiential, analysis of futures; focus on scenario construction.

**EDUC 5532: EDUCATIONAL FORECASTING**

Educational projections based on continuous re-evaluation of changing balances among economic, demographic, and political forces, state and national.

**EDUC 5731: CHILDREN FROM CULTURALLY DIFFERENT BACKGROUNDS**

Seminar on cross-cultural implications for education.

**EDUC 5931: RESEARCH TOPICS IN PROFESSIONAL EDUCATION**

*(Identified by specific title each time course is offered.)*

**EDUC 59v9: PROBLEMS IN EDUCATION**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**EDUC 6031: IMPROVEMENT OF INSTRUCTION**

Upgrading teaching skills and coping with modern educational problems as they affect classroom effectiveness.

**EDUC 6032: ANALYSIS AND MODIFICATION OF TEACHING BEHAVIOR**

Procedures in self-appraisal, instructional analysis, and micro-teaching as a means of studying teacher behavior.

**EDUC 6033: TEACHING THE EDUCATIONALLY UNINVOLVED**

Nature and needs of the uninvolved student; emphasis on development of teaching strategies and on curricular change.

**EDUC 6034: COMMUNITY RESOURCES FOR EDUCATIONAL OPPORTUNITY**

Expansion of learning horizons by involving total community resources in educational programming.

**EDUC 6131: THE MIDDLE OR INTERMEDIATE SCHOOL**

Philosophy, organization, program, special problems, and unique characteristics of the emerging intermediate school.

**EDUC 6132: EDUCATIONAL EVALUATION**

*Prerequisite: College Algebra.* Bases of tests, polls, measurements, and appraisal; elementary statistics for teachers; treatment and interpretation of data.

**EDUC 6134: HISTORICAL DEVELOPMENT OF AMERICAN EDUCATION**

Changing nature of education in American society from Puritans to Post-progressives.

**EDUC 6231: 6232: THEORY OF INSTRUCTIONAL SUPERVISION**

Principles of supervision, program evaluation, interaction analysis, and development of leadership skills; two semesters devoted to elementary and secondary levels, respectively.

**EDUC 6331: COOPERATIVE EDUCATION**

Organization and coordination of cooperative programs or internships in preschool, elementary, secondary, college, or business education.

**EDUC 6332: EVALUATION OF CURRICULAR MODELS**

Analysis of the roles of diagnosis, remediation, performance, and evaluation in the development of curricular models designed to cope with identifiable learning variables.

**EDUC 6333: HISTORY AND PHILOSOPHY OF EDUCATION**

Major social philosophies and their applicability to education in the United States.

**EDUC 6334: CAREER, VOCATIONAL, AND EDUCATIONAL INFORMATION**

Methods of collecting, filing, and using career, vocational, and educational data; analysis of career, vocational, and educational conditions and trends.

**EDUC 6335: DESIGN AND APPLICATION OF INSTRUCTIONAL MEDIA**

Design and selection of educational communications media including graphic and programmed instructional materials; commercially prepared audio-visual materials; preparation of study and curriculum guides.

**EDUC 6431: 6432: ROLE OF THE SUPERVISOR IN PUBLIC SCHOOL LEADERSHIP**

*Prerequisites: PSYC 5031 and either EDUC 6231 or EDUC 6232 or equivalent.*

Problems and procedures of supervision in public schools; two semesters devoted to elementary and secondary levels, respectively.

**EDUC 6531: RESEARCH IN EDUCATION**

Critical analyses of research; research projects, techniques of research, and elementary statistical designs.

**EDUC 6532: CONTEMPORARY PHILOSOPHY OF EDUCATION**

Curricular implications of recent protests and reform in education; emphasis on relevance, propaganda, freedom, indoctrination, and authority.

**EDUC 6533: EDUCATIONAL POLICY SYSTEMS**

National educational policies, state departments of education, community power structures, curricular and pedagogical definitions of politics and political influences; the educator and politics.

**EDUC 6534: ADULT EDUCATION IN A CHANGING SOCIETY**

The adult as a learner; principles and practices in planning and developing programs for a total and life-long education.

**EDUC 6535: CURRICULUM THEORY AND DEVELOPMENT**

Principles of curriculum development; organization, selection, and evaluation of instructional materials and educational programs.

**EDUC 6536: RECONSTRUCTIONIST FUTURISM IN EDUCATION**

Applications of reconstructionist philosophic thought to educational alternatives for the future.

**EDUC 6731: SEMINAR IN COMPARATIVE EDUCATION**

Contemporary educational problems in foreign countries and their implications for education in the U.S.

**EDUC 6732: SEMINAR IN CURRICULUM DESIGN AND DEVELOPMENT**

Fundamental bases for curriculum development and implementation; issues in curriculum development.

**EDUC 6733: SEMINAR IN EDUCATIONAL FUTURES**

*Prerequisites: EDUC 5531, SOCI 4136, and 12 hours in futures courses.* Problem analysis and alternatives for education.

**EDUC 6939: MASTER'S THESIS RESEARCH**

*May be repeated for a maximum of six credits.*

**ELEMENTARY EDUCATION****ELEM 3131: ELEMENTARY SCHOOL METHODS AND FIELD EXPERIENCES**

Program planning, scheduling, and record keeping; developing competencies in observation and assessment, and applying the unit approach in organizing learning experiences. (Field experiences required)

**ELEM 3331: SOCIAL STUDIES IN THE ELEMENTARY SCHOOL**

*Prerequisites: EDUC 30v1 and ELEM 3131 or equivalents.* Methods of developing understanding of basic social science concepts and the contributions of ethnic and urban studies; constructing teaching-learning materials that incorporate the inquiry approach and individualize instruction. (Field experiences required)

**ELEM 3332: HEALTH IN THE ELEMENTARY SCHOOL**

*Prerequisites: EDUC 30v1 and ELEM 3131 or equivalents.* Methods of developing awareness of health problems and needs of young children; nutrition, drugs and drug abuse, and health habits. (Field experiences required)

**ELEM 3361: MATHEMATICS AND SCIENCE IN THE ELEMENTARY SCHOOL**

*Prerequisites: EDUC 30v1, ELEM 3131, MATH 3033 or 3037 or equivalents.* Numbers and the number system, and content of modern mathematics programs; emphasis on curriculum materials and teaching methods, including the process approach in science. (Field experiences required)

**ELEM 3391: READING, LANGUAGE ARTS, AND CHILDREN'S LITERATURE**

*Prerequisites: EDUC 30v1, ELEM 3131, READ 4131.* The reading process; basic skills in teaching reading; language arts materials and methods for developing oral and written expression, listening skills, and creative language activities; reading and evaluating children's literature. (Field experiences required)

**ELEM 3431: MATHEMATICS IN THE ELEMENTARY SCHOOL**

*Prerequisites: EDUC 30v1 and ELEM 3131 or equivalents.* Numbers and the number system with emphasis on curriculum materials and teaching methods. (Field experiences required) (Credit may not be earned for both ELEM 3361 and ELEM 3431.)

**ELEM 3432: SCIENCE IN THE ELEMENTARY SCHOOL**

*Prerequisites: EDUC 30v1 and ELEM 3131 or equivalents.* Development of science concepts in elementary instruction; emphasis on curriculum materials and the process approach as a science teaching method. (Field experiences required) (Credit may not be earned for both ELEM 3361 and ELEM 3432.)

**ELEM 3433: READING IN THE ELEMENTARY SCHOOL**

*Prerequisites: EDUC 30v1 and ELEM 3131 or equivalents.* The reading process and basic skills in teaching reading. (Field experiences required) (Credit may not be earned for both ELEM 3391 and ELEM 3433.)

**ELEM 3434: LANGUAGE ARTS IN THE ELEMENTARY SCHOOL**

*Prerequisites: EDUC 30v1 and ELEM 3131 or equivalents.* Language arts materials and methods for developing oral and written expression, listening skills, and creative language activities. (Field experiences required) (Credit may not be earned for both ELEM 3391 and ELEM 3434.)

**ELEM 3435: CHILDREN'S LITERATURE IN THE ELEMENTARY SCHOOL**

*Prerequisites: EDUC 30v1 and ELEM 3131 or equivalents.* Methods for introducing literature in the elementary program; emphasis on story telling, reading for content, and evaluating writings for children. (Field experiences required) (Credit may not be earned for both ELEM 3391 and ELEM 3435.)

**ELEM 3561: ELEMENTARY STUDENT TEACHING**

*Prerequisite: approval of advisor.* Supervised field experiences in mechanics of teaching in the elementary school classroom.

**ELEM 3731: STUDENT TEACHING**

*Prerequisite: approval of advisor; corequisite: BLNG 3731, DIAG 3731, or ECED 3731.* Supervised field experiences, conducted primarily in a public school setting, with regular seminars conducted on the University campus.

**ELEM 39v9: PROJECTS IN ELEMENTARY EDUCATION**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and project director.* Individual projects and planned readings in elementary education.

**ELEM 4931: SELECTED TOPICS IN ELEMENTARY EDUCATION**

*(Identified by specific title each time course is offered.)*

**ELEM 5131: SPECIALIZED INSTRUCTIONAL TECHNIQUES: LANGUAGE ARTS AND READING**

Utilization of new programs, processes, and equipment designed to individualize instruction in language arts and reading.

**ELEM 5132: SPECIALIZED INSTRUCTIONAL TECHNIQUES: MATHEMATICS AND SCIENCE**

Utilization of new programs, processes, and equipment designed to individualize instruction in mathematics and science.

**ELEM 5133: SPECIALIZED INSTRUCTIONAL TECHNIQUES: SOCIAL STUDIES**

Utilization of new programs, processes, and equipment designed to individualize instruction in social studies.

**ELEM 57v9: PRACTICUM IN ELEMENTARY TEACHING**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor.* Directed field experiences in an elementary or intermediate school setting.

**ELEM 5931: RESEARCH TOPICS IN ELEMENTARY EDUCATION**

*(Identified by specific title each time course is offered.)*

**ELEM 59v9: PROBLEMS IN ELEMENTARY EDUCATION**

*(Variable credit, 1-6 hours)*

*Prerequisite: approval of advisor and problem director.*

**ELEM 6331: DYNAMICS OF THE ELEMENTARY CLASSROOM**

Interplay of social, economic, psychological, ethnological, and physical characteristics of elementary students; implications for informal teacher appraisal.

**ENVIRONMENTAL MANAGEMENT****ENVR 3131: FOUNDATIONS OF ENVIRONMENTAL MANAGEMENT**

Presentation, analysis and application of principles of human and environmental resource administration.

**ENVR 37v9: INTERNSHIP IN ENVIRONMENTAL MANAGEMENT**

*(Variable credit, 1-6 semester hours)*

*Prerequisites: 15 hours of upper-level credit and approval of program director. Two hours of supervised work experience per credit each week in an approved public or private environmental agency.*

**ENVR 39v9: PROJECTS IN ENVIRONMENTAL MANAGEMENT**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and project director. Individual study and planned readings in a selected area of environmental management problems.*

**ENVR 4031: NATURAL RESOURCES**

Interpretation of the reciprocal effects of demographic and environmental characteristics and trends; technology and manpower availability as determinants of resource discovery, production, and utilization.

**ENVR 4131: INTRODUCTION TO AIR AND SOLID WASTE MANAGEMENT**

Analysis of policy toward and technology for the control of atmospheric pollution and solid waste.

**ENVR 4132: INTRODUCTION TO WATER MANAGEMENT**

Principles of effective water resources management; state and national water resources policies.

**ENVR 4133: INTRODUCTION TO ENVIRONMENTAL IMPACT STATEMENTS**

Preparation, analysis, and evaluation of the environmental impact statement as a decision and planning tool.

**ENVR 4134: INTRODUCTION TO LAND MANAGEMENT**

Alternative uses of land resources and their impact on society; methods of land use planning and management.

**ENVR 4331: ECOLOGY AND PUBLIC POLICY**

Ecological problems in the United States; causes, alternative solutions, and economic and health implications.

**ENVR 4931: SELECTED TOPICS IN ENVIRONMENTAL MANAGEMENT**

*(Identified by specific title each time course is offered.)*

**ENVR 5131: ENVIRONMENTAL MANAGEMENT PRACTICES**

Managerial principles in human and natural resource situations; organization, planning, and control of resources within the environment.

**ENVR 5132: ENVIRONMENTAL HEALTH SCIENCE**

Etiology and control of health problems arising from environmental pollution; industrial hygiene, waste disposal, pest and rodent control, and public sanitation.

**ENVR 5133: ENVIRONMENTAL HAZARDS**

Effects of environmental hazards such as hurricanes, flooding, subsidence, and water and air pollution; emphasis on individual and community adjustments in the Gulf Coast Area.

**ENVR 5331: BIONOMICS**

Interaction of environmental problems and the American economy; compatibility of economic progress with programs of environmental control.

**ENVR 5332: ENVIRONMENTAL LAW**

Major environmental legislation at both state and federal levels; problems of regulation.

**ENVR 5333: AIR QUALITY MANAGEMENT**

Standards for air quality; governmental policies towards prevention and control of atmospheric pollution.

**ENVR 5334: COSTAL ZONE MANAGEMENT**

Estuary systems, flood plain utilization, and alternative land uses for costal zones; applications to the Texas Gulf Coast.

**ENVR 5335: MINERAL RESOURCE MANAGEMENT**

Utilization of mineral resources from an economic perspective; location, transportation, and processing.

**ENVR 5336: SOLID WASTE MANAGEMENT**

Analysis of the multidimensional nature of an affluent society's residuals; emphasis on control and disposal methods and recovery of valuable resources.

**ENVR 5531: LAND MANAGEMENT**

Alternative uses of land resources and their impact on society; legal and technological factors in land management practices.

**ENVR 5532: WATER MANAGEMENT**

Development and utilization of water resources; effects of ecological change and public policies on the management of water resources.

**ENVR 5931: RESEARCH TOPICS IN ENVIRONMENTAL MANAGEMENT**

*(Identified by specific title each time course is offered.)*

**ENVR 59v9: PROBLEMS IN ENVIRONMENTAL MANAGEMENT**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**ENVR 6131: RESEARCH METHODS IN ENVIRONMENTAL MANAGEMENT**

*Prerequisite: ENVR 3331 or equivalent.* Using analytical tools to study the interactions among resource and environmental elements; interpretation of findings and projecting trends.

**ENVR 6132: ENVIRONMENTAL IMPACT STATEMENTS**

Preparation, analysis, and evaluation of the environmental impact statement as a decision and planning tool; emphasis on practical experience and governmental agency regulations and procedures.

**ENVR 6332: ECOLOGICAL ISSUES FOR THE FUTURE**

The relationship between man and his environment in the future; limits of the exploitation of natural resources.

**ENVR 6731: SEMINAR IN NATURAL RESOURCE MANAGEMENT**

Current natural resource management problems; opportunity for individual concentration on a single environmental problem area.

**ENVR 6732: SEMINAR ON NATURAL RESOURCE POLICY**

Current status of supplies and reserves of natural resources in the United States; resource utilization policies.

**ENVR 67v9: GRADUATE INTERNSHIP IN ENVIRONMENTAL MANAGEMENT**

*(Variable credit, 1-6 semester hours)*

*Prerequisites: master's degree candidacy and approval of advisor and dean.* Supervised internship with a public or private environmental agency; written and oral reports required.

**ENVR 6939: MASTER'S THESIS RESEARCH****ELECTRO-OPTICAL TECHNOLOGY****EOPT 3131: INTRODUCTION TO ELECTRO-OPTICS**

*Prerequisite or Corequisite: MATH 3333.* Energy levels in atoms, lasing action, optical cavities, oscillation modes, and operation of electro-optical instruments. (Laboratory instruction)

**EOPT 3132: GEOMETRICAL OPTICS**

*Prerequisite or Corequisite: EOPT 3131.* Geometrical analysis of reflection, refraction, and graphical ray tracing; optical components. (Laboratory instruction)

**EOPT 3431: INTRODUCTION TO LASERS AND MASERS**

*Prerequisites: PROC 3132, CTEC 3131, and credit for or coenrollment in EOPT 3131.* Masers, gas lasers, dye lasers and semi-conductor lasers; pumping, pulsing, and Q-switching. (Laboratory instruction)

**EOPT 39v9: PROJECTS IN ELECTRO-OPTICAL TECHNOLOGY**

*(Variable credit, 1-6 semester hours.)*

*Prerequisite: approval of advisor and project director.* Individual projects and laboratory investigations in electro-optical technology.

**EOPT 4111: EXPERIMENTAL OPTICAL METHODS**

*Prerequisite: EOPT 3131.* Properties of optical materials; glass fabrication and vacuum technology. (Laboratory instruction)

**EOPT 4132: WAVE OPTICS**

*Prerequisite: EOPT 3131 and MATH 3333.* Wave treatment of reflection, refraction, attenuation, interference, diffraction, and polarization.

**EOPT 4231: BIO-SYSTEMS MEASUREMENTS**

*Prerequisites: CTEC 3131, EOPT 3131, and PROC 3132.* Measurement of the electrical, magnetic, and optical phenomena of biological systems.

**EOPT 4232: BIOLOGICAL CONTROL SYSTEMS**

*Prerequisite: Credit for or coenrollment in EOPT 4231.* Cardio-vascular, muscular, auditory, and visual control systems; appropriate biomedical transducers.

**EOPT 4233: ADVANCED BIOMEDICAL INSTRUMENTATION**

*Prerequisites: EOPT 4232, PROC 3132, and CTEC 3531.* Electronic, electro-optical, and electro-mechanical instrumentation in spectral analysis, speech analysis, EEG, EKG, and catheter measurements. (Laboratory instruction)

**EOPT 4234: INSTRUMENTATION IN BIOLOGICAL RESEARCH**

*Prerequisites: EOPT 4232, CTEC 3531, CSCI 3331, and MATH 3333.* Mathematical methods of bio-systems analysis; current techniques and instruments used in biological research. (Laboratory instruction)

**EOPT 4331: CLOSED-CIRCUIT TELEVISION SYSTEMS**

*Prerequisites: EOPT 3331 and EOPT 3131.* Cameras, monitors, video recorders, and microwave relays.

**EOPT 4431: LASER APPLICATIONS**

*Prerequisites: EOPT 3431, CTEC 3331, and CTEC 3531.* Applications of lasers in materials processing, data processing, holography, ranging and angle tracking, medicine, and communications.

**EOPT 4432: LASER SYSTEMS COMPONENTS**

*Prerequisites: EOPT 3131, CTEC 3131, and PROC 3132.* Windows, flats, mirrors, etalons, filters, beam splitters, prisms, lenses, gratings, polarizers, photographic supplies, and nonlinear materials. (Laboratory instruction)

**EOPT 4531: ELECTRO-OPTICAL INSTRUMENT ANALYSIS**

*Prerequisite: EOPT 3131 and CTEC 3331.* Optical instrumentation for detection, photography, and laser beam manipulation, modulation, and Q-switching.

**EOPT 4532: ELECTRO-OPTICAL MEASUREMENT SYSTEMS**

*Prerequisite: EOPT 4432.* Spectrometers, monochromators, spectrophotometers, spectrumanalyzers and interferometers. (Laboratory instruction)

**EOPT 4533: ELECTRO-OPTICAL FABRICATION AND TESTING**

*Prerequisites: EOPT 3131 and MATH 3331.* Techniques of fabrication and testing; modulated and open cavity helium-neon, pumped organic dye, and pumped ND-YAG lasers.

**EOPT 4534: FUNDAMENTALS OF FOURIER OPTICS**

*Prerequisite: EOPT 3132. Corequisite or Prerequisite: MATH 4134.* Study of imaging properties, imaging systems, filtering and information processing.

**EOPT 4931: SELECTED TOPICS IN ELECTRO-OPTICS**

*(Identified by specific title each time course is offered.)*

**EOPT 4939: UNDERGRADUATE HONORS PROJECT**

*Prerequisites: 36 hours of upper-level credit and approval of program director.*

**EOPT 5131: PLASMA DYNAMICS FOR OPTICAL APPLICATIONS**

*Prerequisites: EOPT 4132 and MATH 3331.* Charged particle motion in electric and magnetic fields, wave propagation, and antenna radiation in plasmas; emphasis on optical applications.

**EOPT 5231: BIOMEDICAL MODELING AND CYBERNETICS**

*Prerequisites: 6 hours of biomedical instrumentation and compiler language proficiency.* Biological modeling of systems via analog, digital, and hybrid computers. (Laboratory instruction)

**EOPT 5331: FUNDAMENTALS OF DISPLAY SYSTEMS**

*Prerequisites: CTEC 5332, CSCI 3132, EOPT 3131, and PROC 3132 or equivalents.* CRT, LED, and LCD display systems; character generation, vector generation, positioning problems, display memory, overlays, and operator controls.

**EOPT 5332: DIGITAL IMAGE PROCESSING**

*Prerequisites: CTEC 5331, CTEC 5332, MATH 3333, and EOPT 3131 and compiler language proficiency.* Automatic classification and categorization of optical patterns; transformations, filtering, and binary image analysis.

**EOPT 5431: COHERENT OPTICS AND HOLOGRAPHY**

*Prerequisites: EOPT 4132 and MATH 3333.* Characteristics of coherent light, wave front reconstruction, and imaging, coherence requirements of optical holography.

**EOPT 5931: RESEARCH TOPICS IN ELECTRO-OPTICAL TECHNOLOGY**

*(Identified by specific title each time course is offered.)*

**EOPT 59v9: PROBLEMS IN ELECTRO-OPTICAL TECHNOLOGY**

*(Variable credit, 1-6 semester hours).*

*Prerequisite: approval of advisor and project director.*

**EOPT 6331: COMPUTER OUTPUT MICROFILM SYSTEMS**

*Prerequisites:* CTEC 5332 and compiler language proficiency. COM hardware and software techniques; equipment, imaging, forms overlay, film formats, retrieval, economics, and software compatibility.

**EOPT 6431: APPLICATIONS OF HOLOGRAPHY**

*Prerequisites:* EOPT 5431 and CTEC 3531. Holographic systems used in microscopy, aberration, removal, optical data processing, optical memories, interferometry, cinematography, and television.

**EOPT 6939: MASTER'S THESIS RESEARCH****FINANCE****FINC 3031: MONEY MANAGEMENT**

Practical financial management of personal money matters; budgeting, insurance purchasing, personal income taxes, borrowing, housing, saving, investing, and retirement and estate planning.

**FINC 3131: MONEY AND BANKING**

*Prerequisite:* Principles of Economics or equivalent. Banking and credit in the economy; monetary policy, and international monetary exchange.

**FINC 3331: BUSINESS FINANCE**

*Prerequisite:* ACCT 3331 or approval of program director. Fundamental tools and techniques in financial planning; liquidity management, profit planning, acquisition; resource allocation and supervision.

**FINC 3332: PUBLIC FINANCE**

*Prerequisites:* Principles of Accounting and Principles of Economics or equivalents. Policies and practices related to revenue and expenditures of federal, state, and local governments.

**FINC 3531: REAL ESTATE FINANCE**

*Prerequisite:* FINC 3331 or equivalent. Buying, owning, and operating real estate; liens, contracts, deeds, titles, and leases.

**FINC 3532: PRINCIPLES OF INSURANCE**

Elements of insurance coverage as applied to individuals and firms; life, casualty, and property policies.

**FINC 3533: INVESTMENTS**

*Prerequisite:* FINC 3331 or equivalent. Personal investments in bonds, mortgages, stocks, and other securities; financial statements and credit.

**FINC 3739: UNDERGRADUATE INTERNSHIP IN FINANCE**

*Prerequisites:* 15 hours of upper-level credit and approval of program director. Six hours of supervised work experience each week in an approved financial institution or firm.

**FINC 39v9: PROJECTS IN FINANCE**

*(Variable credit, 1-6 semester hours)*

*Prerequisite:* approval of advisor and project director. Individual projects and planned readings in finance.

**FINC 4131: REPORT PRACTICE AND ANALYSIS**

*Prerequisite:* Principles of Accounting or equivalent. Problems and theories of financial statement data.

**FINC 4331: CONTEMPORARY FINANCIAL INSTITUTIONS**

*Prerequisite: FINC 3331 or equivalent.* Financial institutions other than commercial banks; savings and loan associations, credit unions, savings banks, and finance companies.

**FINC 4332: PRINCIPLES OF FINANCIAL ADMINISTRATION**

*Prerequisite: FINC 3331 or equivalent.* Advanced principles and practices in the financial administration of business enterprises.

**FINC 4333: BANK ADMINISTRATION**

*Prerequisite: FINC 3131.* Commercial bank management; reserves, investments, loans, and services.

**FINC 4531: INTERNATIONAL FINANCIAL OPERATIONS**

*Prerequisite: Principles of Economics or equivalent.* International transactions and financial flows; balance of payments, foreign exchange market, world-wide commercial policy and financing.

**FINC 4931: SELECTED TOPICS IN FINANCE**

*(Identified by specific title each time course is offered.)*

**FINC 5031: CONCEPTS IN COMMERCIAL FINANCE**

*Prerequisite: ACCT 5031 or equivalent.* Financial dimensions of business enterprise; financial organizational structures, financing of enterprises, alternative capital sources, refunding, and reorganization.

**FINC 5032: BUDGET THEORY IN PUBLIC EDUCATION**

Fundamentals of planning, cost accounting, quantitative evaluation of needs and resources, and application of prudent business practices to school finance.

**FINC 5131: THE FINANCIAL SYSTEM**

*Prerequisite: FINC 5031 or equivalent.* Operations and funding of financial institutions; the relationships of commercial banks to other institutions in the financial system.

**FINC 5133: FINANCIAL POLICY**

*Prerequisite: FINC 5031 or equivalent.* Case study approach to financial policy and strategy; solvency, profitability, external financing, dividend policy, acquisitions, mergers, and reorganizations.

**FINC 5134: MARKETING OF BANK SERVICES**

Bank location and expansion, bank services, and profitability in light of the competitive structure and the regulatory environment.

**FINC 5331: FINANCIAL ADMINISTRATION PRACTICES**

*Prerequisite: FINC 5031 or equivalent.* Managerial methods in financial institutions; planning, acquisition, and management of funds; investment projects, capital budgeting, and maintaining of credit worthiness.

**FINC 5332: STRUCTURE OF FINANCIAL STATEMENTS**

*Prerequisite: ACCT 5031 or equivalent.* Evaluation of problems involved in reporting, presenting, and analyzing financial statements in terms of generally accepted accounting principles.

**FINC 5531: PUBLIC FINANCE AND TAXATION**

*Prerequisite: ECON 5031 or equivalent.* Financial principles as applied to taxation, borrowing, and expenditures of federal, state, and local governments; emphasis on financing in metropolitan areas.

**FINC 5532: BUDGET PREPARATION AND ANALYSIS**

*Prerequisite: ACCT 5031 or equivalent.* Budget preparation in government and in public agencies; interaction of financial considerations and political dimensions in the budgetary process.

**FINC 59v9: PROBLEMS IN FINANCE**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**FINC 6131: COMMERCIAL BANK MANAGEMENT**

*Prerequisite: FINC 5031 or equivalent.* Administration of commercial banks; effects of lending policies, public regulation, and technological change on banking services.

**FINC 6132: COMMERCIAL BANK LENDING**

Problems and cases in bank loan management, analysis of credit worthiness, and lending as it relates to total portfolio management.

**FINC 6331: PORTFOLIO MANAGEMENT**

*Prerequisite: FINC 5031 or equivalent.* Methods of portfolio selection, investment model building, analysis of financial reports, and security price movements.

**FINC 6531: INTERNATIONAL FINANCE**

*Prerequisite: FINC 5031 or equivalent.* International financial operations, including foreign trade financing, risk and credit evaluation, letters of credit, and bankers' acceptances; role of political and social pressures.

**FINC 6532: INTERNATIONAL BANKING**

*Prerequisite: FINC 6131 or permission of instructor.* Study of international banking requirements and Edge Act banks in the international environment.

**FINC 6731: SEMINAR ON THE THEORY OF FINANCE**

*Prerequisites: ECON 5031 and FINC 5031.* The theory of choice, risk, and uncertainty; implications for capital investment, the cost of capital, and optimal financial structure.

**FINC 6732: SEMINAR IN COMMERCIAL BANKING**

Cases in bank administration and banking policy.

**FINC 67v9: GRADUATE INTERNSHIP IN FINANCE**

*(Variable credit, 1-6 semester hours)*

*Prerequisites: master's degree candidacy and approval of advisor and dean.* Supervised internship with an approved financial institution or firm; written and oral reports required.

**FINC 6939: MASTER'S THESIS RESEARCH****GEOGRAPHY****GEOG 3031: INSTRUCTIONAL METHODOLOGIES FOR GEOGRAPHY**

Content analysis, appraisal techniques, instructional support production, and demonstration techniques for the application of geographic approaches to problem solving.

**GEOG 3131: GEOGRAPHIC DATA DISPLAY PROCESSES**

Cartographic processes, computer applications to geographic analysis, and fundamentals of quantification.

**GEOG 3132: ENVIRONMENTAL GEOGRAPHY**

Non-technical analysis of physical and biotic processes; stress on man's adjustment to finite resources and his impact on environment.

**GEOG 3133: GEOGRAPHY OF ECONOMIC ACTIVITY**

Business, industry, and regional economic development; location theory applied to retailing, wholesaling, manufacturing, settlement, and transportation.

**GEOG 3134: CULTURAL GEOGRAPHY**

Man's individual and institutional responses to changes in his environment; emphasis upon contrasts of geographic regions.

**GEOG 3135: SOCIAL GEOGRAPHY**

Spatial analysis of contemporary society; social problems, organization networks, diffusion of ideas and innovations, and population dynamics.

**GEOG 3136: POLITICAL GEOGRAPHY**

Overview of global political patterns; contemporary crisis areas, and patterns and trends of national political behavior.

**GEOG 3137: GEOGRAPHY FOR TEACHERS**

Non-technical analysis of physical, biotic, and social processes, geographic interpretation of world patterns and current events.

**GEOG 3331: GEOGRAPHY OF ANGLO-AMERICA**

Topical and regional analysis of Canada and the United States.

**GEOG 3332: GEOGRAPHY OF LATIN AMERICA**

Influences of topography, climate, resource distribution, indigenous cultures, and European emigration on the emergence of modern Meso- and South American countries.

**GEOG 3533: COASTAL MARINE GEOGRAPHY**

Impacts of climate, topology, and technology on marine life and society.

**GEOG 39v9: PROJECTS IN GEOGRAPHY**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and project director.* Individual projects and planned readings in geography.

**GEOG 4131: URBAN GEOGRAPHY**

Evolution of urban structure and function; spatial perspectives of urban and suburban affairs.

**GEOG 4132: MARKETING GEOGRAPHY**

Spatial characteristics of marketing; location, channels of distribution, transportation, and market areas.

**GEOG 4133: GEOGRAPHY OF CRIME**

Spatial analysis of criminal behavior and the criminal justice system; major crimes at the national, regional, and urban levels; factors that influence the criminal's decision to commit a crime at a particular place.

**GEOG 4331: GEOGRAPHY OF NON-SOVIET ASIA**

Population density and sparcity, present and future, and the impact of climate, topography, cultures, and technology on the political dynamics of the region.

**GEOG 4332: GEOGRAPHY OF THE SOVIET UNION**

Resource development, applications of technology, and population distribution in the USSR.

**GEOG 4333: GEOGRAPHY OF EUROPE**

Regional geographic influences on the historical development of economic, political, and social patterns that characterize the present power structure of Non-Soviet Europe.

**GEOG 4334: GEOGRAPHY OF AFRICA**

Interaction of man with his environment; the transition of Africa from an agricultural to an industrial economy.

**GEOG 4335: GEOGRAPHY OF THE COMMUNIST WORLD**

Geographic analysis of the U.S.S.R., People's Republic of China, East Europe, and Southeast Asia; geographic patterns and centrally planned societies.

**GEOG 4531: GEOGRAPHY OF TEXAS**

The natural resources, culture, and land use characteristics of Texas; emphasis on future development.

**GEOG 4535: COMPUTER GRAPHICS IN GEOGRAPHY**

Utilization of computer-generated maps and graphs to display varied types of data.

**GEOG 4931: SELECTED TOPICS IN GEOGRAPHY**

*(Identified by specific title each time course is offered.)*

**GEOG 5131: REMOTE SENSING TECHNIQUES**

Application of remote sensing techniques to the location of environmental conditions, mineral and agriculture resources, forests, and populated areas.

**GEOG 5331: RURAL-URBAN GROWTH PATTERNS IN THE UNITED STATES**

Interpreting census data in terms of the economic and social effects of the rural-urban population shift.

**GEOG 5332: GEOGRAPHY OF MESO-AMERICA**

The interaction between cultural environments and geographic conditions in Mexico and Central America.

**GEOG 5533: ADVANCED ECONOMIC GEOGRAPHY**

Industrialization and related assistances and resistances to the implementation of modern technology and resource development.

**GEOG 5534: GEOGRAPHY OF TRANSPORTATION**

Physical distribution and logistics, transportation systems analysis, and urban transportation.

**GEOG 5731: SEMINAR IN POLITICAL GEOGRAPHY**

Interrelationship between geographic factors and political developments in selected world regions.

**GEOG 5732: SEMINAR IN URBAN GEOGRAPHY**

Contemporary urban and suburban affairs, land use planning, urban transportation, social problems, and socio-economic differentiation processes.

**GEOG 5733: SEMINAR IN ECONOMIC GEOGRAPHY**

Location theory, international trade, economic development, manufacturing, and other topics.

**GEOG 5734: SEMINAR IN MIGRATION**

Analysis of differential urban spatial structures resulting from intraurban and interurban migration; emphasis on variables influencing the decision to migrate.

**GEOG 5931: RESEARCH TOPICS IN GEOGRAPHY**

*(Identified by specific title each time course is offered.)*

**GEOG 59v9: PROBLEMS IN GEOGRAPHY**

*(Variable credit, 1-6 semester hours.)*

**GEOLOGICAL SCIENCES****GEOLOG 3031: FUNDAMENTALS OF EARTH SCIENCE**

Survey of earth science with emphasis on situations relevant to the well-being of man and the quality of his environment.

**GEOLOG 3022: FUNDAMENTALS OF MINERALOGY**

*Prerequisite: GEOL 3031 or equivalent; Corequisite: GEOL 3012.* The identification, origins, and inter-relationships of commonly-occurring minerals and economic-industrial significance.

**GEOLOG 3012: LABORATORY FOR MINERALS I**

*Corequisite: GEOG 3022.*

**GEOLOG 3023: MINERALS II**

*Prerequisite: GEOL 3022; Corequisite: GEOL 3013.* Continuation of GEOLOG 3022. Less-common minerals and rocks. Ore minerals; economic mineral deposits.

**GEOLOG 3013: LABORATORY FOR MINERALS II**

*Corequisite: GEOL 3023.*

**GEOLOG 3032: FUNDAMENTALS OF OCEANOGRAPHY**

*Prerequisite: GEOL 3031 or equivalent.* Origin, development, and structure of ocean basins and their contents; oceanic processes and geologic significance.

**GEOLOG 3221: THE SEDIMENTARY ENVIRONMENT**

*Prerequisite: GEOL 3031 or equivalent.* Corequisite GEOLOG 3211. Origins, depositional environments, paleontology, internal structures, and lithification processes of sedimentary rocks.

**GEOLOG 3211: LABORATORY FOR THE SEDIMENTARY ENVIRONMENT**

*Corequisite: GEOL 3211.*

**GEOLOG 3321: FUNDAMENTALS OF PALEONTOLOGY**

*Prerequisite: GEOL 3031 or equivalent; Corequisite: GEOL 3311.* The classifications, significance, and uses of fossils; emphasis on those found in Texas.

**GEOLOG 3311: LABORATORY FOR FUNDAMENTALS OF PALEONTOLOGY**

*Corequisite: GEOL 3321.* Three laboratory hours each week; field trips required.

**GEOLOG 3312: LABORATORY FOR GEOMORPHOLOGY**

*Corequisite: GEOL 3322.* Three laboratory hours each week.

**GEOLOG 3322: GEOMORPHOLOGY: LANDFORMS AND STRUCTURES**

*Prerequisites: GEOL 3031 or equivalent, Corequisite: GEOL 3312.* Geomorphology and structural geology; landscapes and factors which influence landforms.

**GEOL 39v9: PROJECTS IN EARTH SCIENCE***(Variable credit, 1-6 semester hours)**Prerequisites: Approval of advisor and project director.***GEOL 4011;4012: LABORATORY FOR EARTH SCIENCE FOR TEACHERS I AND II***Corequisite: GEOL 4031; 4032. Three laboratory hours each week.***GEOL 4031; 4032: EARTH SCIENCE FOR TEACHERS I AND II***Prerequisite: GEOL 3031 or equivalent. Corequisite: GEOL 4011; 4012. Development and structure of landforms and ocean basins; meteorology and the nature of the solar system.***GEOL 4131: GEOLOGY OF TEXAS***Prerequisite: GEOL 3031 or equivalent. Physical, chemical, and geological aspects of Texas landforms and substrata.***GEOL 4331: ENVIRONMENTAL GEOLOGY***Prerequisite: GEOL 3031 or equivalent. Survey of fossil fuels, ore deposits, and non-metallic mineral deposits; application of geological principles to planning dams and highways.***GEOL 4431: PETROLEUM GEOLOGY***Prerequisite: GEOL 3031 or equivalent. Geological, geomorphological, and geophysical aspects of petroleum and natural gas exploration; aerial, geologic, and seismic mapping and modeling. (Laboratory in GEOL 4411 required)***GEOL 4411: LABORATORY FOR PETROLEUM GEOLOGY***Pre- or corequisite: GEOL 4431. Three laboratory hours each week.***GEOL 4432: PETROLEUM RESERVOIRS***Prerequisites: GEOL 3022 or 3031 and MATH 3331 or equivalents. Oil and gas flow in subsurface reservoirs; optimum production as a function of pressure-time characteristics; physical requirements of production and storage reservoirs.***GEOL 4433: PETROLEUM PRODUCTION AND TRANSPORTATION***Pre- or corequisite: GEOL 4432. Techniques and optimization of oil and gas production and transportation; flow equations and cost analysis applied to pipelines.***GEOL 4434: PETROCHEMISTRY***Prerequisites: Organic, Quantitative, or Physical Chemistry. Synthesis of industrial and pharmaceutical products from petroleum components; recent scientific developments and current technological practices in the petrochemical industry. (Laboratory in GEOL 4414 required)***GEOL 4414: LABORATORY FOR PETROCHEMISTRY***Pre- or corequisite: GEOL 4434. Three laboratory hours each week.***GEOL 4531: LUNAR GEOLOGY***Prerequisite: GEOL 3031 or ASTR 3131 or equivalent. Planetary satellites; lunar rocks, internal structure, seismic activity and moonquakes, surface features, lunar atmosphere.***GEOL 4721: SEMINAR IN GEOLOGICAL SCIENCES***Prerequisites: 12 semester hours in geology and approval of advisor. Critical examination of recent developments in the geological sciences, with opportunity for individual concentration on a selected research topic.*

**GEOL 4931: SELECTED TOPICS IN GEOLOGY**

*(Identified by specific title each time course is offered.)*

**GEOL 5331: ENVIRONMENTAL GEOLOGY**

*Prerequisite: General Chemistry.* Relationships and interactions between pollutants and earth materials; conditions favoring concentration, mobilization, and decomposition; analysis for common pollutants.

**GEOL 5431: NATURAL RESOURCES RESERVES**

*Prerequisite: GEOL 3031 or equivalent.* Availability, location, and basic economics of mineral resources, including projected future needs and availability.

**GEOL 5931: RESEARCH TOPICS IN GEOLOGY**

*(Identified by specific title each time course is offered.)*

**GEOL 59v9: PROBLEMS IN GEOLOGICAL SCIENCES**

*(Variable credit, 1-6 hours)*

*Prerequisite: approval of advisor and program director.*

**GEOL 6939: MASTER'S THESIS RESEARCH****GOVERNMENT****GOVT 3031: AMERICAN POLITICAL INSTITUTIONS**

Social and economic aspects of the American political system; analysis of policy-making processes in public administration.

**GOVT 3033: PARLIAMENTARY PROCEDURES**

The development of parliamentary procedures; contemporary theory, uses, and practices.

**GOVT 3131: POLITICAL PARTIES**

The organization and activities of American political parties; membership, leadership, campaigns, and financing.

**GOVT 3132: COMPARATIVE POLITICS**

Methods of studying political systems on a cross-national basis; examples drawn from both Western and non-Western systems.

**GOVT 3331: LEGISLATIVE PROCESS**

Functions of the United States Congress and the Texas Legislature; legislative relationships with other sectors of government.

**GOVT 3332: THE STATES AND THE FEDERAL SYSTEM**

The constitutional role of the state governments and their relationship to federal and local governments.

**GOVT 3531: INTRODUCTION TO GOVERNMENT PLANNING**

Formulation, analysis, and implementation of public policies in the political environment.

**GOVT 3532: PUBLIC DECISION-MAKING**

Initiation and application of government policy; the politics of administration.

**GOVT 3533: PROGRAM IMPLEMENTATION AND EVALUATION**

The problems of program implementation; techniques for more effective program implementation and evaluation.

**GOVT 37v9: UNDERGRADUATE INTERNSHIP IN GOVERNMENT**

*(Variable credit, 1-6 semester hours)*

*Prerequisites: 15 hours of upper-level credit and approval of program director.*  
Supervised work experience in an approved agency; written and oral reports required.

**GOVT 39v9: DIRECTED READINGS IN GOVERNMENT**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and project director.* Individual projects and planned readings in government.

**GOVT 4131: TEXAS GOVERNMENT AND POLITICS**

Historical and contemporary influences of Texas politics on the State's economic development, policies, and institutions.

**GOVT: 4132: THE AMERICAN CHIEF EXECUTIVE**

Constitutional, political, and administrative responsibilities of the President; growth and function of federal executive agencies.

**GOVT 4133: CIVIL LIBERTIES IN AMERICA**

Factors and forces that have altered the scope of civil liberties in the U.S.: history and analysis.

**GOVT 4134: THE WELFARE STATE**

Federal programs in education, agriculture, transportation, health, and welfare; the role of special interest groups in the evolution of welfare policies.

**GOVT 4135: AMERICAN POLITICAL THOUGHT**

Origin and development of American political ideas and institutions from precolonial times to the present.

**GOVT 4332: ANCIENT AND MEDIEVAL POLITICAL THEORY**

History of Western political theory from ancient Greece through the Middle Ages.

**GOVT 4333: MODERN POLITICAL THEORY**

Seminal political thinkers from Machiavelli to the present; theoretical foundations of modern liberal democracies.

**GOVT 4334: UTOPIAS**

A critical analysis of ideal and experimental communities in theory and practice, from Plato's Republic to the contemporary commune movement.

**GOVT 4335: CONTEMPORARY INTERNATIONAL RELATIONS**

Forces that determine political relations among nations; comparative power structures and the resolution of conflicting national goals.

**GOVT 4336: COURTS, JUDGES, AND POLITICS**

Role of law, lawyers, and judges in preventing, reinforcing, and including social and political change in America.

**GOVT 4531: GOVERNMENT MANAGERIAL PROCESSES**

Concepts of control, productivity, and organizational design and structure; human behavior in organizations; administrative responsibility.

**GOVT 4532: GOVERNMENT BUDGET PLANNING AND ANALYSIS**

Application of accounting and finance principles to the preparation and analysis of government budgets; emphasis on state and local levels.

**GOVT 4533: LAW AND ECOLOGY**

Legal doctrines affecting the ecology movement; history, analysis, and trends.

**GOVT 4931: SELECTED TOPICS IN GOVERNMENT**

*(Identified by specific title each time course is offered.)*

**GOVT 5132: STATE AND LOCAL GOVERNMENT PROGRAMS**

Justification, planning, execution, and evaluation of state and local programs; application of economic, and political science principles to decision-making.

**GOVT 5133: POLITICS AND SOCIAL CHANGE**

Social and political change, emphasizing Marx, Weber, and contemporary theorists.

**GOVT 5331: METROPOLITAN GOVERNMENT AND POLITICS**

Responsibilities of metropolitan governments with respect to finances, allocation of resources, and provision of services; urban-suburban administrative relationships.

**GOVT 5332: PUBLIC POLICY ANALYSIS**

Analytical approaches to public policy review; alternative solutions and their political ramifications.

**GOVT 5431: 5432: GOVERNMENT CONTRACTING**

The evolution of legal principles affecting government contract practices and procedures; government purchasing policies and illustrative systems of regulated buying.

**GOVT 5531: ISSUES IN DEMOCRATIC THOUGHT**

Majority rule, the rights of minorities, obligation and obedience, and other issues affecting the future of democratic processes in a post-industrial society.

**GOVT 5532: PUBLIC POLICY AND STUDY OF THE FUTURE**

How conceptions of the future shape public policy, and how normative and objective forecasts influence those conceptions.

**GOVT 5731: SEMINAR ON INTERGOVERNMENTAL RELATIONS**

Horizontal and vertical relationships among branches and agencies of government; conflicting influences on public decision-making.

**GOVT 5732: SEMINAR ON PROBLEMS IN PUBLIC UTILITIES**

Legal and political aspects of providing public utility services; the economics of demand and supply.

**GOVT 5733: SEMINAR IN CIVIL LIBERTIES IN AMERICA**

Forces affecting the scope of civil liberties in America; legality and reality.

**GOVT 5734: SEMINAR ON CRIMINAL JUSTICE IN AMERICA**

Forces affecting the administration of criminal justice in America; theory and practice.

**GOVT 5735: SEMINAR ON AMERICAN CONSTITUTIONAL LAW**

Development of the U.S. Constitution, chiefly through judicial decisions, emphasizing the Supreme Court as a major participant in the governing process.

**GOVT 5736: SEMINAR ON COURTS, JUDGES, AND POLITICS**

The efficacy of the American legal system as an instrument of political and social control.

**GOVT 59v9: PROBLEMS IN GOVERNMENT**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**GOVT 6031: GOVERNMENT AND AMERICAN SOCIETY**

The role of public agencies in the evolution of the American socioeconomic system; political environment of the public executive.

**GOVT 6032: GOVERNMENT POLICY TOWARD EDUCATION**

Forces which modify the role of state, local, and national governments in the total operations of public school systems.

**GOVT 6131: SCIENCE, TECHNOLOGY, AND PUBLIC POLICY**

Growth of Science; technology and social change; structure of American science; analysis of current science policy; technology assesment.

**GOVT 6331: RESEARCH TECHNIQUES IN GOVERNMENTAL PLANNING**

Theory and application of modern research methodologies in government planning; data collection and analysis and policy evaluation.

**GOVT 6731: SEMINAR ON PUBLIC ADMINISTRATION**

Contemporary issues, practices, and problems facing public administrators, emphasis on government policy making and management techniques.

**GOVT 67v9: GRADUATE INTERNSHIP IN GOVERNMENT PLANNING**

*(Variable credit, 1-6 semester hours)*

*Prerequisites: master's degree candidacy and approval of advisor and dean.*

**GOVT 6931: SELECTED RESEARCH TOPICS IN GOVERNMENTAL PROCESSES**

*(Identified by specific title each time course is offered)*

**GOVT 6939: MASTER'S THESIS RESEARCH****HEALTH****HLTH 3031: HEALTH EMERGENCY CARE AND FIRST AID**

First aid for injured; procedures for immediate and temporary care of the ill.

**HLTH 3032: HEALTH EDUCATION FOR PUBLIC SCHOOL TEACHERS**

Techniques for helping pupils to solve individual health problems; includes health interests and needs of adolescents as consumers of products and services.

**HLTH 3033: RESOURCE MATERIALS FOR TEACHING HEALTH**

Structure of teaching materials; selection and utilization of community, state, and national resources.

**HLTH 3131: DRUGS AND HEALTH PROBLEMS**

Man's use and abuse of drugs; characteristics of drug users, methods of treatment, and social implications of drug abuse.

**HLTH 3132: SCHOOL—COMMUNITY HEALTH SERVICES**

Services performed by public health organizations; volunteer, municipal, state, and federal; relationships of personal health to living environment.

**HLTH 3331: CONSEQUENCES OF PERSONAL HEALTH PRACTICES**

Scientific principles in health services; motivation and self direction in the physical, social, and mental dimensions underlying personal health.

**HLTH 3332: SAFETY EDUCATION AND ENVIRONMENTAL HEALTH**

Emphasis on causes of accidents, their prevention, and remedial action; urban air and water conservation, pollutants and their control.

**HLTH 39v9: PROJECTS IN HEALTH**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.* Individual projects and activities in development of skills related to health, leisure pursuits, and recreations.

**HLTH 4331: CONSUMER HEALTH EDUCATION**

Health advertising and related sources of information; traditions, fads, superstitions, and other influences on health attitudes and practices.

**HLTH 4332: HEALTH PROBLEMS AND HUMAN RELATIONS**

Health problems encountered by families; emphasis on health development in physical, social, and mental interactions of the family group.

**HLTH 4531: SCIENTIFIC FOUNDATIONS OF HEALTH EDUCATION**

Scientific principles pertinent to individual, family, and community health maintenance; opportunity for individual concentration on a single health problem.

**HLTH 4731: SEMINAR ON CURRENT HEALTH ISSUES**

Contemporary issues and concerns in health programs; drugs, diet, exercise, and family and interpersonal relations.

**HLTH 4931: SELECTED TOPICS IN HEALTH**

*(Identified by specific title each time course is offered)*

**HLTH 5131: SCHOOL HEALTH PROGRAM**

Organization and administration of the School Health Program including health services, healthful school environment, and the health instruction program.

**HLTH 5231: COMMUNITY HEALTH**

Overview of official and voluntary health agencies and community programs designed to promote and protect the health of citizens.

**HLTH 5331: CURRENT PROBLEMS IN HEALTH EDUCATION**

Major physical, emotional, and social problems of the individual, family, and community, and program to prevent or alleviate these problems.

**HLTH 5931: RESEARCH TOPICS IN HEALTH EDUCATION****HLTH 59v9: PROBLEMS IN HEALTH EDUCATION****HLTH 6031: TEACHING HEALTH IN THE ELEMENTARY GRADES**

*Prerequisite: HLTH 3032 or equivalent.* Techniques of instruction in drugs and drug abuse, first aid, nutrition and health habits, and current problems.

**HLTH 6331: HEALTH PROBLEMS OF LOWER INCOME GROUPS**

Ramifications of the poverty-health complex in the United States and identification of health problems among the poor.

**HLTH 6531: FOUNDATIONS AND PRINCIPLES OF HEALTH EDUCATION**

Current health education programs in the school and community as viewed from a historical perspective and in relation to present societal values and needs.

**HLTH 6532: HEALTH EDUCATION CURRICULUM PLANNING**

Identification of student health needs and interests, community health problems and the scope and sequence of the health curriculum in schools.

## HISTORICAL STUDIES

### HIST 3131: BIRTH OF AMERICA

Political, economic, and social history of America from the first European settlement through the American Revolution.

### HIST 3132: THE NEW AMERICAN NATION

Emergence and development of a distinctly American society, politics, and national identity.

### HIST 3133: GROWTH OF INDUSTRIAL AMERICA

Early growth of industrial capitalism, and America's social and political response to it from the Civil War to World War I.

### HIST 3134: TWENTIETH-CENTURY AMERICA

America's emergence and development as a world power; economic, social, and cultural trends.

### HIST 3331: MEDIEVAL EUROPE

The birth and first flowering of a truly European civilization-urban society and an agricultural economy.

### HIST 3332: RENAISSANCE AND REFORMATION

Economic, political, intellectual, and religious developments in Europe from 1300 to 1600.

### HIST 3333: MODERN EUROPE

A survey of the political, economic, social, and cultural history of Europe from the French Revolution through the Second World War.

### HIST 3531: LATIN AMERICA

Latin American culture and lifestyle; the Aztecs and Incas, the colonial period, wars of independence, and modern Latin America.

### HIST 3631: ASIAN CIVILIZATION: THE CLASSICAL TRADITIONS

Classical Asian empires; elements of Indian, Chinese, and Japanese history as revealed through their cultures, philosophies, religions, and art.

### HIST 3632: ASIAN CIVILIZATION: THE MODERN PERIOD

Western colonialism and national rebellion in Asia; the emergence of modern Asian states and culture. A continuation of HIST 3631; may be taken independently.

### HIST 3831: WORLD CULTURES: CLASSICAL CIVILIZATIONS

Origins of civilization, comparative world religions, and the structure of classical civilizations in East and West.

### HIST 3832: WORLD CULTURES: FOUNDATIONS OF THE MODERN PERIOD

The shape of Western imperialism, comparative revolutions, nationalism, and liberation movements. A continuation of HIST 3831; may be taken independently.

### HIST 39v9: READINGS IN HISTORY

*(Variable credit, 1-6 semester hours)*

*Prerequisite: Approval of advisor and instructor.* Individual projects and planned readings in historical inquiry.

### HIST 4031: TEACHING HISTORY IN THE SECONDARY SCHOOL

Methods of presenting historical issues; historical perspective, evaluative techniques, and utilization of media.

**HIST 4132: THE CIVIL WAR**

Issues and conflicts leading to the American Civil War. Emphasis on the 1820-1865 period.

**HIST 4133: CIVIL WAR AND RECONSTRUCTION**

The experience of Americans from the 1850's to the 1870's; their attempts to reconcile sectional and national identities.

**HIST 4135: AMERICA, 1914-1945**

Emphasis on economic and social trends of the era, including the arts and mass media. Impact of American involvement in World Wars I and II.

**HIST 4136: AMERICA SINCE 1945**

Issues in domestic and foreign policy since the end of World War II.

**HIST 4137: THE SOUTH**

Study of a distinctive regional identity and the tensions between it and the national society, focusing on either the antebellum South, the New South, or the twentieth-century South.

**HIST 4139: TEXAS HISTORY: THEMES AND IMAGES**

Thematic approaches to Texas history; colonial and republican antecedents to the character of Texas institutions since statehood.

**HIST 4231: THE AMERICAN CITY**

Development of American cities from colonial times to the present, emphasizing the urban impact on American society.

**HIST 4233: AMERICAN DIPLOMATIC HISTORY**

Continental and intercontinental relations of North America; evolution of America's role as a world power in the 19th and 20th centuries.

**HIST 4234: AMERICAN TECHNOLOGICAL STYLE**

The experience of Americans adapting to the rigors of a vast continent; factors that shaped "Yankee ingenuity" and the dimensions of science and technology in contemporary America.

**HIST 4237: MINORITIES IN AMERICAN HISTORY**

Experiences of Blacks, Mexican-Americans, Indians, and other racial minorities in American life.

**HIST 4334: REVOLUTIONARY EUROPE**

The Enlightenment tradition and the development of revolutionary ideologies, the French Revolution, Marxism, and the Russian Revolution.

**HIST 4336: TWENTIETH-CENTURY EUROPE**

An examination of the major conflicts and developments within twentieth-century European politics, society, culture, and thought.

**HIST 4337: RUSSIA**

The principal forces and events shaping Russia. Emphasis on Imperial Russia's last and Soviet Russia's first half century.

**HIST 4338: MODERN BRITAIN**

Britain since the Industrial Revolution—the Empire, Victorian, and twentieth-century society.

**HIST 4433: EUROPEAN CULTURAL HISTORY: THE NINETEENTH CENTURY**

Development of European thought and culture from Romanticism through Marx and Nietzsche.

**HIST 4434: EUROPEAN CULTURAL HISTORY: THE TWENTIETH CENTURY**

The crises of liberal society and the emergence of twentieth century thought and culture; comparisons of cultural and political life in principal European countries.

**HIST 4531: MEXICO**

The interaction between Indian and Spanish traditions; revolution and change in the twentieth century; U.S. relations with Mexico.

**HIST 4537: REVOLUTION IN LATIN AMERICA**

Revolutionary movements in modern Latin America.

**HIST 4631: CHINA**

China from the time of the Manchu, through the Opium Wars and the T'ai P'ing rebellion, to the victory of Mao over the other revolutionary movements.

**HIST 4632: JAPAN**

Late Tokugawa society, the Meiji Restoration, nationalism, World War II, and American occupation; rise from defeat and emergence as an economic and industrial world power.

**HIST 4831: SCIENCE AND RELIGION IN HISTORICAL PERSPECTIVE**

Historical conflict between theism and modern science; recent efforts at reconciliation and integration.

**HIST 4832: NATIONS AT WAR**

Origins, conduct, and consequences of war; the recurring search for avoidance mechanism; emphasis on wars of the 19th and 20th centuries.

**HIST 4833: EROS AND SOCIETY**

An historical investigation of sexual mores, sex roles, and movements of sexual emancipation.

**HIST 4834: THE INDUSTRIAL REVOLUTION**

The first two centuries of the industrial age in Europe and/or America; the impact of industrialization on politics and society.

**HIST 4835: PSYCHOHISTORY**

Applications of psychology to the interpretation of major figures and events in American and European history.

**HIST 4839: UNDERGRADUATE SEMINAR**

*(May be repeated for credit, with permission of Program Director.)*

*Prerequisite: 15 hours of upper-level credit in history or approval of instructor.)*

**HIST 4931: SELECTED TOPICS IN HISTORY**

*(Identified by specific title each time course is offered.)*

**HIST 4939: UNDERGRADUATE HONORS THESIS**

*Prerequisites: 45 hours of upper-level credit and approval of Program Director.)*

**HIST 5039: HISTORICAL STUDIES**

*(May be repeated for credit, with approval of academic advisor.)* Designed to familiarize the student with graduate historical studies. Consideration of major interpretations and research techniques in one of the following areas: 19th-century America, 20th-century America, modern Europe, and Latin America.

**HIST 5135: AMERICA BETWEEN THE WARS**

An analysis of political styles during prosperity and depression, 1919-1941; particular attention will be paid to intellectual and social patterns, as well as popular culture.

**HIST 5136: AMERICA TODAY**

Current economic, political, and social issues viewed in historical perspective.

**HIST 5137: STUDIES IN SOUTHERN HISTORY**

*(May be repeated for credit with permission of academic advisor.)* Examination of specific problems and themes in Southern history such as race, social class, political and economic development, and regional identity.

**HIST 5231: AMERICAN FOREIGN RELATIONS**

Selected problems in U.S. foreign affairs; emphasis on international relations in the 20th century.

**HIST 5232: AMERICAN RADICAL MOVEMENTS**

Analysis and comparison of the ideology, composition, and social role of such reform movements as abolitionism, evangelicalism, labor reform, feminism, Populism, Progressivism, and socialism.

**HIST 5431: EUROPEAN URBAN STUDIES**

An examination of the dynamics of urbanization in Europe's major cities--Athens, Rome, Florence, Paris, Vienna, London.

**HIST 5432: EUROPEAN IMPERIALISM**

An analysis of the historical descriptions and explanations of European movements toward political and economic world hegemony; from the period of global exploration to the Second World War.

**HIST 5831: STUDIES IN PSYCHOHISTORY**

The individual and the crowd in modern history interpreted through psychological analysis.

**HIST 5931: RESEARCH TOPICS IN HISTORY**

*(Identified by specific title each time course is offered.)*

**HIST 59v9: PROBLEMS IN HISTORY**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and instructor.* Individual projects and planned readings in historical inquiry.

**GRADUATE SEMINARS IN HISTORY:**

*Prerequisite for taking a seminar is 3 hours of graduate credit in history or permission of instructor. Each of the following seminars may be repeated for credit with permission of the Program Director.*

**HIST 6731: EARLY AMERICA****HIST 6732: NINETEENTH-CENTURY AMERICA****HIST 6733: TWENTIETH-CENTURY AMERICA****HIST 6734: EARLY MODERN EUROPE****HIST 6735: MODERN EUROPE****HIST 6736: LATIN AMERICA****HIST 6737: ASIA****HIST 6939: MASTER'S THESIS RESEARCH**

## HUMAN RESOURCES

### HMRS 3331: FUNDAMENTALS OF MANPOWER TRAINING

Technological impacts on the labor force, and techniques of training to accommodate the changing needs of our economic and social system.

### HMRS 3332: HISTORICAL PERSPECTIVE ON HUMAN RESOURCES

The use of human resources in productive activity over time; emphasis on changing attitudes towards labor.

### HMRS 3739: UNDERGRADUATE INTERNSHIP IN HUMAN RESOURCES

*Prerequisites: 15 hours of upper-level credit and approval of program director.* Six hours of supervised work experience each week in an approved public or private agency.

### HMRS 39v9: PROJECTS IN HUMAN RESOURCES

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.* Individual projects and planned readings in the utilization of human resources.

### HMRS 4031: ECONOMICS OF HUMAN RESOURCES

*Prerequisite: Principles of Economics or equivalent.* Education, rates of return, and investment in human resources as they relate to an efficient labor force.

### HMRS 4331: MANPOWER TRAINING PROGRAMS

Organization, sources of funds, costs, and effectiveness of manpower training programs to meet the demands of social change.

### HMRS 4332: EMPLOYEE TRAINING AND RETRAINING

*Prerequisite: MGMT 3031.* Causes of employee obsolescence, forecasting of changing employee skill requirements, and development of programs to combat obsolescence; emphasis on an industrial setting.

### HMRS 5131: MANPOWER MANAGEMENT

Application of management principles to efficient utilization of the labor force.

### HMRS 5132: HUMAN RESOURCES AS A FUNCTION OF CHANGE

Effects of social and technological change upon the human resources of a region; psychological, sociological, and cultural components of human resource availability.

### HMRS 5731: SEMINAR IN UTILIZATION OF HUMAN RESOURCES

Current problems in the area of human resource development and utilization.

### HMRS 5732: SEMINAR IN SKILLS MODERNIZATION

Current programs and policies at the federal, state, and local level for skills modernization and retraining; critical review of program results.

### HMRS 5931: RESEARCH TOPICS IN HUMAN RESOURCES

*(Identified by specific title each time course is offered.)*

### HMRS 59v9: PROBLEMS IN HUMAN RESOURCES

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

### HMRS 67v9: GRADUATE INTERNSHIP IN DEVELOPMENT AND UTILIZATION OF HUMAN RESOURCES

*(Variable credit, 1-6 semester hours).*

*Prerequisites: Master's degree candidacy and approval of advisor and Dean.* Supervised internship with a public or private agency; written and oral reports required.

**HMRS 6939: MASTER'S THESIS RESEARCH****HIGHER EDUCATION****HRED 5931: RESEARCH TOPICS IN HIGHER EDUCATION**

*(Identified by specific title each time course is offered.)*

**HRED 59v9: PROBLEMS IN HIGHER EDUCATION**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**HRED 6031: FUNDAMENTALS OF STUDENT PERSONNEL ADMINISTRATION**

Development of present organization of student personnel services on college campuses.

**HRED 6131: COLLEGE STUDENT AND COMMUNITY**

Impact of mass media, enculturation, social mobility, and population growth on the role of community and industry in education; use of community and industrial resources for college students.

**HRED 6132: THE COMMUNITY JUNIOR COLLEGE**

Background, organization, control, and current roles of two-year collegiate institutions in America.

**HRED 6331: PROBLEMS OF HIGHER EDUCATION IN THE U.S.**

Historical development of leadership and governance in the modern university; the roles of faculty and students.

**HRED 6332: CURRICULUM DEVELOPMENT FOR THE JUNIOR COLLEGE**

Planning curricula for the junior college; meeting needs for alternatives in education, cultural pluralism, and community development.

**HRED 6731: SEMINAR IN HIGHER EDUCATION**

Issues in the coordination, organization, management, curriculum, and personnel practices of institutions of higher education.

**HRED 6739: INTERNSHIP IN HIGHER EDUCATION**

*Prerequisite: approval of advisor and dean.* Supervised observation, participation, and teaching in a junior college setting, under the guidance of a selected professor.

**LEGAL STUDIES****LEGL 3031: FUNDAMENTALS OF AMERICAN JURISPRUDENCE**

Historical foundations of the judicial system and the practice of law in America; availability of judicial processes and services to the general citizen.

**LEGL 3032: JURISPRUDENCE IN TEXAS**

Development of the Texas Constitution and the Texas legal system; current jurisprudential issues.

**LEGL 3033: CRIMINAL JUSTICE IN AMERICA**

The American judicial system and its relation to law enforcement; special attention to police courts, correctional institutions, and systems of probation and parole.

**LEGL 3131: THE AMERICAN POLICE SYSTEM**

Organization and administration of law enforcement agencies at the federal, state, and local level; emphasis on jurisdictions.

**LEGL 3133; 3134: LAW FOR THE LEGAL PARAPROFESSIONAL**

Introduction to American law; purpose of law office personnel; role of lawyer in modern society; the law library and the role of legal research in the practice of law.

**LEGL 3331: LAW ENFORCEMENT AND THE COMMUNITY**

Systems of law enforcement administration and their interaction with communities; emphasis on the multiethnic environments of urban centers.

**LEGL 3431: GENERAL LAW**

The law, procedures, and the documents involved in domestic relations, criminal, and commercial law practices.

**LEGL 3432: LAW OFFICE PROCEDURES**

Organization, control, and operation of a law office, emphasizing the fundamentals of office management and records control.

**LEGL 3531: LEGAL RESEARCH**

The function of the law library in the development of research skills through the use of digests, encyclopedias, reporter systems, and practice manuals.

**LEGL 3532: ESTATES AND TRUST**

The more common forms of wills and trust and the fundamental principles of law applicable to each; the organization and jurisdiction of the appropriate probate court.

**LEGL 3533: CIVIL TRIAL AND APPELLATE PRACTICE**

Principles of the law of torts, including preparation and use of pleadings and other documents involved in a civil action.

**LEGL 3534: CRIMINAL PROCESS AND EVIDENCE**

A comprehensive analysis of criminal procedures and rules of evidence.

**LEGL 39v9: PROJECTS IN LEGAL STUDIES**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and project director.* Individual projects and planned readings in legal studies.

**LEGL 4131: CRIME PREVENTION**

The role of the criminal justice system and the community in crime prevention; analysis of theories, practices, and research.

**LEGL 4132: ORGANIZED CRIME**

Analysis of the growth of organized crime in America, areas of influence strategies and tactics for control, detection, and prevention.

**LEGL 4331: LEGAL DIMENSIONS OF LAW ENFORCEMENT**

Statutory delimitations on the activities of law enforcement agencies; emphasis on major court decisions and litigation case studies.

**LEGL 4334: LAW ENFORCEMENT MANPOWER TRAINING**

Contemporary methods of professional training for police officers; application of behavioral science principles and innovative educational practices.

**LEGL 4531: LAW ENFORCEMENT AND POLITICS**

The impact and influences of the political system and of political practices on operations and policies of law enforcement agencies.

**LEGL 4532: ADMINISTRATIVE LAW**

Laws regulating the powers, procedures, and actions of public administration.

**LEGL 4533: PHILOSOPHY OF LAW**

Major divergent philosophies of law; theoretical foundations of “good” and “just” societies.

**LEGL 4731: SEMINAR ON JUDICIAL SERVICES**

Current approaches to judicial services related to law enforcement; probation, juvenile, and other court-appointed officials.

**LEGL 4732: SEMINAR ON LAW ENFORCEMENT AND SOCIETY**

Trends in the field of law enforcement with respect to contemporary social issues.

**LEGL 4733: SEMINAR ON AMERICAN CONSTITUTIONAL LAW**

Extension of the United States Constitution through judicial decisions; the Supreme Court's influence on the nature of American jurisprudential practices.

**LEGL 4931: SELECTED TOPICS IN LEGAL STUDIES**

*(Identified by specific title each time course is offered.)*

**LEGL 6131: TEXAS SCHOOL LAW**

Texas Education Code and significant state and federal decisions affecting the authority, responsibilities, liabilities, and appeals related to the operation of public school systems.

### LIBRARY SCIENCE

**LIBR 4931: TOPICS IN LIBRARY SCIENCE**

*(Identified by specific title each time course is offered.)*

**LIBR 5931: RESEARCH TOPICS IN LIBRARY SCIENCE**

*(Identified by specific title each time course is offered.)*

**LIBR 59v9: PROBLEMS IN LIBRARY SCIENCE**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**LIBR 6131: SELECTION AND USE OF LIBRARY MATERIALS**

Fundamental criteria, tools, and sources applicable to the selection of print and non-print materials and their use in effective teaching units in elementary and secondary school libraries and learning resource centers.

**LIBR 6132: CATALOGING AND CLASSIFICATION**

Fundamentals of cataloging print and non-print materials, with reference to both Dewey theory and Library of Congress classification.

**LIBR 6133: REFERENCE AND BIBLIOGRAPHY**

Study, evaluation, and application of reference sources used in elementary and secondary school libraries and learning resource centers.

**LIBR 6739: INTERNSHIP IN LIBRARY PRACTICE**

Supervised field experiences in either an elementary or secondary school library or learning resource center.

### LINGUISTICS

**LING 3131: THE STRUCTURE OF ENGLISH**

Fundamentals of phonology, morphology, syntax, and semantics; survey of analytical approaches and the trend from prescriptivism to descriptivism.

**LING 3331: APPLIED LINGUISTICS: ENGLISH**

Topics in English grammar for the prospective teacher of English in secondary school; opportunity to concentrate on either traditional or structural grammar.

**LING 3333: APPLIED LINGUISTICS: SPANISH**

Topics in Spanish grammar for the prospective teacher of Spanish in secondary school.

**LING 39v9: READINGS IN LINGUISTICS**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: Approval of advisor and instructor.*

**LING 4131: HISTORY OF THE ENGLISH LANGUAGE**

The evolution of English as a medium of literary and colloquial expression.

**LING 4331: TEACHING ENGLISH AS A SECOND LANGUAGE**

Methods of teaching English to native speakers of Spanish.

**LING 4731: SEMINAR IN ENGLISH LINGUISTICS**

*Prerequisite: LING 3131 or equivalent.* Contemporary theories of the linguistic analysis of English; emphasis on transformational-generative models, with opportunity for individual concentration on a selected theorist.

**LING 4931: SELECTED TOPICS IN LINGUISTICS**

*(Identified by specific title each time course is offered.)*

**LING 5031: TECHNIQUES OF TEACHING TO DEVELOP BILINGUALISM**

Comparison of curricular materials in English and another language with respect to problems of communication and comprehension; techniques of explaining unfamiliar cultural concepts.

**LING 5032: LANGUAGE DEVELOPMENT FOR THE BILINGUAL CHILD**

Language acquisition theories applied to bilingualism; theory and techniques of remediation for bilingual children.

**LITERATURE**

Note: All writing courses are listed under Communications (COMM).

**LITR 3032: LITERATURE AND SOCIETY**

Literature as a social phenomenon; the interplay of authors and social issues.

**LITR 3132: SELECTIONS FROM NON-WESTERN LITERATURE**

Masterpieces of Indian, Chinese, and Japanese literature.

**LITR 3334: MYTHOLOGY**

Great myths and their reworkings in literature.

**LITR 3335: LITERATURE OF THE SOUTHWEST**

The Southwest in historical and contemporary contexts; Indian lore, the Hispanic presence, and frontier traditions.

**LITR 3336: THE DETECTIVE STORY**

History and significance of the genre; major authors, classic works, and great detectives.

**LITR 3631: SHAKESPEARE**

Shakespeare's major plays and their production in the theatre of the English Renaissance.

**LITR 39v9: READINGS IN LITERATURE***(Variable credit, 1-6 semester hours)**Prerequisite: approval of advisor and readings director.* Individually planned readings in literature.**LITR 4031: TEACHING LITERATURE IN THE SECONDARY SCHOOL**

Methods of integrating reading, writing, speaking, and listening; planning and structuring units, use of media and resource materials, and evaluative techniques.

**LITR 4131: LITERARY CRITICISM**

Theories about the nature of verbal art and the relationship between literature and reality.

**LITR 4132: MODERN AMERICAN AND ENGLISH POETRY**

Myth and epic, the personal poem, expressionism, neoromanticism; such poets as Yeats, Auden, Stevens, and Frost.

**LITR 4133: MODERN DRAMA**

Realists from Ibsen to Brecht, the Expressionists, Absurdist, and historical dramatists; new stage conceptions and philosophical currents.

**LITR 4134: THE MODERN AMERICAN AND ENGLISH NOVEL**

Major works of novelists such as Conrad, Joyce, Dreiser, and Faulkner.

**LITR 4137: REALMS OF FANTASY**

Fantasy as both childhood and adult activity: its uses in developing personality and exploring reality.

**LITR 4138: LITERATURE AND WAR**

Literature dealing with war: fiction, poetry, biography, memoir, journalism, and film.

**LITR 4139: LITERATURE AND FILM***(May be repeated for credit)*

Generic and thematic approach to the study of books and movies in areas such as the Western, science fiction, the love story, and the spy story.

**LITR 4231: THE BIRTH OF AMERICAN LITERATURE**

Puritan pioneers, Southern adventurers, Franklin, the Revolutionaries, and early prose romancers.

**LITR 4232: THE AMERICAN RENAISSANCE**

The Transcendentalists, historical fiction, tragic critiques of America, and poetry; writers such as Emerson, Thoreau, Cooper, Hawthorne, Melville, Poe, and Whitman.

**LITR 4233: AMERICAN LITERATURE: CIVIL WAR TO WORLD WAR I**

The beginnings of modern America: Twain, Howells, and Crane; Naturalists and Muckrakers; the psychological realism of Henry James.

**LITR 4234: AMERICAN LITERATURE: WORLD WAR I TO WORLD WAR II**

Early twenties, the Gatsby Age, the Great Depression, and the shift to social realism; Pound, Eliot, Hemingway, Fitzgerald, Faulkner, Dos Passos, and Steinbeck.

**LITR 4235: CONTEMPORARY AMERICAN LITERATURE**

Post-World War II figures and trends; the literary diagnosis of the present and prognosis for the future; such writers as Mailer, Salinger, Updike, and Roth.

**LITR 4236: THE ROMANTIC MOVEMENT IN ENGLISH LITERATURE**

The major romantic poets and novelists; Blake, Byron, Bronte, Scott, and others.

**LITR 4237: VICTORIAN LITERATURE**

Major Victorian essayists and poets; literary responses to industrialization, empire, and class struggle.

**LITR 4238: RISE AND DEVELOPMENT OF THE ENGLISH NOVEL**

Representative novelists from three centuries: Defoe to Dickens to D. H. Lawrence.

**LITR 4331: MEXICAN-AMERICAN AND CHICANO LITERATURE**

The Mexican-American and Chicano experience as reflected in contemporary American writing.

**LITR 4332: BLACK LITERATURE**

The Afro-American experience as expressed in literature; exploration of thematic connections with other art forms.

**LITR 4431: NINETEENTH-CENTURY RUSSIAN NOVEL**

Russian novelists of the 19th Century; emphasis on the major works of Tolstoy and Dostoyevsky. (Readings in original or translation, depending on language proficiency.)

**LITR 4432: RUSSIAN LITERATURE OF THE SOVIET PERIOD**

Literature caught between conflicting demands of ideology and art; 1920's to the present. (Readings in original or translation, depending on language proficiency.)

**LITR 4437: CLASSICAL GREEK LITERATURE**

Selections from Homer, Plato, and the Greek playwrights, emphasizing portrayal of timeless human problems.

**LITR 4438: CONTEMPORARY LATIN-AMERICAN FICTION**

Selected works by Borges, Garcia Marquez, Carpentier, Vargas Llosa, Cortazar, and others. (Readings in original or translation, depending on language proficiency.)

**LITR 4531: LITERATURE OF MYSTICAL EXPERIENCE**

Mystical experience: secular and religious, ancient and contemporary, Western and non-Western.

**LITR 4532: THE HEROIC TRADITION IN WESTERN LITERATURE**

The thousand faces of the hero from Homer's Achilles to Malcolm X and others.

**LITR 4533: TRAGEDY**

Man's capacity for tragedy and the dimensions of tragic experience as expressed in Western literature.

**LITR 4534: COMEDY: LAUGHTER, FOLLY, AND LOVE**

The comic view of man's predicament as seen in such writers as Aristophanes, Moliere, Wilde, and others.

**LITR 4535: THE LITERATURE OF ADOLESCENCE**

Growing up: variance and continuity in depictions of adolescence by American and other writers.

**LITR 4536: IMAGES OF THE FUTURE IN SCIENCE FICTION**

Science fiction as literature, social criticism, and prediction.

**LITR 4537: WOMAN AND LITERATURE**

Heroines from Eve to Molly Bloom: literature constructs the female; emphasis on 19th and 20th Century works.

**LITR 4732: SEMINAR ON THE ART OF FILM**

Dramatic, narrative, and visual aesthetics of cinematic art; critical viewing of selected film classics.

**LITR 4931: SELECTED TOPICS IN LITERATURE**

*(Identified by specific title each time course is offered.)*

**LITR 4939: UNDERGRADUATE HONORS THESIS**

*Prerequisites: 30 hours of upper-level credit and approval of program director.*

**LITR 5131: RELIGIOUS EXPRESSION IN LITERATURE**

Literature as it engages religious questions of value, human identity, and personal destiny; its response to spiritual crisis in particular times and cultures.

**LITR 5133: LOVE IN WESTERN LITERATURE**

The human capacity for love and its potential meaning as explored in Western literature.

**LITR 5134: UTOPIA: DESIGNERS AND DETRACTORS**

Major utopian and dystopian writings from Plato and More to Orwell and Skinner.

**LITR 5136: THE EXISTENTIALIST TRADITION**

Plays, novels, and philosophical works by such writers as Nietzsche, Sartre, Camus, Marcel, and Buber.

**LITR 5137: LITERATURE AND PSYCHOLOGY**

Application of psychological concepts to the understanding of literature.

**LITR 5138: THE NOVEL OF CULTURAL DECAY**

European and American fiction depicting the collapse of traditional social structures and the erosion of bourgeois values, 1870 to 1914.

**LITR 5332: LITERATURE OF THE SOUTH**

Representative figures and works of the Southern literary renaissance.

**LITR 5334: CONTEMPORARY JEWISH LITERATURE**

Diaspora, Holocaust, Israel; separate identity and cultural assimilation; Jewish life and consciousness explored by writers such as Bellow, Babel, Malamud, and Singer.

**LITR 5335: THE MODERN CONTINENTAL NOVEL**

Works by representative authors such as Mann, Proust, Kafka, Celine, Musil, and Moravia.

**LITR 5531: AMERICAN DREAMS AND TRAGEDIES**

American "dreams" and their denials in literature and history: salvation and damnation, freedom and slavery, Union and Civil War, civilization and alienation.

**LITR 5532: THE INDUSTRIAL SOCIETY**

Historical and theoretical treatment of industrialism and its cultural effects from Emerson and the writers of 1830 to Joyce Carol Oates and the writers of the present.

**LITR 5533: NATURE IN AMERICAN LITERATURE**

Changing attitudes toward nature as reflected in American literature from Thoreau to Faulkner.

**LITR 5534: THE AMERICAN EXPATRIATES**

American writers in self-imposed exile; escape and search, criticism and affection in their relationship to the U.S.A.

**LITR 5632: CHAUCER AND THE MIDDLE AGES**

The elegant and introspective culture and literature of the late Middle Ages in England.

**LITR 5633: SPENSER AND MILTON**

The English epic at its height: The Faerie Queene and Paradise Lost.

**LITR 5634: THE ENGLISH RENAISSANCE**

Poetry, prose, and drama from England's richest literary era; More, Sidney, Raleigh, Marlowe, Jonson, and Donne.

**LITR 5635: RESTORATION AND 18th CENTURY ENGLISH LITERATURE**

Selected prose, poetry, and drama by such authors as Congreve, Pope, Swift, Boswell, and Dr. Johnson.

**LITR 5731: SEMINAR ON CONTEMPORARY MINORITY WRITERS**

Examination of works by contemporary American writers from ethnic minority groups.

**LITR 5732: SEMINAR ON SHAKESPEARE**

Selected plays by England's greatest poet and dramatist, studied both as literature and as theatre.

**LITR 5733: SEMINAR IN AMERICAN CULTURE**

Exploration of a selected period, trend, or event that has left a permanent imprint (cultural, social, intellectual) on American society.

**LITR 5931: RESEARCH TOPICS IN LITERATURE**

*(Identified by specific title each time course is offered.)*

**LITR 59v9: PROBLEMS IN LITERATURE**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and program director.*

**LITR 6939: MASTER'S THESIS RESEARCH**

## MANAGEMENT

**MGMT 3031: MANAGEMENT THEORY AND PRACTICE**

Management policies and processes, including planning, organizing and controlling; overview of production and functions and of organization theory and behavior.

**MGMT 3033: INFORMATION SYSTEMS FOR MANAGEMENT**

Fundamentals of information systems to assist management in the operation and control of complex organizations.

**MGMT 3131: QUANTITATIVE METHODS FOR MANAGEMENT**

*Prerequisite: STAT 3231 or equivalent.* Introduction to quantitative techniques for management; probability, inventory and production models, linear programming, queuing, replacement models, Markov analysis, network models.

**MGMT 3231; 3232: LEGAL DIMENSIONS OF BUSINESS**

Legal principles in management; contracts, agencies, bonding, negotiable instruments, sales, mortgage liens, insurance, real estate, bankruptcy, partnership, and corporations.

**MGMT 3331: PERSONNEL ADMINISTRATION**

Problems and practices in personnel management; selection, placement, evaluation, promotion, and termination.

**MGMT 3332: PRODUCTION SYSTEMS**

*Prerequisite: MGMT 3031 or equivalent.* Managerial procedures in the production process; planning, control, standards, and reports.

**MGMT 3531: WAGE AND SALARY ADMINISTRATION**

*Prerequisite: MGMT 3031 or equivalent.* Job performance evaluation and development of compensation plans and programs.

**MGMT 3731: SEMINAR IN ENTREPRENEURSHIP**

*Prerequisite: approval of program director.* Models of personal dynamics in the development and expansion of commercial enterprise.

**MGMT 3739: UNDERGRADUATE INTERNSHIP IN MANAGEMENT**

*Prerequisites: 15 hours of upper-level credit and approval of program director.* Six hours of supervised work experience each week in an approved business or industrial firm.

**MGMT 39v9: PROJECTS IN MANAGEMENT**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and project director.* Individual projects and planned readings in management.

**MGMT 4131: INDUSTRIAL ORGANIZATION**

Industrial organization, behavior, and performance of firms in the American economic system, roots of economics utilized to analyze performance of firms in their competitive setting and the impact of government regulations.

**MGMT 4132: BUSINESS POLICY**

*Prerequisite: 30 hours of upper-level credit.* The formulation of successful business policies and the maintenance of efficient business organization; application of management tools in the executive decision-making process.

**MGMT 4133: MANAGEMENT OF SMALL BUSINESS**

*Prerequisite: MGMT 3031 or equivalent.* Organization and operation of small business enterprises; sources of capital, management assistance, and personnel.

**MGMT 4134: COMPUTER CENTER MANAGEMENT**

Job flow, priority systems, second order effects of Peiciny policies, open and closed shops, effects of scale, cost vs. load, use of PERT in scheduling.

**MGMT 4135: CREDIT MANAGEMENT**

Application of marketing and management principles to the analysis and operation of retail and commercial credit agencies, organizations, and departments.

**MGMT 4332: ORGANIZATION THEORY**

*Prerequisite: MGMT 3031 or equivalent.* Formal and informal organizational structure; variables affecting the administration of complex organizations.

**MGMT 4333: COLLECTIVE BARGAINING IN THE PUBLIC SECTOR**

Comparisons and contrasts of collective bargaining in the public and private sectors; the impact of unionization on public administration.

**MGMT 4531: INDUSTRIAL LABOR RELATIONS**

Collective bargaining processes in American industry; impact of labor-management relations on wage and employment levels and on national income.

**MGMT 4532: PLANNING FOR INDUSTRIAL CHANGE**

*Prerequisite: MGMT 3031 or equivalent.* Dynamics, values, and goals of planned industrial change; implications for market forecasting and training programs.

**MGMT 4533: INTERNATIONAL BUSINESS MANAGEMENT**

*Prerequisite: MGMT 3031 or equivalent.* Managerial considerations in international business operations; government involvement, organizational structure, operating policies, and market peculiarities.

**MGMT 4534: ORGANIZATIONAL BEHAVIOR**

*Prerequisite: MGMT 3031 or equivalent.* Dynamics of organizational behavior in business, interpreted from a behavioral science perspective.

**MGMT 4535: FUNDAMENTALS OF MANAGEMENT ENGINEERING**

Techniques of management engineering in public and private institutions; work measurement, system and procedures analysis, facilities planning, and productivity improvement procedures.

**MGMT 4536: ORGANIZATIONAL DEVELOPMENT**

Evaluation of change processes and development in organizations; behavioral methodology and the role of the change agent.

**MGMT 4731: SEMINAR ON THE SOCIAL RESPONSIBILITY OF BUSINESS**

The changing role of business enterprise in society; influences of government regulatory agencies on social consciousness in the business world.

**MGMT 4732: SEMINAR IN INTERNATIONAL BUSINESS**

*Prerequisite: 30 hours of upper-level credit.* Aspects of conducting business with firms of other nations; bases for decision-making about international transactions.

**MGMT 4931: SELECTED TOPICS IN MANAGEMENT**

*(Identified by specific title each time course is offered.)*

**MGMT 5031: MANAGERIAL PROCESSES**

Basic management theory and its application to organization, staffing, planning, and control.

**MGMT 5032: MANAGEMENT INFORMATION SYSTEMS**

Principles and procedures used in the development of information systems to facilitate the management functions of planning, organizing, integrating, measuring, and controlling.

**MGMT 5034: MANAGERIAL THEORY APPLIED TO EDUCATION**

Adaptations of the fundamentals of management to program development, personnel, and fiscal resources.

**MGMT 5035: THE LAW, BUSINESS, AND SOCIETY**

*(For graduate students without a background in Business Law).* Legal principles underlying the American judicial system; legal forms of business, contractual rights, and government regulations.

**MGMT 5131: BUSINESS AND SOCIETY**

Role of the firm in society; business responsibilities to society from ethical, political, economic, and societal points of view.

**MGMT 5132: ORGANIZATION THEORY AND ANALYSIS**

*Prerequisite: MGMT 5031 or equivalent.* Behavioral problems associated with innovation, resistance to change, and the development of complex organizations and administrative processes.

**MGMT 5133: ADVANCED INDUSTRIAL ORGANIZATION**

*Prerequisite:* ECON 3331 or ECON 5334 or an equivalent. Application of intermediate microeconomic theory to analysis of the structure, conduct, and performance of firms in various market structures.

**MGMT 5134: BUSINESS RESEARCH AND REPORTS**

Methods of obtaining, evaluating, and reporting business research procedures. (Formerly MGMT 5033)

**MGMT 5331: PERSONNEL MANAGEMENT**

*Prerequisite:* MGMT 5031 or equivalent. The employment, understanding, and management of people; aspects of employee morale and productivity.

**MGMT 5332: LABOR RELATIONS**

Relationships between unions and management and the structure of industrial bargaining; legal dimensions of employee relations, strikes, and settlements.

**MGMT 5431; 5432: QUANTITATIVE TECHNIQUES FOR MANAGERS**

*Prerequisites:* MGMT 5031 and STAT 5031 or equivalent. Mathematical-statistical techniques in management; replacement models, Markov chains, inventory and production models, simulation, queuing, linear programming, transportation, network analysis (PERT, CPM).

**MGMT 5531: FORECASTING CHANGE**

*Prerequisite:* Introductory Statistics or equivalent. Application of techniques for the analysis and forecasting of industrial change; emphasis on short-term prediction problems.

**MGMT 5532: LONG-RANGE FORECASTING AND PLANNING**

*Prerequisite:* Introductory Statistics or equivalent. Long-range forecasting of population, productivity and employment, economic sectors, and industries and products; corporate long-term planning based on forecasts.

**MGMT 5731: SEMINAR IN INDUSTRIAL LEADERSHIP**

Fundamentals of group theory as applied in training individuals to assume leadership roles in business and industry.

**MGMT 5732: SEMINAR IN TECHNOLOGICAL AND INDUSTRIAL CHANGE**

Technological impacts on industry; scientific and financial aspects of research and development.

**MGMT 59v9: PROBLEMS IN MANAGEMENT**

*(Variable credit, 1-6 semester hours)*

*Prerequisite:* approval of advisor and problem director.

**MGMT 6131: JOB EVALUATION AND COMPENSATION**

*Prerequisite:* MGMT 5031 or equivalent. Financial dimensions of work force management; wage and salary administration, wage incentives, compensation for different types of employees, and the role of fringe benefits.

**MGMT 6132: PRODUCTION MANAGEMENT**

Design, operation, and control of industrial enterprises; plant location, scheduling, quality control, layouts, facilities planning, material processing, and inventory control.

**MGMT 6133: PRINCIPLES OF EDUCATION EXECUTIVE DEVELOPMENT**

Analysis of the responsibilities and challenges of each level of educational administration; attitudes, academic performance, and psychological qualities in relation to management potential.

**MGMT 6331: DIRECTED INDUSTRIAL CHANGE**

Measures for guiding change in the industrial setting; impacts on the labor force and the physical production process.

**MGMT 6332: INTERNATIONAL BUSINESS MANAGEMENT**

Cultural, political, economic, and financial dimensions of managing international business.

**MGMT 6731: BUSINESS POLICY SEMINAR**

*Prerequisite: approval of program director.* Contemporary approaches to the formulation and execution of business policy.

**MGMT 67v9: GRADUATE INTERNSHIP IN MANAGEMENT**

*(Variable credit, 1-6 semester hours)*

*Prerequisites: master's degree candidacy and approval of advisor and dean.* Supervised internship with an approved firm or with an industrial or governmental agency; written and oral reports required.

**MGMT 6939: MASTER'S THESIS RESEARCH****MARKETING****MKTG 3031: MARKETING FUNDAMENTALS, POLICIES, AND PRACTICES**

*Prerequisite: Principles of Economics or equivalent.* Marketing as a function of business and as a part of the social process; market forces, determination of prices, distribution, and promotion.

**MKTG 3131: CONSUMER BEHAVIOR**

*Prerequisite: MKTG 3031 or equivalent.* Analysis of consumer behavior and theories of consumer choice; techniques and problems in predicting consumer behavior.

**MKTG 3132: RETAIL MANAGEMENT**

*Prerequisite: MKTG 3031 or equivalent.* The organization, operation, and management of retail establishments; inventory methods; retail buying and selling.

**MKTG 3133: MARKETING CHANNELS: STRUCTURE AND STRATEGY**

*Prerequisite: MKTG 3031 or equivalent.* Development of marketing channels and appropriate planning strategies.

**MKTG 3331: PROMOTIONAL STRATEGIES AND POLICIES**

*Prerequisite: MKTG 3031 or equivalent.* Interaction of marketing strategies within business firms; impact of marketing decisions on the total organization, and methods of achieving maximum return from marketing efforts.

**MKTG 3531: MARKETING RESEARCH**

*Prerequisites: MKTG 3031 and Business Statistics.* Applications of statistical methods to solution of marketing problems; emphasis on survey methodology, with opportunities for individual and group projects.

**MKTG 3739: UNDERGRADUATE INTERNSHIP IN MARKETING**

*Prerequisites: 15 hours of upper-level credit and approval of program director.* Six hours of supervised work experience each week in an approved marketing unit.

**MKTG 39v9: PROJECTS IN MARKETING**

*(Variable credit, 1-6 semester hours.)*

*Prerequisite: approval of program director.* Individual projects and planned readings in marketing or marketing management.

**MKTG 4131: SALES MANAGEMENT**

*Prerequisite: MKTG 3031 or equivalent.* Basic principles and current practices of sales and promotional management; personal selling and sales planning.

**MKTG 4332: MARKETING FOR SERVICE INSTITUTIONS**

*Prerequisite: approval of program director.* Marketing functions in institutional administration: pricing, policies, purchasing, public relations, insurance considerations, and consumer behavior.

**MKTG 4333: PRICING DECISIONS IN MARKETING POLICY**

*Prerequisite: MKTG 3031 or equivalent.* Determination of price structure under various marketing conditions; pricing as a function of promotion strategies and organizational structure.

**MKTG 4334: PURCHASING AND INDUSTRIAL MARKETING**

*Prerequisite: MKTG 3031 or equivalent.* Analysis of purchasing functions in business and industry; problems of efficiency and strategy in procurement.

**MKTG 4531: INTERNATIONAL MARKETING MANAGEMENT**

*Prerequisite: MKTG 3031 or equivalent.* Adaptation of marketing tools used in individual domestic business firms to an international setting; international marketing opportunities and principles.

**MKTG 4631: PROBLEMS IN MARKETING MANAGEMENT**

*Prerequisites: MKTG 3531 or equivalent, and senior-level standing.* An integrative, capstone course using marketing and behavioral concepts for solution of comprehensive marketing problems; marketing management as a source of analysis, planning and control. (Replaces MKTG 4331.)

**MKTG 4731: SEMINAR IN MARKETING**

*Prerequisite: 30 hours of upper-level credit.* Analysis of the literature in the marketing discipline as related to the past, present, and future.

**MKTG 4931: SELECTED TOPICS IN MARKETING**

*Identified by specific title each time course is offered.*

**MKTG 5031: FOUNDATIONS OF MARKETING MANAGEMENT**

The role of marketing in the business process; price determination, distribution of goods, promotion, and organization policies.

**MKTG 5131: QUANTITATIVE METHODS IN MARKETING**

*Prerequisite: MKTG 5031 or equivalent.* Analysis of marketing methods; designs, data collecting, and techniques for solving marketing problems.

**MKTG 5331: MANAGING AND TRAINING FOR RETAIL SALES**

Retailing from a managerial view; layout, budgeting, consumer behavior, merchandising, advertising, firm services, accounting controls, and personnel administration and training.

**MKTG 5332: BASES FOR MARKETING DECISIONS**

*Prerequisite: MKTG 5031 or equivalent.* The decision-making processes of the marketing executive; pricing, distribution, competition, product strategy, and market research problems.

**MKTG 5531: INDUSTRIAL MARKETING**

Industrial purchasing and selling; buying process, development of new markets, efficient procurement, and distribution of materials.

**MKTG 5532: MULTINATIONAL MARKETING MANAGEMENT**

*Prerequisite: MKTG 5031 or equivalent.* Topics in multinational marketing: market development, foreign trade, and problems of institutions engaged in international trade.

**MKTG 5731: SEMINAR ON MARKETING STRATEGY**

*Prerequisite: MKTG 5031 or equivalent.* An integrated study of marketing methods and techniques designed to evaluate the effectiveness of long-run marketing policies and systems which facilitate sales and contribute to profit performance.

**MKTG 5732: SEMINAR ON CONSUMER/MARKETING RESEARCH**

*Prerequisite: MKTG 5031 or equivalent.* Case study approach to evaluating marketing strategies based on behavioral science principles; recent trends in consumer research and their influences on marketing management.

**MKTG 59v9: PROBLEMS IN MARKETING**

*(Variable credit, 1-6 semester hours.)*

*Prerequisite: approval of advisor and problem director.*

**MKTG 67v9: GRADUATE INTERNSHIP IN MARKETING**

*(Variable credit, 1-6 semester hours)*

*Prerequisites: master's degree candidacy and approval of advisor and dean.* Supervised marketing internship with approved firm or industry; written and oral reports required.

## MATHEMATICS

**MATH 3033: STRUCTURE OF ARITHMETIC FOR ELEMENTARY TEACHERS**

A set-theory approach to development of the real number system; fundamental operations and concepts of arithmetic, systems of numeration (Field experiences required.)

**MATH 3034: FUNDAMENTAL ALGEBRA FOR SECONDARY TEACHERS**

*Prerequisite: MATH 3131 or equivalent.* Linear transformations and matrices, simultaneous equations, polynomials, and elementary topics in number theory and in theory of equations.(Field experiences required.)

**MATH 3035: GEOMETRY FOR SECONDARY TEACHERS**

*Prerequisite: MATH 3131 or equivalent.* Formal set theory, logical structure, and coordinate geometries; plane and solid figures.(Field experiences required.)

**MATH 3036: MATHEMATICAL TOPICS FOR SECONDARY TEACHERS**

Illustrative problems to introduce secondary mathematics teachers to graph theory, topology, game theory, and algorithmic applications.

**MATH 3037: APPLICATIONS OF MATHEMATICS FOR ELEMENTARY TEACHERS**

Functions, graphing, operations and relations; informal geometry, topology, and measurement.(Field experiences required.)

**MATH 3131: APPLIED LINEAR ALGEBRA**

*Prerequisite: College Algebra.* Vector spaces, linear transformations, determinants, matrices, eigenvalues, and eigenvectors; emphasis on applications in technology and in simulation models.

**MATH 3132: LINEAR PROGRAMMING**

Mathematical structure of linear programming, applications from linear algebra, simplex and other methods.

**MATH 3133: MODERN ALGEBRA**

Sets, relations, maps, groups, and homomorphisms; rings, integral domains, fields.

**MATH 3231: FUNCTIONS OF MORE THAN ONE VARIABLE**

*Prerequisite: Introductory Calculus.* Infinite series, indeterminate forms, multiple integrals, partial differentiation, functions of multiple variables, and related topics.

**MATH 3232: FUNCTIONS OF A COMPLEX VARIABLE**

*Prerequisite: MATH 3231 or equivalent.* Differentiability, Cauchy-Riemann equations, integral theorems, power series, analytic functions and continuation, and contour integration.

**MATH 3331: APPLICATIONS OF THE CALCULUS**

*Prerequisite: MATH 3231 or equivalent.* Introductory approaches to ordinary and partial differential equations, the calculus of variations, vector analysis, line and surface integrals, Green's Theorem, and complex analysis.

**MATH 3332: APPLICATIONS OF CALCULUS TO ELECTRONIC, OPTICAL, AND MECHANICAL SYSTEMS**

*Prerequisites: Approval of advisor and 18 hours of science and technology (Not available for credit to students with more than six hours of calculus).* Transcendental functions, time and frequency domain expressions and network transform solutions.

**MATH 3333: APPLICATIONS OF LINEAR SYSTEMS ANALYSIS FOR ELECTRONIC, OPTICAL, AND MECHANICAL SYSTEMS**

*Prerequisites: MATH 3332 or equivalent and 18 hours of science and technology.* Techniques for analogous systems. Fourier and Laplace transforms. Matrix operations.

**MATH 39v9: PROJECTS IN MATHEMATICS**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and project director.* Individual projects and planned readings in mathematics.

**MATH 4031: HISTORY OF THE MATHEMATICAL SCIENCES**

Temporal relationships of concepts by means of biographic studies; development of mathematical theory and applications, from ancient to contemporary times.

**MATH 4131: ORDINARY DIFFERENTIAL EQUATIONS AND APPLICATIONS**

*Prerequisite: Calculus.* Solutions of ordinary differential equations; geometric and physical applications.

**MATH 4132: THEORY OF NUMBERS**

Prime numbers, congruences, reciprocity, algebraic numbers, and applications.

**MATH 4133: TOPOLOGY**

*Prerequisite: Calculus.* Topological techniques in analysis; metric spaces, continuous transformations, connectivity, separation, compactness; nets and filters, cardinal arithmetic.

**MATH 4134: ADVANCED TOPICS IN LINEAR SYSTEMS ANALYSIS FOR ELECTRONIC, OPTICAL, AND MECHANICAL SYSTEMS**

*Prerequisites: MATH 3333 and CTEC 3132 and PROC 3131 or PROC 3132.* Z transforms and state space methods.

**MATH 4231: PREDICATE LOGIC**

An introduction to predicate logic; elements of formal logic systems; set theory and propositional calculus, completeness theorems, and the nature of proof.

**MATH 4232: FOUNDATIONAL MATHEMATICS**

Number systems, axiom systems, formal systems, recursive functions, and implications for automata.

**MATH 4233: DISCRETE STRUCTURES**

Applications of finite mathematics; algebra of sets, relations, algebraic structures, Boolean logic, algorithms, and graph theory.

**MATH 4234: INTRODUCTION TO NUMERICAL ANALYSIS**

*Prerequisites: MATH 3131 and MATH 4131 or equivalents and compiler language proficiency.* Numerical solution of linear and non-linear equations, interpolation and approximation, numerical differentiation and integration, and eigenvalue problems.

**MATH 4235: THEORY OF MODELS**

*Prerequisite: permission of instructor.* Mathematical modeling of complex systems for digital simulation; methodology, aggregation, causality and randomness, and simulation methodology.

**MATH 4332: APPLICATIONS OF PROBABILITY THEORY**

*Prerequisite: STAT 4432 or equivalent.* Uses of random walks, Markov chain processes, and the central limit theorem; diffusion, branching processes, and special properties of discrete and continuous variables.

**MATH 4334: FORECASTING SYSTEMS**

*Prerequisite: STAT 4432 or equivalent.* Techniques for forecasting; time series, statistical methods, and analysis of error.

**MATH 4431; 4432: INTRODUCTION TO ANALYSIS**

*Prerequisites: MATH 3131 and MATH 3231 or equivalents.* Real numbers, sequences and series, differentiation, and measure theory; Riemann, Stieltjes, and Lebesgue integrals.

**MATH 4531: PARTIAL DIFFERENTIAL EQUATIONS AND APPLICATIONS**

*Prerequisite: MATH 4131 or equivalent.* Solution of partial differential equations and boundary value problems, with computational applications.

**MATH 4533: STRUCTURE OF MODERN GEOMETRY**

*Prerequisite: MATH 3133 or equivalent.* Axioms of incidence, order, congruence, and continuity; models, independence and consistency, Euclidean and non-Euclidean geometries.

**MATH 4534: MATHEMATICAL INFORMATION THEORY**

*Prerequisite: STAT 4432 or equivalent.* Probability in finite sample spaces; coding theorems, decision schemes, Shannon's theorem and applications.

**MATH 4535: DECISION THEORY AND APPLICATIONS**

*Prerequisite: STAT 4432 or equivalent.* Bayesian and minimax strategies in response to statistical uncertainty.

**MATH 4536: APPROXIMATION THEORY**

*Prerequisites: MATH 3131 and MATH 3231, or equivalents, and experience with a compiler language.* Normed function spaces and convexity; existence, uniqueness, and characterization of best approximation; asymptotic behavior of error.

**MATH 4631; 4632: APPLIED MATHEMATICAL METHODS**

*Pre- or corequisite: MATH 4131 or equivalent.* Laplace and Fourier transforms, Fourier series, boundary value problems; applications of Hermite and Legendre polynomials; Bessel, elliptic, and other special functions.

**MATH 4931: SELECTED TOPICS IN MATHEMATICS**

*(Identified by specific title each time course is offered.)*

**MATH 5031: APPLICATIONS OF MODERN ALGEBRA**

Matrices, vectors, groups, linear mappings and related topics; emphasis on applications for mathematics teachers.

**MATH 5131: ADVANCED ALGEBRA**

Inner product spaces, bilinear and quadratic forms, polynomial rings, finite dimensional spectral analysis, canonical forms.

**MATH 5132: REAL ANALYSIS**

General measure and integration theory, Banach and Hilbert spaces; applications to approximation theory, probability theory, and summability.

**MATH 5133: COMPLEX ANALYSIS**

Analytic functions and analytic continuation, Riemann surfaces, applications of conformal mappings to boundary value problems.

**MATH 5331: PROBABILITY AND STATISTICS WITH APPLICATIONS**

Random walk and other stochastic processes, testing of hypotheses, estimation, and decision theory.

**MATH 5332: INFORMATION THEORY AND APPLICATIONS**

Algebraic coding theorems, group codes, and applications to communication theory.

**MATH 5333: NUMERICAL ANALYSIS**

Numerical linear algebra, ordinary and partial differential equations, integral equations, and boundary value problems; computer applications.

**MATH 5931: RESEARCH TOPICS IN MATHEMATICS**

*(Identified by specific title each time course is offered.)*

**MATH 59v9: PROBLEMS IN MATHEMATICS**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**MATH 6939: MASTER'S THESIS RESEARCH****MUSIC****MUSC 3131: THE ART OF LISTENING**

Training the ear to recognize and distinguish the elements of music and how major composers used them.

**MUSC 3133: MUSIC IN HOUSTON**

A systematic study of music illustrated principally through attendance at Houston Area musical performances during a given semester.

**MUSC 3231: THE ART OF MUSIC**

An historical approach to the development of music in the world's principal cultures.

**MUSC 3233: MUSIC IN AMERICA**

A history of American music with emphasis on popular genres.

**MUSC 4031: MUSIC IN THE PUBLIC SCHOOLS**

Survey of instructional techniques; songs, records, and other music materials for use in the schools; instrumental skills for the classroom.

**MUSC 4231: VOCAL MUSIC**

History of music for the voice from Gregorian Chant to the present.

**MUSC 4232: INSTRUMENTAL MUSIC**

An historical survey of music from the earliest notation for instruments to the present.

**MUSC 4235: OPERA**

The history of opera from its origins to the present.

**MUSC 4237: MUSICAL INSTRUMENTS**

History and development of musical instruments studied through primitive prototypes, historical description, iconography, and instrumental collections.

**MUSC 4531: MUSIC IN HISTORICAL PERSPECTIVE**

Theoretical concepts in the history of Western music, including contemporary trends.

**MUSC 4535: MUSIC NOTATION**

An historical survey dealing with problems of notation and their solutions from medieval to present-day music.

**MUSC 4537: ANALYSIS**

Training in analytical skills with specific application to the interpretation of music.

**MUSC 4631: MUSICAL COMPOSITION**

Music history studied through recurring musical devices. Aural perception is stressed; composing is optional.

**MUSC 4931: SELECTED TOPICS IN MUSIC**

*(Identified by specific title each time course is offered.)*

**MUSC 5931: RESEARCH TOPICS IN MUSIC**

*(Identified by specific title each time course is offered.)*

**MUSC 59v9: PROBLEMS IN MUSIC**

*(Variable credit, 1-6 semester hours.)*

## NUTRITION SCIENCE

**NUTR 39v9: PROJECTS IN NUTRITION**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and project director.* Individual projects and laboratory investigations in nutritional science.

**NUTR 4131: FOOD COMPOSITION AND ANALYSIS**

*Prerequisite: Organic Chemistry.* Composition and chemical and physical properties of foods and food components; analytical methods; effects of processing. (Laboratory required.)

**NUTR 4111: LABORATORY FOR FOOD COMPOSITION AND ANALYSIS**

*Pre- or corequisite: NUTR 4131.* Four laboratory hours each week.

**NUTR 4132: FOOD PROCESSING**

*Pre- or corequisite: NUTR 4131.* Liquid, concentrated, frozen, fermented, and lipid foods; processing, storage, and handling; properties and nutritional characteristics. (Laboratory required)

**NUTR 4112: LABORATORY FOR FOOD PROCESSING**

*Pre- or corequisite: NUTR 4132.* Four laboratory hours each week.

**NUTR 4133: FOOD CONTAMINANTS AND SANITATION**

*Pre- or corequisite: NUTR 4131.* Chemical and biological contaminants; protection and sanitation procedures. (Laboratory required)

**NUTR 4113: LABORATORY FOR FOOD CONTAMINANTS AND SANITATION**

*Pre- or corequisite: NUTR 4133.* Three laboratory hours each week.

**NUTR 4331: NUTRITION, GROWTH, AND DEVELOPMENT**

Essential contributions of specialized dietary components to proper growth and development of human physiological systems.

**NUTR 4332: HUMAN NUTRITION AND FOODS**

Nutritional-energy relationships; caloric intake and distribution, metabolic regulation, appetite and satiety.

**NUTR 4721: SEMINAR IN HUMAN NUTRITION**

Study and solutions of a range of problems in clinical nutrition.

**NUTR 4931: SELECTED TOPICS IN NUTRITION**

*(Identified by specific title each time course is offered.)*

**NUTR 5131: NUTRITIONAL PATHOLOGY**

*Prerequisites: BIOL 3632 and CHEM 4331.* Nutritional pathology arising from dietary factors; relationship between the aging process and diet.

**NUTR 5931: RESEARCH TOPICS IN NUTRITION**

*(Identified by specific title each time course is offered.)*

**NUTR 59v9: PROBLEMS IN NUTRITION**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**NUTR 6131: NUTRITION AND METABOLISM**

*Prerequisite: BIOL 5131.* Metabolism of essential nutrients at the cellular and systems levels; metabolic disorders and dietary changes. (Laboratory required)

**NUTR 6111: LABORATORY FOR NUTRITION AND METABOLISM**

*Pre- or corequisite: NUTR 6131.* Four hours of clinical study each week.

**NUTR 6721: SEMINAR IN NUTRITION**

Theoretical approaches to the solution of current problems in clinical nutrition.

**NUTR 6939: MASTER.S THESIS RESEARCH****OCEANOGRAPHIC TECHNOLOGY****OCIN 3131: ANALYSIS OF GENERAL OCEANOGRAPHIC INSTRUMENTS**

*Prerequisites: CTEC 3132 and PROC 3132.* Analysis of oceanographic measuring instruments; salinity, temperature, depth, gravity, conductivity, magnetism, sound velocity, and wave and current action.

**OCIN 3111: LABORATORY FOR OCEANOGRAPHIC INSTRUMENTS**

*Pre- or corequisite: OCIN 3131.* Three laboratory hours each week.

**OCIN 3231: SHIPBOARD RADIO COMMUNICATIONS EQUIPMENT**

*Prerequisites: CTEC 3331 and PROC 3132.* Compulsory radio telegraph transmitters, receivers, and antennas; radio telephones, auto-alarms, and operating frequencies. (Laboratory instruction)

**OCIN 39v9: PROJECTS IN OCEANOGRAPHIC INSTRUMENTATION**

*(Variable credit, 1-6 semester hours.)*

*Prerequisite: approval of advisor and project director.* Individual projects and laboratory investigations in oceanographic instrumentation.

**OCIN 4131: POLLUTION MONITORING AND CONTROL INSTRUMENTATION**

*Prerequisites: OCIN 3131, PROC 3132, or equivalent.* Hardware and software techniques used for modern water, air, and noise pollution instrumentation systems. (Laboratory instruction)

**OCIN 4132: EXPERIMENTAL MARINE INSTRUMENTATION**

*Prerequisites: OCIN 3131 and BIOL 4132.* Experimental approach to marine instrumentation; physical effects of oceans and estuaries on their biochemical characteristics.

**OCIN 4231: SHIPBOARD NAVIGATION INSTRUMENTATION**

*Prerequisites: CTEC 3331 and PROC 3132.* Gyrocompass, RDF, Loran, Omega, and Decca instrumentation systems. (Laboratory instruction)

**OCIN 4232: SHIP POSITION CONTROL SYSTEMS**

*Prerequisites: OCIN 4231, PROC 3331, and compiler language proficiency.* Shipboard control systems; automatic station keeping, stability, position determination, computer control, and propulsion.

**OCIN 4233: RADAR SYSTEMS**

*Prerequisites: OCIN 4231 and 6 hours of calculus.* Analysis of radar instrumentation; hardware and software techniques applied to meteorology, astrophysics, and navigation. (Laboratory Instruction.)

**OCIN 4234: SONAR SYSTEMS**

*Prerequisites: OCIN 4231 and MATH 3333.* Analysis of sonar instrumentation; hardware and software techniques applied to precision profiling, search and salvage operations, and navigation. (Laboratory Instruction.)

**OCIN 4331: ELECTRO-OPTICS IN OCEANOGRAPHY**

*Prerequisites: CTEC 3331 and PROC 3132.* Photographic techniques; underwater television systems, underwater lighting, applications of infrared radiation measurements, and holography.

**OCIN 4431: SEISMIC EXPLORATION SYSTEMS**

*Prerequisites: CTEC 3331 and PROC 3132.* Instrumentation techniques for refraction and reflection; gravity, magnetic, electrical and spectral prospecting; government regulations and economic considerations.

**OCIN 4432: ADVANCED GEOPHYSICAL INSTRUMENTATION**

*Prerequisite: OCIN 4431.* Hardware techniques used in shipboard seismic instrumentation and electrical prospecting systems. (Laboratory instruction)

**OCIN 4433: WELL-LOGGING INSTRUMENTATION**

*Prerequisites: CTEC 3331 and PROC 3132.* Hardware and software techniques of electric and radioactive well-logging instrumentation. (Laboratory instruction)

**OCIN 4434: UNATTENDED OFFSHORE PLATFORM INSTRUMENTATION**

*Prerequisites: CTEC 3531, PROC 3132, and credit for or coenrollment in PROC 4234.*  
Analysis of remote terminal units used for offshore oil and gas production; status, alarms, accumulators, and controls.

**OCIN 4931: SELECTED TOPICS IN OCEANOGRAPHIC INSTRUMENTATION**

*(Identified by specific title each time course is offered.)*

**OCIN 4939: UNDERGRADUATE HONORS PROJECT**

*Prerequisite: 36 hours of upper-level credit and approval of program director.*

**OCIN 5131: POSITION INDICATION SYSTEMS**

*Prerequisite: OCIN 3131. Prerequisite or Corequisite: CTEC 5331 and OCIN 5231.*  
Acoustic, geosatellite, and marker-locator positioning systems; applications for drilling vessels, pipeline systems, wellhead location, and submersible tracking.

**OCIN 5231: UNDERWATER ACOUSTICAL INSTRUMENTATION**

*Prerequisites: CSCI 3111, CTEC 3531, PROC 3132, and MATH 3333.* Acoustic properties of sea water; emphasis on instrumentation for sound transmission and reception; FFT processing. (Laboratory instruction)

**OCIN 5232: INTEGRATED METEOROLOGICAL INSTRUMENTATION**

*Prerequisites: 6 hours in OCIN courses, CSCI 3111 and CTEC 3531.* Unattended offshore instruments, shipboard systems, radar tracking, satellite data, and airborne data acquisition systems.

**OCIN 5331: MARINE MODELING AND STOCHASTIC PROCESSES**

*Prerequisites: GEOL 3032, 3 hours of statistics, and compiler language proficiency.*  
Computer modeling applied to stochastic marine processes: sea surfaces, ice flows, and corrosion of marine structures. (Laboratory instruction)

**OCIN 5431: SEISMIC SIGNAL PROCESSING**

*Prerequisites: MATH 3333, CTEC 3531, and compiler language proficiency.*  
*Prerequisite or Corequisite: OCIN 4431.* Seismic signal processing, wave propagation, noise, optimum filtering, and interpretation.

**OCIN 5432: COMPUTERIZED DRILLING OPTIMIZATION**

*Prerequisites: PROC 4232, PROC 3331, CTEC 4532, and compiler language proficiency.* Computer techniques for drilling optimization; data considerations of rigs, wells, bits, drilling, formation tops, and abrasiveness.

**OCIN 5931: RESEARCH TOPICS IN OCEANOGRAPHIC INSTRUMENTATION**

*(Identified by specific title each time course is offered.)*

**OCIN 59v9: PROBLEMS IN OCEANOGRAPHIC INSTRUMENTATION**

*(Variable credit, 1-6 semester hours.)*

*Prerequisite: approval of advisor and project director.*

**OCIN 6331: COMPUTER ANALYSIS OF MARINE STRUCTURES**

*Prerequisites: MATH 3333, OCIN 5331, and CSCI 4531 or equivalent.* Simulation of wave, current, dead buoyant, seismic loads; instrumentation for member forces, stresses, and interaction ratios.

**OCIN 6431: SUBSEA CONTROL AND TELEMETRY SYSTEMS**

*Prerequisites: OCIN 5231, CTEC 5331, and PROC 3331.* In-water systems for subsea control and telemetry; blowout prevention, wellhead control, subsurface, buoys, and subsea pipeline monitoring.

**OCIN 6939: MASTER'S THESIS RESEARCH**

## PHYSICS

### PHYS 3014: DEVELOPMENT OF THE PHYSICAL SCIENCES

Temporal relationships of major figures, theories, and discoveries with the emergence of modern concepts in the physical sciences.

### PHYS 3035: MEDICAL PHYSICS

*Prerequisite: College Physics.* Implications of physical phenomena for understanding the body and major organ systems.

### PHYS 3431; 3432: CONTEMPORARY PHYSICS

*Prerequisite: College Physics.* Waves, acoustics, particles, electromagnetics, quantum physics, energy, solid state physics, optics, and electro-optics.

### PHYS 39v9: PROJECTS IN PHYSICS

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and project director.*

### PHYS 4011; 4012: LABORATORY FOR PHYSICS FOR TEACHERS I AND II

*Corequisite: PHYS 4031; 4032.*

### PHYS 4031; 4032: PHYSICS FOR TEACHERS I AND II

*Corequisite: PHYS 4011; 4012.* Modern developments in physics; intended to provide prospective teachers with background necessary to teach physics from a contemporary standpoint.

### PHYS 4331: PRINCIPLES OF THERMODYNAMICS

*Prerequisites: College Physics and MATH 4131 or equivalents.* Fundamental laws of thermodynamics and their applications to single systems.

### PHYS 4335: SOLID STATE PHYSICS

*Prerequisite: PHYS 3432 or equivalent.* Crystal structure; thermal, electrical, and magnetic properties of insulators, metals, and semiconductors.

### PHYS 4931: SELECTED TOPICS IN PHYSICS

*(Identified by specific title each time course is offered)*

### PHYS 5133: ELECTROMAGNETICS

*Prerequisite: PHYS 3432 or equivalent.* Current electromagnetic theory and application to materials technology.

### PHYS 5331: SEMICONDUCTORS

*Prerequisite: PHYS 4335 or equivalent.* Theory and applications of semiconductors and semiconductor devices.

### PHYS 5931: RESEARCH TOPICS IN PHYSICS

*(Identified by specific title each time course is offered.)*

### PHYS 59v9: PROBLEMS IN PHYSICS

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

### PHYS 6939: MASTER'S THESIS RESEARCH

## PROCESS CONTROL TECHNOLOGY

### PROC 3114: PROTOTYPE FABRICATION

Layout and construction of prototypes in electrical, electronic, mechanical, optical, and pneumatic systems. (Laboratory instruction)

### PROC 3131: ELECTRONIC INSTRUMENTATION

Circuit testing and analysis, operation and applications of electronic instruments.

### PROC 3111: LABORATORY FOR ELECTRONIC INSTRUMENTATION

*Pre- or corequisite: PROC 3131.* Three laboratory hours each week.

### PROC 3132: LINEAR INTEGRATED CIRCUITS

*Prerequisites: MATH 3332 and fundamentals of electronics or equivalent. Corequisite: PROC 3112.* Operational amplifier configurations, complex timers, function generators, phase-locked loops, and instrumentation amplifiers.

### PROC 3112: LINEAR IC LABORATORY

*Corequisite: PROC 3132.* Three laboratory hours each week.

### PROC 3133: ELECTRONIC COMPONENTS AND DEVICES

Discrete and integrated electronic components and devices; emphasis on applications. (Laboratory instruction)

### PROC 3134: ENERGY TRANSDUCERS

*Prerequisites or Corequisites: PROC 3132 and CTEC 3132.* Sensors and energy conversion devices in electrical, electronic, hydraulic, mechanical, optical, pneumatic and thermal systems. (Laboratory instruction)

### PROC 3331: CONTROL SYSTEMS

*Prerequisite: PROC 3132. Prerequisite or Corequisite: MATH 3333.* Concepts and analysis of control systems; descriptive and evaluation techniques needed for implementation.

### PROC 3431: INDUSTRIAL APPLICATIONS OF ELECTROMECHANISMS

*Prerequisites: PROC 3132 and CTEC 3132.* Turbine meters, magnetic flow meters, stepping motors, and servomechanisms. (Laboratory instruction)

### PROC 3531: DATA CONVERSION DEVICES

*Prerequisites: PROC 3132 and CTEC 3132.* ADC's, DAC's, VCO's, S&H's, and MUX's. (Laboratory instruction)

### PROC 39v9: PROJECTS IN PROCESS MONITORING AND CONTROL

*(Variable credit, 1-6 semester hours.)*

*Prerequisite: approval of advisor and project director.*

### PROC 4031: POWER DISTRIBUTION AND LIGHTING

*Prerequisite: PROC 3132.* Light sources, luminaries, and lighting design; national electrical codes for wiring and power distribution.

### PROC 4131: INDUSTRIAL APPLICATIONS OF MAGNETICS

*Prerequisites: PROC 3132, PROC 3134, and CTEC 3131.* Linear and non-linear applications of magnetism, in amplifiers, recorders and memory systems. (Laboratory instruction)

### PROC 4231: CHEMICAL PROCESSING SYSTEMS

Water treatment, catalytic cracking, alkylation, polymerization, distillation, and crystallization; fundamentals of chemical processes.

**PROC 4232: ANALYSIS OF DRILLING SYSTEMS**

*Prerequisites: PROC 4231, PROC 3132, and CTEC 3132.* On- and offshore site problems; drilling equipment, controls, and operations; government regulations and drilling economics.

**PROC 4233: ANALYSIS OF PIPELINE SYSTEMS**

*Prerequisites: PROC 4231, PROC 3132, and CTEC 3132.* Construction, maintenance, and operations of pipeline systems; government regulations and economic considerations.

**PROC 4234: ANALYSIS OF OIL AND GAS PRODUCTION SYSTEMS**

*Prerequisites: PROC 4231, PROC 3132, and CTEC 3132.* Wellhead, lift, monitoring and control, separation, storage, and waste problems; government regulations and economic considerations.

**PROC 4235: ANALYSIS OF REFINING AND GAS PLANT SYSTEMS**

*Prerequisites: PROC 4231, PROC 3132, and CTEC 3132.* Furnaces, heat exchangers, cooling towers; mixing, blending, and drying; government regulations and economic considerations.

**PROC 4331: SYNTHESIS OF MONITORING AND CONTROL SYSTEMS**

*Prerequisite: PROC 3331; Corequisite: PROC 4311; Prerequisite or Corequisite: CTEC 3531.* Modern process system characteristics; frequency response of first and second order components, open and closed loop response, and stability analysis.

**PROC 4311: SYNTHESIS LABORATORY**

*Corequisite: PROC 4331;* Three laboratory hours each week.

**PROC 4332: INDUSTRIAL QUALITY CONTROL SYSTEMS**

*Prerequisite: PROC 3331.* Process capability, control charting, and sampling inspection; applications of statistics and elementary decision theory.

**PROC 4431: ELECTRICAL POWER SYSTEMS**

*Prerequisite: PROC 3331.* Electrical power systems and industrial applications; application of circuit theory to power transmission and distribution.

**PROC 4432: ELECTROMECHANICAL SYSTEMS AND ENERGY CONVERSION**

*Prerequisite or Corequisite: PROC 4431.* Electromechanical energy conversion; rotating AC and DC machines, and motor/generator controls.

**PROC 4433: FAULT ANALYSIS OF ELECTRICAL POWER SYSTEMS**

*Prerequisite or Corequisite: MATH 4134 and PROC 4431.* Theory of symmetrical components applied to fault analysis of electrical power systems; transient stability and load flow controls.

**PROC 4434: ANALYSIS OF ELECTROMECHANICAL SYSTEMS**

*Prerequisites: PROC 3431, PROC 3331, and compiler language proficiency.* Multiple reference frame balancing, operating point stability, and variable frequency drive systems; use of computer simulation in analysis of systems employing synchronous and induction machines.

**PROC 4435: FLUIDICS AND FLUID POWER SYSTEMS**

*Prerequisite: PROC 3331.* Pumps, reservoirs, relays, gates, valves, and industrial hydraulic control systems.

**PROC 4436: ANALYSIS OF NUMERICAL CONTROL MACHINES SYSTEMS**

*Prerequisites: CSCI 3111 and CTEC 3531. Prerequisite or Corequisite: PROC 4434 and PROC 4435.* Analysis of NC systems; sequence of operations, machine considerations, positioning systems, console controls, tape processing, and programming.

**PROC 4931: SELECTED TOPICS IN PROCESS MONITORING AND CONTROL**

*(Identified by specific title each time course is offered.)*

**PROC 4939: UNDERGRADUATE HONORS PROJECT**

*Prerequisites: 36 hours of upper-level credit and approval of program director.*

**PROC 5233: MEASUREMENT OF OIL AND GAS**

*Prerequisites: PROC 3132 and CTEC 3531 or equivalent.* Operation, installation, calibration, and maintenance of oil and gas measurement systems; legal and economic considerations. (Laboratory instruction)

**PROC 5234: SYNTHESIS OF NUMERICAL AND COMPUTER CONTROL MACHINE SYSTEMS**

*Prerequisite: PROC 4436.* Optimal and adaptive NC and computer control machines systems for industry; current techniques in both hardware and software. (Laboratory instruction)

**PROC 5332: STOCHASTIC PROCESS CONTROL SYSTEMS**

*Prerequisite: PROC 4332 or equivalent.* Stochastic process applications to systems with low signal to noise ratios; convergence, stability and problems of optimal control.

**PROC 5432: DIRECT ENERGY CONVERSION SYSTEMS**

*Prerequisite: PROC 4432.* Thermoelectric, magnetohydrodynamic, solar, and nuclear power generation plants.

**PROC 5433: ELECTRICAL ENERGY TRANSMISSION LINES**

*Prerequisite: PROC 4431 or equivalent.* Transmission lines under steady state and transient conditions for AC, DC, HV, and underground transmission.

**PROC 5531: OPTIMUM FEEDBACK CONTROL SYSTEMS**

*Prerequisites: PROC 4331 and MATH 4134.* Application of feedback principles to control carrier, and multivariable systems; compensation, phase plane techniques, and describing functions.

**PROC 5931: RESEARCH TOPICS IN PROCESS MONITORING AND CONTROL**

*(Identified by specific title each time course is offered.)*

**PROC 59v9: PROBLEMS IN PROCESS MONITORING AND CONTROL**

*(Variable credit, 1-6 semester hours.)*

*Prerequisite: approval of advisor and project director.*

**PROC 6531: MODELING FOR ELECTRICAL POWER SYSTEMS**

*Prerequisites: PROC 4431, PROC 4331, PROC 5332, MATH 4132, and compiler language proficiency.* Computer modeling for analysis of electrical power systems; planning, specification, and operation of power system components.

**PROC 6532: MODELING FOR INDUSTRIAL PROCESSING SYSTEMS**

*Prerequisites: PROC 4231, PROC 4331, PROC 5332, MATH 4132, and compiler language proficiency.* Analog, digital, and hybrid computer modeling of industrial processing systems.

**PROC 6533: SYNTHESIS OF COMPUTER CONTROL SYSTEMS**

*Prerequisite or Corequisite: PROC 6531 or PROC 6532.* Comparative analysis of synthesis techniques; elements of an optimum computer control system synthesis. (Laboratory instruction)

**PROC 6939: MASTER'S THESIS RESEARCH****PSYCHOLOGY****PSYC 3131: CONTEMPORARY PSYCHOLOGY**

Basic theories and applications of the most important schools of modern psychology.

**PSYC 3331: THEORIES OF PERSONALITY**

Selected personality theories concerning such problems as normal-abnormal behavior, personality and society, and psychotherapeutic systems.

**PSYC 3332: INTERPERSONAL BEHAVIOR**

*Prerequisite: permission of instructor.* Group behavior based on analysis of personal experience and participation in group situations; the encounter process.

**PSYC 3333: CONTEMPORARY ISSUES IN HUMAN SEXUALITY**

Biological, psychological, and cultural viewpoints on sexual behavior.

**PSYC 3334: DRUGS AND BEHAVIOR**

Mechanisms and effects of alcohol, opiates, sedatives, tranquilizers, stimulants, psychedelics, and other psychotropic drugs; problems of abuse and attempts at control and education.

**PSYC 3531: THE SEARCH FOR MEANING AND IDENTITY**

The basic questions of human existence as considered by contemporary schools of psychology; contributions of Freud, Fromm, Erikson, Skinner, Laing, and Jung.

**PSYC 37v9: UNDERGRADUATE PRACTICUM**

*(Variable credit, 1-6 semester hours)*

*Prerequisites: 12 hours of appropriate upper-level work and approval of instructor.* Written report required.

**PSYC 39v9: PROJECTS IN PSYCHOLOGY**

*(Variable credit, 1-6 semester hours)*

*Prerequisites: approval of advisor and project director.* Individual projects and planned readings in psychological inquiry.

**PSYC 4031: HISTORY AND SYSTEMS**

Evolution of theory and methods in psychology from early philosophical roots to present status.

**PSYC 4131: SOCIAL PSYCHOLOGY: THEORY AND APPLICATION**

Interpersonal interaction and attitude formation theory with applications to such current social problems as prejudice, violence, alienation, deviance, and drugs.

**PSYC 4132: MOTIVATION**

Individual theorists and schools of theory that attempt to explain the motives of behavior; instinctive, behavioristic, psychoanalytic, and cognitive approaches.

**PSYC 4133: TESTS AND MEASUREMENTS**

Informal and standardized tests of achievement, intelligence, adjustment, and aptitude.

**PSYC 4134: CHILD PSYCHOLOGY**

Cognitive, social, and emotional development of children; psychoanalytic, behavioristic, and Piagetian approaches.

**PSYC 4135: ADOLESCENT PSYCHOLOGY**

Problems of role and identity in relation to adolescents' needs for acceptance, autonomy, and intimacy; with specific attention to such topics as sexual maturation, love and friendship, drug abuse, the "counter culture."

**PSYC 4136: BRAIN AND BEHAVIOR**

The biological basis of how one thinks, feels, and acts.

**PSYC 4137: PERCEPTION**

Physiological and psychological mechanisms for receiving and interpreting environmental stimulation.

**PSYC 4138: PRINCIPLES OF LEARNING**

Principles of acquisition and retention; verbal learning and its applications.

**PSYC 4331: COMMUNITY PSYCHOLOGY**

Relationships between mental health and institutional and social stress; community psychology models and social intervention.

**PSYC 4332: INDUSTRIAL PSYCHOLOGY**

Current research, problems, and practices in personnel selection and training, consumer psychology, and organizational behavior.

**PSYC 4334: MASCULINE—FEMININE IDENTITIES**

The development of sex differences and sex roles; modern viewpoints toward gender-appropriate behavior.

**PSYC 4335: PSYCHOLOGY OF HUMAN DIFFERENCES**

An analysis of individual and group differences in personality, intelligence, achievement, and many other psychological dimensions relevant to contemporary society.

**PSYC 4530: ECOLOGICAL PSYCHOLOGY**

Examination of the influence of non-psychological factors on psychological behavior and of the need for ecological or external validity of psychological research.

**PSYC 4531: ABNORMAL PSYCHOLOGY**

Neurotic and psychotic personality patterns; etiology, symptoms, diagnosis, and treatments.

**PSYC 4532: CRIMINAL PSYCHOLOGY**

Anti-social behavior and its psychological roots and trigger mechanisms; punitive and correctional methods and institutions viewed from a psychological perspective.

**PSYC 4533: MAN AND AGGRESSION**

Inquiry into contemporary theories of the aggressive nature of man, from both behavioral and environmental viewpoints.

**PSYC 4534: COGNITIVE BEHAVIOR MODIFICATION**

An extension of behavioral approaches to events; emphasis on self-statements and images as determinants of behavior.

**PSYC 4535: THE PSYCHOLOGY OF PLAY**

Varieties of play considered as involving particular social and psychological structures with specific outcomes.

**PSYC 4536: SELF-MANAGEMENT**

Students will use principles of operant learning procedures to manage their own behavior. Theory and practical application will be covered. No prerequisites.

**PSYC 4537: ANIMAL BEHAVIOR**

Aggressive, territorial, sexual, and maternal behaviors of various species and their possible relevance to human behavior.

**PSYC 4661: RESEARCH DESIGN AND STATISTICAL MEASUREMENT**

Design, analysis, and application of social science research techniques and methods of measurement.

**PSYC 4731: SOCIAL SCIENCES RESEARCH TECHNIQUES**

Design, analysis, and application of social science research techniques (previous or concurrent enrollment in a statistics course recommended).

**PSYC 4931: SELECTED TOPICS IN PSYCHOLOGY**

*(Identified by specific title each time course is offered.)*

**PSYC 5031: HUMAN GROWTH AND DEVELOPMENT**

Growth and developmental patterns as they influence educational processes.

**PSYC 5032: ADULTHOOD AND AGING**

Developmental patterns of the adult years; problems of aging in modern society.

**PSYC 5033: LEARNING CHARACTERISTICS OF YOUNG CHILDREN**

Relationships of physical and psychological development to attention span, motivation, and functioning of young children.

**PSYC 5034: LEARNING THEORIES APPLIED TO EDUCATION**

Comparative approach to learning theories and their direct and indirect classroom applications; behavioral and social components of learning processes.

**PSYC 5035: DESIGN AND EVALUATION OF BEHAVIORAL RESEARCH**

Principles of sound investigation and reasoning in behavioral sciences. Intended for consumers as well as producers of research. This course (or equivalent or demonstrated competence) required for M.A. in Behavioral Sciences.

**PSYC 5065: RESEARCH DESIGN AND STATISTICAL MEASUREMENT**

Design, analysis, and application of social science research techniques and methods of measurement.

**PSYC 5131: EXCEPTIONAL CHILDREN**

Survey of children with mental and physical problems, gifted children, and culturally deprived children.

**PSYC 5132: EDUCATIONAL PSYCHOLOGY**

Critical appraisal of the implications for education of modern psychological findings.

**PSYC 5331: PSYCHOLOGY OF LEARNING**

Theoretical models for learning, acquisition, and retention.

**PSYC 5332: MAJOR FIGURES IN MODERN PSYCHOLOGY**

*(May be repeated for credit)*

Concentrated study of the work of a major figure in modern psychology, such as Freud, Piaget, Fromm, or Maslow.

**PSYC 5333: PSYCHOTHERAPY**

Forms of modern psychotherapy: psychoanalytic, humanistic, existentialist, and behavior therapy.

**PSYC 5335: THE FUTURE OF BEHAVIOR**

Psychological perspectives on possibilities for human behavior in the future.

**PSYC 5431: BEHAVIOR MODIFICATION**

Basic principles of behavior modification and application to controlled settings (schools, institutions, etc.).

**PSYC 5432: BEHAVIORALLY ACTIVE DRUGS**

Legal and illegal drugs and their effect on mental state and behavior; how they work on the nervous system; why people use them; and attempts to control them.

**PSYC 5531: PSYCHOLOGY OF LANGUAGE**

Psychological aspects of language acquisition, development, and usage.

**PSYC 5532: ADVANCED SOCIAL PSYCHOLOGY**

Theory, methodology, and research findings pertinent to the individual in social context.

**PSYC 5631: ORGANIZATION, ASSESSMENT, AND FUNDING OF HUMAN SERVICES**

Practical aspects of managing human and social services, evaluating the services provided, and obtaining funding.

**PSYC 5731: SEMINAR IN PERSONALITY THEORY**

Theories of the origins, structure, and dynamics of personality; emphasis on the "normal" personality.

**PSYC 5741: COUNSELING PSYCHOLOGY SEMINAR**

*Prerequisite: Course in Abnormal and Personality or permission of the instructor.*  
Current theories of counseling and psychotherapy; counseling skills development and micro-counseling laboratory experience.

**PSYC 57v9: GRADUATE PRACTICUM**

*(Variable credit, 1-6 semester hours)*

*Prerequisites: 12 hours of graduate level course work, approval of Instructor. Written report required.*

**PSYC 5931: RESEARCH TOPICS IN PSYCHOLOGY**

*(Identified by specific title each time course is offered)*

**PSYC 59v9: PROBLEMS IN PSYCHOLOGY**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**PSYC 6031: INDIVIDUAL PSYCHOLOGICAL EVALUATION**

Theory and techniques for administration of individual psychological appraisal instruments; supervised practice in test administration and interpretation.

**PSYC 6032: ADVANCED PSYCHOLOGICAL EVALUATION**

Structured and unstructured tests of personality including supervised practice and interpretation.

**PSYC 6131: ORIGINS AND NATURE OF INTELLIGENCE**

Measurement of intellectual performance; hereditary and environmental influences on intelligence.

**PSYC 6132: COGNITIVE DEVELOPMENT**

Theories and findings related to the acquisition of pre-verbal and language-related cognitive capacities; evolutionary and cultural forces in shaping cognitive structures.

**PSYC 6133: EMOTION AND MOTIVATION**

Study of various contemporary theories and research concerning affective basis of behavior.

**PSYC 6134: PSYCHOLOGICAL BASIS OF BEHAVIOR**

Study of psychological basis of animal and human behavior. Stress on recent research.

**PSYC 6135: BEHAVIOR THERAPY**

*Prerequisite: Behavior Modification and a counseling techniques course or consent of the instructor.* Advanced course in the application of behavioral principles to human problems in less controlled settings (outpatient therapy, homes, communities, etc.)

**PSYC 6232: MENTAL MEASUREMENT**

*Prerequisites: EDUC 6132 or equivalent and six hours of psychology and an elementary statistics course.* Introduction to the general area of mental measurement. Theory and content of measuring devices in fields of intelligence, interests, personality, and special aptitudes.

**PSYC 6331: HUMAN MEMORY**

Selected phenomena of the memory process as potential bases for a theory of memory; long-term and short-term memory contrasts.

**PSYC 6332: COGNITIVE PROCESSES**

Modern approaches to information processing, memory, problem solving, and concept learning.

**PSYC 6531: PSYCHOPATHOLOGY**

*Prerequisite: Social Sciences Research Techniques.* Previous study in abnormal psychology recommended. Current issues and research in behavior pathology.

**PSYC 6532: THE INTERPERSONAL ENCOUNTER**

*Prerequisite: permission of instructor.* Participation in a series of learning events designed to investigate interpersonal behavior as an on-going life process.

**PSYC 6731: SEMINAR IN BEHAVIORAL SCIENCES**

*(Restricted to Master's Degree candidates in Behavioral Sciences.)*

Discussion and analysis of current research and theory in the behavioral sciences.

**PSYC 67v9: GRADUATE INTERNSHIP**

*(Variable credit, 1-9 semester hours)*

*Prerequisites: 12 hours of graduate level course work and approval of Internship Committee.* Minimum of two days a week in an approved internship setting. Written report required.

**PSYC 68v9: MASTER'S PROJECT RESEARCH***(Variable credit, 1-6 semester hours)***PSYC 69v9: MASTER'S THESIS RESEARCH***(Variable credit, 1-9 semester hours.)***READING****READ 39v9: PROJECTS IN READING***(Variable credit, 1-6 semester hours)**Prerequisite: approval of advisor and project director.* Individual projects and supervised inquiries in reading.**READ 4131: APPROACHES TO READING IN ELEMENTARY SCHOOLS**

Multiple approaches to teaching reading at the elementary level; readiness factors, phonics, vocabulary development, materials and methods for instruction.

**READ 4132: TEACHING READING IN SECONDARY SCHOOLS**

Methods of teaching intermediate reading skills; readability levels and expectancies, and structure of reading programs.

**READ 4133: DEVELOPMENTAL AND ADVANCED READING METHODOLOGY**

Refining reading skills for regular and advanced students, with emphasis on maturity in reading; enrichment experiences, selected great books, critical evaluation, and teaching of specialized reading skills.

**READ 4331: LINGUISTICS APPLIED TO ORAL READING**

Modern linguistic approaches to the reading process; intonation, stress, pitch, phonics, word functions, patterning of sentences, and the physiology of speaking.

**READ 4332: DIAGNOSTIC AND PRESCRIPTIVE READING**

Diagnostic evaluation of educational and non-educational problems of readers; remedial approaches to readiness, vocabulary, and comprehension.

**READ 4531: TEACHING READING SKILLS FOR CONTENT AREAS**

Developmental reading skills for content areas; consideration of comprehension, verbal reasoning, technical vocabulary, and readability levels.

**READ 4532: SELECTING LITERATURE AND MATERIALS FOR ADOLESCENTS**

Selection, use, and organization of literature for the secondary school; reading materials, resources, and bibliographic sources.

**READ 4533: SELECTING LITERATURE AND MATERIALS FOR CHILDREN**

Selection of reading materials, resources, and equipment for children in elementary schools and kindergarten; motivational techniques for encouraging interest in reading.

**READ 4831;4832: PRACTICUM IN CLINICAL READING***Prerequisites: 12 hours of credit in Reading and PSYC 4133 or equivalent.* Practices of diagnosing reading difficulties, grouping techniques, and clinical evaluations; six hours each week in a reading laboratory setting using selected materials and reading aids.**READ 4931: TOPICS IN READING***(Identified by specific title each time course is offered.)***READ 5031: LINGUISTIC APPLICATIONS TO READING**

Linguistic elements as applied to teaching reading; attention to phonemics, morphemics, spelling, and syntax.

**READ 5131: READINESS MATERIALS FOR PRESCHOOL AND KINDERGARTEN**

Appropriate materials and motivational devices for developing reading readiness in young children.

**READ 5132: DEVELOPING READING PROGRAMS**

Issues involved in developing comprehensive reading programs from childhood through adulthood; problems encountered in structuring programs.

**READ 5133: FOUNDATIONS OF READING**

Basic skills of reading; study of techniques for teaching reading skills to slow as well as to accelerated learners.

**READ 5931: RESEARCH TOPICS IN READING**

*(Identified by specific title each time course is offered.)*

**READ 5999: PROBLEMS IN READING**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**READ 6131: DEVELOPMENTAL READING PROGRAMS**

Structuring programs for developmental reading, emphasizing alternative approaches to motivation, vocabulary building, and reading for enrichment; problems of advanced placement.

**READ 6731: PRACTICES IN DIAGNOSTIC AND CORRECTIVE READING**

*Prerequisite: 12 semester hours in Reading.* Advanced techniques in assessment, diagnosis, and prescriptive intervention in problem reading situations; individual work with students.

**READ 6732: DIAGNOSING READING ACHIEVEMENT**

*Prerequisite: 12 semester hours in reading.* Diagnostic evaluation of reading achievement; simulated and laboratory practice in administration, interpretation, and evaluation of reading related tests, scales, and surveys.

## RECREATION

**RECR 3099: PROJECTS IN RECREATION**

*(Variable credit, 1-6 semester hours).*

*Prerequisite: Approval of advisor and project director.* Individual projects and planned readings in recreational arts.

**RECR 4531: ORGANIZATION AND MANAGEMENT OF RECREATION FACILITIES**

Theoretical and practical aspects of recreation facilities; emphasis on community services in leisure and recreation.

## RESOURCE UTILIZATION

**RSCE 3131: ENERGY SOURCES**

The availability of various sources of energy; impacts of technology and resource availability and utilization.

**RSCE 3132: RESOURCE CONVERSION**

Fundamental approaches to the conversion of land, water, and atmosphere to the uses of man; innovations in consumption and conservation of resources.

**RSCE 3331: ECONOMICS OF NATURAL RESOURCES**

Government and private programs to enhance the efficient usage of natural resources; cost benefit analysis of alternative solutions.

**RSCE 3531: QUANTITATIVE METHODS FOR RESOURCE STUDIES**

Applying mathematical and statistical tools to the quantification of human resource and environmental data; gathering, analyzing, and presenting data.

**RSCE 39v9: PROJECTS IN RESOURCE UTILIZATION**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and project director.* Individual projects and planned readings related to natural resources.

**RSCE 4031: CONSERVATION EDUCATION**

The teaching of conservation; techniques for developing effective school conservation programs.

**RSCE 4032: ENERGY PRODUCTION AND CONTROL**

Currently utilized sources of energy; the role of technology in the production process, and current practices in the regulation of output.

**RSCE 4131: DYNAMICS OF RESOURCE UTILIZATION IN MODERN SOCIETY**

Analysis of resource distribution and development as related to national and international power structures.

**RSCE 4331: WATER RESOURCES**

Analysis of potential resource development as related to surface water, aquifers, oceans, and conversion methodology.

**RSCE 4731: SEMINAR ON CULTURE—RESOURCE INTERACTIONS**

The interactions of cultures and resources; consumption of energy in selected geographic regions of the world.

**RSCE 4931: SELECTED TOPICS IN RESOURCE UTILIZATION**

*(Identified by specific title each time course is offered.)*

**RSCE 5131: ENVIRONMENT MODIFICATION**

Analysis of the impact of technology or the absence of technological development on living standards, economic productivity, and the quality of life.

**RSCE 5331: POLITICS OF NATURAL RESOURCES**

Resource distribution and development as related to national and international power structure.

**RSCE 5531: THE FUTURE OF ENERGY RESOURCES**

Forecasts for energy demand and energy supply in the decades ahead; energy alternatives and technological prospects.

**RUSSIAN****RUSS 3031;3032: FOUNDATIONS IN RUSSIAN**

Basic structural principles of Russian grammar; oral practice, reading, and translation.

**RUSS 3331;3332: INTERMEDIATE RUSSIAN**

*Prerequisite: RUSS 3032 or equivalent.* Intensive review and further study of grammar; development of aural comprehension and oral fluency, with reading and analysis of selected texts of literary merit and cultural interest.

**RUSS 39v9: READINGS IN RUSSIAN**

*(Variable credit, 1-6 semester hours).*

*Prerequisite: Approval of advisor and instructor.*

**RUSS 4331;4332: RUSSIAN LITERATURE AND CULTURE***(Conducted in Russian)**Prerequisite: RUSS 3331 or equivalent.* Reading and discussion of texts taken from classical and Soviet literature, history, and journals; practice in writing and conversation.**RUSS 4931: SELECTED TOPICS IN RUSSIAN***(Identified by specific title each time course is offered.)***SECONDARY EDUCATION****SCED 3161: SECONDARY CURRICULUM AND METHODOLOGY***Prerequisite: EDUC 30v1 or equivalent.* Curriculum patterns, development, implementation, and evaluation; experiences in teaching strategies, methods, techniques, evaluation, and classroom management. (Field experiences required)**SCED 3431: CURRICULUM FOR SECONDARY EDUCATION***Prerequisite: EDUC 30v1 or equivalent.* Curriculum patterns, development, implementation, and evaluation in the secondary school. (Field experiences required) (Credit may not be earned for both SCED 3161 and SCED 3431.)**SCED 3432: INSTRUCTIONAL METHODS FOR SECONDARY EDUCATION***Prerequisite: EDUC 30v1 or equivalent.* Teaching strategies, methods, techniques, evaluation, and classroom management in the secondary school. (Field experiences required) (Credit may not be earned for both SCED 3161 and SCED 3432.)**SCED 3561: SECONDARY STUDENT TEACHING***Prerequisite: approval of advisor.* Supervised field experiences, conducted primarily in a public school setting, with regular seminars conducted on the University campus.**SCED 39v9: PROJECTS IN SECONDARY EDUCATION***(Variable credit, 1-6 semester hours)**Prerequisite: approval of advisor and project director.***SCED 4931: SELECTED TOPICS IN SECONDARY EDUCATION***(Identified by specific title each time course is offered.)***SCED 5031: CHANGES IN SECONDARY SCHOOL PEDAGOGY**

Contrasts between traditional and current teaching methods at the secondary level; research results and implications for a range of instructional situations.

**SCED 57v9: PRACTICUM IN SECONDARY TEACHING***(Variable credit, 1-6 semester hours)**Prerequisite: approval of advisor.* Directed field experiences in a middle or high school setting.**SCED 5931: RESEARCH TOPICS IN SECONDARY EDUCATION***(Identified by specific title each time course is offered.)***SCED 59v9: PROBLEMS IN SECONDARY EDUCATION***(Variable credit, 1-6 semester hours)**Prerequisite: approval of advisor and problem director.***SOCIOLOGY****SOCI 3131: CONTEMPORARY SOCIOLOGY***Prerequisite: Introduction to Sociology or equivalent.* Theories and applications of the most important schools of modern sociology.

**SOCI 3132: CRIMINOLOGY**

Theories of causation, patterns, and social response.

**SOCI 3333: SOCIOLOGY OF EDUCATION**

Racial and socioeconomic factors in public elementary and secondary education; alternative educational structures.

**SOCI 3334: CULTURAL PLURALISM IN THE AMERICAN SOUTHWEST**

Anglo, Chicano and Black multicultural and multiethnic variations in modern America; emphasis on Texas.

**SOCI 3335: DEVIANCE**

Theories of the existence of deviance in society; management of spoiled identities.

**SOCI 3531: POLITICAL SOCIOLOGY**

Political and social structures as they relate to the distribution of power in American society; socioeconomic aspects of leadership, power, and political change.

**SOCI 3532: URBAN SOCIOLOGY**

The social structure of the American city and contemporary issues of urban politics; field experiences required.

**SOCI 3533: INDUSTRIAL SOCIOLOGY**

Problems of manpower, unemployment, and apprentice programs; special reference to the Houston metropolitan area.

**SOCI 3534: SOCIOLOGY OF MEDICINE**

Health delivery systems as social institutions; sociological and ethical ramifications of medical practices.

**SOCI 3535: HEALTH AND WELFARE SYSTEMS**

Sociological analysis of welfare philosophy and practice; emphasis on welfare systems in the United States.

**SOCI 37v9: UNDERGRADUATE PRACTICUM**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: 12 hours of upper-level credit and approval of instructor.* Work experience in an approved social service agency; written and oral reports required.

**SOCI 39v9: PROJECTS IN SOCIOLOGY**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and project director.* Individual projects and planned readings in sociological inquiry.

**SOCI 4031: UNDERSTANDING TECHNOLOGY**

Impacts of man's technological advances on contemporary social institutions; ways society molds and controls current forces for technological innovation.

**SOCI 4032: SCIENCE AND HUMAN VALUES**

How scientists perceive the interactions of their disciplines with society; effects of scientific advances on cultural values.

**SOCI 4033: SOCIOLOGICAL THEORY**

Social order in ancient and modern theory; fundamental requirements of viable social theories.

**SOCI 4034: THE AMERICAN DREAM OF SUCCESS**

The most constant element in the American dream; its development, its staying power, and its effect on American social and economic life.

**SOCI 4035: COMPLEX ORGANIZATIONS**

Growth of bureaucratic society; emphasis on internal structure and dynamics of modern organizations - voluntary, corporate, and governmental.

**SOCI 4036: SOCIOLOGY OF LEISURE**

The uses of leisure in contemporary American society.

**SOCI 4037: MORAL ISSUES IN THE FUTURE OF SCIENCE**

Futures research tools applied to predicting likely scientific and technological advances which will pose major values dilemmas for mankind.

**SOCI 4061: RESEARCH DESIGN AND STATISTICAL MEASUREMENT**

Design, analysis, and application of social science research techniques and methods of measurements.

**SOCI 4131: DEMOGRAPHY**

Fundamentals of population analysis; development, presentation, and interpretation of demographic data.

**SOCI 4132: SOCIAL CLASS IN AMERICA**

Various interpretations of America's system of social stratification.

**SOCI 4133: JUVENILE DELINQUENCY**

Individual and community aspects of juvenile delinquency; theories of cause and modes of control.

**SOCI 4135: AMERICAN POPULAR CULTURE**

Elements of contemporary American popular culture; general interpretation of their meaning and significance.

**SOCI 4136: INTRODUCTION TO FUTURES STUDIES**

Problems of forecasting; forecasts by leading futurists, both optimists and pessimists.

**SOCI 4331: CORRECTIONAL INSTITUTIONS**

Correctional institutions in the United States; analysis of their changing roles and functions.

**SOCI 4333: INTENTIONAL CULTURAL CHANGE**

Elements involved in deliberate efforts to change values, community life styles, and structural patterns.

**SOCI 4334: FUTURE OF EDUCATION IN A CHANGING SOCIETY**

Stability and change in public education; innovative educational programs; impact of technology, life style, and occupational change on education.

**SOCI 4531: THE BLACK EXPERIENCE**

Social structure of contemporary Black America; emphasis on black life in the Houston metropolitan area.

**SOCI 4532: THE CHICANO EXPERIENCE**

Chicano awareness and identity; relations with Anglo and Black Americans as reflected in the literature of the Chicano movement.

**SOCI 4534: THE WOMEN'S LIBERATION MOVEMENT**

Issues articulated by the Women's Liberation Movement; the struggle for women's rights, American attitudes towards women, new conceptions of feminine sexuality, and alternative male-female relationships.

**SOCI 4535: MINORITIES IN AMERICA**

Economic, political, and social status of minority subcultures; the changing nature of minority-majority relations.

**SOCI 4631: SOCIAL SCIENCES RESEARCH TECHNIQUES**

Design, analysis, and application of social science research techniques. Previous or concurrent enrollment in a statistics course is recommended.

**SOCI 4731: SEMINAR ON RELIGION AND SOCIETY**

Sociological examination of religious groups and their beliefs; reciprocal relationships between society and religious institutions.

**SOCI 4931: TOPICS IN SOCIOLOGY**

*(Identified by specific title each time course is offered)*

**SOCI 4932: FIELD WORK: MEXICAN—AMERICAN COMMUNITY LIFE**

*Prerequisites: at least one course in Mexican-American culture, a good knowledge of spoken Spanish, and consent of instructor.* Opportunities for direct experience of life in local Mexican-American communities; may include volunteer work in community centers and churches, tutorials for Mexican-American public school students, and actual residence in a Mexican-American home; monthly group meeting of participants.

**SOCI 5031: EDUCATIONAL SOCIOLOGY**

Social, political, and legal foundations of elementary and secondary education; equality of educational opportunity; proposed and operational structural changes.

**SOCI 5065: RESEARCH DESIGN AND STATISTICAL MEASUREMENT**

Design, analysis, and application of social science research techniques and methods of measurement.

**SOCI 5131: EDUCATION AND CULTURAL CHANGE**

Cultural change resulting from educational systems and processes; emphasis on integration and acculturation.

**SOCI 5231: DESIGN AND EVALUATION OF BEHAVIORAL RESEARCH**

Principles of sound investigation and reasoning in behavioral sciences. Intended for consumers as well as producers of research.

**SOCI 5331: CULTURAL DEVELOPMENT THROUGH EDUCATIONAL FORCES**

Analysis of the national system utilizing educational ideas and practices to achieve national cultural aims and objectives.

**SOCI 5332: SOCIOLOGY OF THE FUTURE**

The future in relation to basic social structures such as city, family, and church in the post-industrial society.

**SOCI 5333: MINORITY VALUE SYSTEMS**

Value assumptions and ethical commitments of selected American minority groups; the experiential "otherness" of such groups.

**SOCI 5334: RELIGION AND SOCIAL CHANGE**

Religious movements as agents of social change, preservation, or reaction.

**SOCI 5431: SOCIOLOGY OF LAW ENFORCEMENT**

Historical development and sociological studies of the role of the police.

**SOCI 5432: STUDY OF THE FUTURE**

Survey of forecasting methods as applied to the concept of "limits to growth."

**SOCI 5433: MAN'S FUTURE IN SPACE**

Prognosis for space exploration in near and long term future.

**SOCI 5531: CRITICS OF SOCIETY**

Modern radical thought in North America; the relationship between forms of intellectual dissent and theories or images of society.

**SOCI 5532: THEORY CONSTRUCTION**

Principles of theory construction; assumptions underlying various sociological paradigms.

**SOCI 5533: COMMUNICATIONS AND SOCIAL CHANGE**

The impact of new communications systems upon life in the present and future.

**SOCI 5731: SEMINAR IN MULTI-CULTURAL STUDIES**

Aspects of multi-cultural life in contemporary America; emphasis on Texas and the Southwest.

**SOCI 5732: SEMINAR ON CONTEMPORARY SOCIAL THEORY**

Concentrated study of one or more schools of contemporary social theory.

**SOCI 57v9: GRADUATE PRACTICUM**

*(Variable credit, 1-6 semester hours)*

*Prerequisites: master's degree candidacy and approval of instructor. Work experience in an approved social service agency; written and oral reports required.*

**SOCI 5931: RESEARCH TOPICS IN SOCIOLOGY**

*(Identified by specific title each time course is offered)*

**SOCI 59v9: PROBLEMS IN SOCIOLOGY**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**SOCI 6131: SOCIAL STRATIFICATION**

Wealth, power, and prestige in American society; ethnic, sexual, and socio-economic correlates of social status and mobility.

**SOCI 6132: SOCIOLOGY OF PUNISHMENT AND CORRECTION**

Punitive and rehabilitative responses to crime; theoretical applications and research results.

**SOCI 6133: CULTURAL FOUNDATIONS OF EDUCATION**

Acculturation factors that influence education; issues and currents attributable to multi-ethnic blends in public education.

**SOCI 6331: FORECASTING TECHNIQUES**

*Prerequisite: SOCI 4136 or equivalent.* Forecasting methods currently in use; applications and liabilities.

**SOCI 6332: FORECASTING BY SIMULATION AND MODELING**

How simulation and modeling have been and can be employed for social predictions.

**SOCI 6333: RADICAL FUTURES**

Revolutionary images of the future as projected by Marxist, Maoist, Soviet, black radical, feminist, and libertarian writers.

**SOCI 6334: TECHNOLOGY AND SOCIETY IN THE FUTURE**

Anticipated social effects of present and future technologies.

**SOCI 6335: TECHNOLOGY AND ETHICS IN THE FUTURE**

Future prospects of moral and ethical problems regarding mankind's use of technology.

**SOCI 6731: SEMINAR IN FUTURES STUDIES**

*Prerequisite: approval of program director.* Latest techniques, issues, and controversies related to futures studies.

**SOCI 67v9: GRADUATE INTERNSHIP**

*(Variable credit, 1-9 semester hours)*

*Prerequisites: Twelve hours of graduate level course work and approval of Internship Committee.* Minimum of two days a week in an approved internship setting. Written report required.

**SOCI 68v9: MASTER'S PROJECT RESEARCH****SOCI 6939: MASTER'S THESIS RESEARCH**

*(Variable credit, 1-9 semester hours).*

**SPANISH****SPAN 3331: ADVANCED GRAMMER AND COMPOSITION**

Structure of Spanish, with special attention to syntactical patterns in formal usage; idiomatic aspects of the spoken language and principal dialects.

**SPAN 3531: SPANISH FOR SPANISH SPEAKERS**

Complex syntactical structures and dialect variants; emphasis on characteristics of Spanish as spoken in the American Southwest.

**SPAN 3532: SPANISH CONVERSATION AND PHONETICS**

*Prerequisite: SPAN 3331 or 3531 or equivalent.* Development of oral fluency in Spanish; emphasis on descriptive phonetics.

**SPAN 39v9: READINGS IN SPANISH**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: Approval of advisor and instructor.*

**SPAN 4031: SPANISH CULTURE AND CIVILIZATION**

*(Conducted in Spanish)*

Interdisciplinary study of Spanish culture and civilization; major developments in Spanish from the Roman conquest to modern times.

**SPAN 4032: SPANISH-AMERICAN CULTURE AND CIVILIZATION**

Interdisciplinary examination of the development and characteristics of contemporary Spanish America.

**SPAN 4331: MODERN MEXICAN LITERATURE**

*(Conducted in Spanish)*

Selected readings in 20th century Mexican literature; emphasis on the literary expression of the formation of the Mexican National consciousness.

**SPAN 4332: MEXICAN-AMERICAN WRITING**

*(Conducted in Spanish)*

The Mexican-American and Chicano experience as reflected in contemporary America in writing.

**SPAN 4531: THE MYSTICAL TRADITION IN SPANISH CULTURE**

The centrality of mysticism to Spanish life and history; emphasis on the 16th century mystics, the Jesuits, and Spanish religious painting and sculpture.

**SPAN 4931: SELECTED TOPICS IN SPANISH**

*(Identified by specific title each time course is offered.)*

**SPAN 5332: UNAMUNO AND ORTEGA**

*(Conducted in Spanish)*

Emphasis of Unamuno's and Ortega's philosophy of man and their interpretation of man's contemporary condition

**SPAN 6939: MASTER'S THESIS RESEARCH****STATISTICS****STAT 3231; 3232: QUANTITATIVE METHODS FOR THE BUSINESS, SOCIAL, AND BIOLOGICAL SCIENCES**

*Prerequisite: College Algebra or equivalent.* Introduction to probability and statistics; sample statistics, probability distributions, confidence intervals, estimation, tests of significance, analysis of variance, chi-square, regression.

**STAT 4131: SURVEY AND SAMPLING THEORY**

*Prerequisite: 3 hours in statistics.* Sampling from finite populations, multistage sampling, stratification; non-sampling errors; applications to large scale sample surveys.

**STAT 4132: NONPARAMETRIC STATISTICS**

*Prerequisite: STAT 3232 or equivalent.* Application of nonparametric statistical tests to research data in behavioral and natural sciences, business, and public affairs.

**STAT 4431; 4432: PROBABILITY AND STATISTICS**

*Prerequisite: Calculus.* Combinatorial probability, probability distributions, use of discrete and continuous functions; introduction to estimation and testing of hypotheses.

**STAT 5031: DATA ANALYSIS TECHNIQUES**

*Prerequisite: College Algebra or equivalent.* Non-calculus treatment of descriptive statistics, probability distributions, tests of hypotheses, correlation and regression analysis, and introductory topics in the analysis of variance.

**STAT 5131: ADVANCED DATA ANALYSIS**

*Prerequisite: STAT 5031 or equivalent.* Additional topics in the analysis of variance and uses of statistical inference; alternative non-parametric tests, testing of assumptions, and applications of correlational techniques.

**STAT 5331: DESIGN OF EXPERIMENTS**

*Prerequisite: STAT 3232 or equivalent.* Classical analysis of covariance; uses of experimental designs and the analysis of variance table.

**STAT 5332: STATISTICAL METHODOLOGIES FOR BEHAVIORAL RESEARCH**

*Prerequisite: PSYC 4731 or equivalent.* Problems of statistical design and analysis associated with advanced research.

**STAT 5431; 5432: MATHEMATICAL STATISTICS**

*Prerequisite: STAT 4432 or equivalent.* Distributions of sample statistics, order statistics, limit theorems, likelihood procedures; stochastic processes.

## THEATRE

Please Note: All Writing Courses are listed under Communications (COMM).

### THEA 3131: CONTEMPORARY THEATRE

The nature of theatre arts and the function of the actor, director, designer, and playwright in the contemporary theatre. Analysis of plays on stage, television, and in film; also forms of musical drama. Staged readings and demonstrations of theatre technology.

### THEA 3133: THE DANCE AND SOCIETY

Approaching the dance as an art form. The dancer as both artist and individual; the role of dance and the dancer in our society.

### THEA 3135: HISTORY OF THE THEATRE

History of the stage from the Greeks through the 19th Century.

### THEA 3137: HISTORY OF DANCE

Theatrical dancing from its roots in primitive culture to the present and its relationships to social and political trends.

### THEA 3231: INTERPRETATION

Reading plays for enunciation, timing, and expression.

### THEA 3233: INTERMEDIATE ACTING

*Prerequisite: Permission of instructor.* Body movement, characterization, structuring scenes. One hour per week laboratory will be required as part of the course. (May be repeated for credit.)

### THEA 3235: FUNDAMENTALS OF DANCE

Techniques of movement and concepts of dance for the non-dancer. (May be repeated for credit.)

### THEA 3331: STAGECRAFT

Acting styles, directing, designing. One hour per week of laboratory will be required as part of the course.

### THEA 3333: INTERMEDIATE DIRECTING

Concepts of stage direction; analysis of scripts; presentation of brief scripts.

### THEA 3335: STYLE AND THEORY OF DANCE

A practical study in anatomical placements and movement techniques as applied to modern and contemporary ballet. (May be repeated for credit.)

### THEA 3431: THEATRE WORKSHOP

Practical and theoretical elements of theatre. (May be repeated for credit.)

### THEA 35v9: PERFORMANCE

*(Variable credit, 1-6 semester hours)*

Participation as performer or technician in a major university production. (May be repeated for credit.)

### THEA 39v9: PROJECTS IN THEATRE

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of instructor and program director.* Individual projects and planned readings in theatrical inquiry.

**THEA 4031: THEATRE FOR THE HIGH SCHOOL TEACHER**

Choosing, planning, funding, and staging the high school play.

**THEA 4131: RITUAL: ORIGINS OF THEATRE**

The role of ritual in daily life and its influence upon the origin and development of Western drama. The insights of anthropology, psychology, and linguistics into man's needs as a symbol-making being. Use of role-playing and improvisation.

**THEA 4233: ADVANCED ACTING**

*Prerequisite: THEA 3233, or permission of instructor.* Styles of acting, ensemble playing, large scenes, one-act plays. One hour per week laboratory required as part of the course. (May be required as part of the course.) (May be repeated for credit.)

**THEA 4333: ADVANCED DIRECTING**

Movement of actors; analysis, blocking, and presentation of selected materials.

**THEA 4335: DANCE COMPOSITION**

An exploration of the elements of dance and the craft of making dances. (May be repeated for credit.)

**THEA 4431: TECHNICAL THEATRE**

Building sets, lighting, properties, technical operation of stage during production. (May be repeated for credit.)

**THEA 4433: COSTUMING AND MAKE-UP**

History, design, techniques.

**THEA 45v9: PRODUCTION**

*(Variable credit, 1-6 semester hours)*

Mounting a production.

**THEA 4631: CHILDREN'S THEATRE**

Choosing and presenting plays for children.

**THEA 4931: SELECTED TOPICS IN THEATRE ARTS**

*(Identified by specific title each time course is offered.)*

**THEA 49v9: SENIOR PROJECT IN THEATRE ARTS****THEA 5931: RESEARCH TOPICS IN THEATRE ARTS****THEA 59v9: PROBLEMS IN THEATRE ARTS**

*(Variable credit, 1-6 semester hours.)*

## TRANSPORTATION

**TRAN 3131: FUNDAMENTALS OF TRANSPORTATION**

Design, operation, and control of systems for providing transportation services.

**TRAN 3132: TRANSPORTATION AND PUBLIC CONTROL**

Types, methods, and impact of public regulation on transportation systems; responsibilities of control agencies.

**TRAN 3331: TRANSPORTATION RATE STRUCTURES**

Factors and procedures involved in the pricing of transportation services; emphasis on public regulation of pricing of transportation services.

**TRAN 3531: APPLIED LOGISTICS MANAGEMENT**

Problems encountered by transportation firms; application of computers to solution of logistics problems.

**TRAN 3739: UNDERGRADUATE INTERNSHIP IN TRANSPORTATION**

*Prerequisites: 15 hours of upperlevel credit and approval of program director. Six hours of supervised work experience each week in an approved transportation organization*

**TRAN 39v9: PROJECTS IN TRANSPORTATION**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and project director. Individual projects and planned readings in transportation studies.*

**TRAN 4331: URBAN TRANSPORTATION**

Problems of moving people and commodities in the urban setting; transportation requirements of large population concentrations.

**TRAN 4332: LOGISTICS AND TRAFFIC MANAGEMENT**

Distribution systems, movement and handling of goods and people; inventory, warehousing, tariff determination, and plant location.

**TRAN 4731: TRANSPORTATION MANAGEMENT**

*Prerequisite: MGMT 3031. Transportation management problems in the United States and possible solutions.*

**TRAN 4931: SELECTED TOPICS IN TRANSPORTATION**

*(Identified by specific title each time course is offered)*

**TRAN 5031: ECONOMICS OF METROPOLITAN TRANSPORTATION**

*Prerequisite: ECON 5131 or equivalent. Principles of transportation with application to metropolitan areas; demand, cost, technology, and political dimensions.*

**TRAN 5131: TRANSPORTATION AND TECHNOLOGY**

The impact of technological change on transportation services; modification of business practices to accommodate transportation changes.

**TRAN 5132: COST ACCOUNTING FOR TRANSPORTATION**

Cost aspects of the transportation industry; personnel, facilities, budgeting, and control.

**TRAN 5133: ANALYSIS OF LOGISTICS PROBLEMS**

The evaluation of problems relating to distribution systems within an organization. Use of quantitative methods for the solution of logistics problems.

**TRAN 5331: TRANSPORTATION MANAGEMENT**

Management theory as applied to the design and control of production and distribution of transportation services.

**TRAN 5332: TRANSPORTATION ANALYSIS**

No credit if student has credit for TRAN 3131. The analysis of cost, demand, and pricing problems of transportation companies. Emphasis on management problems peculiar to the transportation firm: rates, service, and regulations.

**TRAN 5531: TRANSPORTATION FINANCE**

Revenue sources and expenditures of transportation systems; emphasis on economic changes as determinants of financial practices in transportation.

**TRAN 59v9: PROBLEMS IN TRANSPORTATION**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and instructor.*

**TRAN 6731: SEMINAR ON TRANSPORTATION POLICY**

Public transportation policy at the federal, state, and local levels; opportunity for individual concentration on a single transportation mode.

**TRAN 6733: SEMINAR ON MOTOR TRANSPORTATION**

The effects of economics and regulatory policies on contemporary motor transportation.

**TRAN 6734: SEMINAR ON COMMERCIAL AIR TRANSPORTATION**

The effects of economic and regulatory policies on contemporary air transportation.

**TRAN 6735: SEMINAR ON RAIL TRANSPORTATION**

The effects of economics and regulatory policies on contemporary rail transportation.

**TRAN 6736: SEMINAR ON WATER TRANSPORTATION**

The effects of economic regulatory policies on contemporary water transportation.

**TRAN 67v9: GRADUATE INTERNSHIP IN TRANSPORTATION MANAGEMENT**

*(Variable credit, 1-6 semester hours.)*

*Prerequisites: Master's degree candidacy and approval of advisor and dean.* Supervised internship with either a transportation company or a corporation engaged in the shipment of goods.

**TRAN 6931: SELECTED TOPICS IN TRANSPORTATION**

*Identified by specific title each time course is offered.)*

**TRAN 6939: MASTER'S THESIS RESEARCH****URBAN STUDIES****URBN 5131: THEORY AND PRACTICE OF URBAN PLANNING**

Theoretical approach to urban planning for solution of metropolitan problems; emphasis on the multi-disciplinary nature of studying the urban setting.

**URBN 5132: INVESTIGATIVE METHODS FOR METROPOLITAN STUDIES**

Quantitative tools used to gather, analyze, and present data dealing with human and natural resources in a metropolitan setting.

**URBN 5231: DESIGN OF URBAN ENVIRONMENTS**

A study of contemporary urban form with emphasis on the visual-spatial qualities; residential and commercial development and urban structure.

**URBN 5232: SITE PLANNING AND DESIGN**

Principles and techniques of site utilization and design; basic considerations of land planning and development practice.

**URBN 5332: URBAN AND SUBURBAN TRENDS**

Social and economic problems of contemporary metropolitan areas; trends of central city versus suburban modes of living and employment.

**URBN 5431: LOCATION AND SPACE ECONOMY**

Economic analysis and regional growth, regional structure, and current regional problems; central place theory and location patterns of cities, the demand for allocation of space within urban areas; agglomeration effects and economies of scale.

**URBN 5432: PLANNING LAW**

Governmental organization and enabling legislation for planning; eminent domain, dedication, official map, and other property-acquisition techniques; land use regulations, including nuisance ordinances, deed restrictions, building regulations, subdivision regulations, and zoning; urban renewal law.

**URBN 5531: HOUSTON METROPOLITAN REGION**

The Houston region as an urban center; emphasis on the application of background information to Houston area planning.

**URBN 59v9: PROBLEMS IN URBAN STUDIES**

*(Variable credit, 1-6 semester hours)*

*Prerequisite: approval of advisor and problem director.*

**URBN 6131: METROPOLITAN PLANNING**

Applications of modern technology and quantitative tools to the planning of metropolitan centers.

**URBN 6132: LAND USE PLANNING**

Analysis of land use planning methodology; techniques of carrying out surveys and analysis of population activity systems, and land use are evaluated; land use modeling systems.

**URBN 6331: EMPLOYMENT IN CENTRAL CITIES**

Conflicts arising from employment opportunities versus availability of human resources in central cities; implications for manpower redevelopment and corporate centralization.

**URBN 6332: URBAN ACCOUNTING AND SOCIAL INDICATORS**

Construction and applications of income and product accounts, inter-industry accounts, wealth accounts, social indicators and other information systems.

**URBN 6333: PLANNING AND SOCIAL STRUCTURE**

Planning methodology for the diagnosis of social problems; analysis of the relationship between social structures and problems of the local community.

**URBN 6334: PLANNING OF SERVICE DELIVERY SYSTEMS**

Analysis of various service delivery systems with specific focus on human resource planning. Examination of various models in the context of organizational theory, staffing, financing, and evaluation.

**URBN 67v9: GRADUATE INTERNSHIP IN URBAN AND SUBURBAN STUDIES**

*(Variable credit, 1-6 semester hours)*

*Prerequisites: master's degree candidacy and approval of advisor and dean. Supervised internship in an approved agency; written and oral reports required.*

**URBN 6931: SELECTED TOPICS IN URBAN AND SUBURBAN STUDIES**

*(Identified by specific title each time course is offered.)*

**URBN 6939: MASTER'S THESIS RESEARCH**



# Faculty Roster

Full-time personnel with academic rank as of Spring Semester 1976.

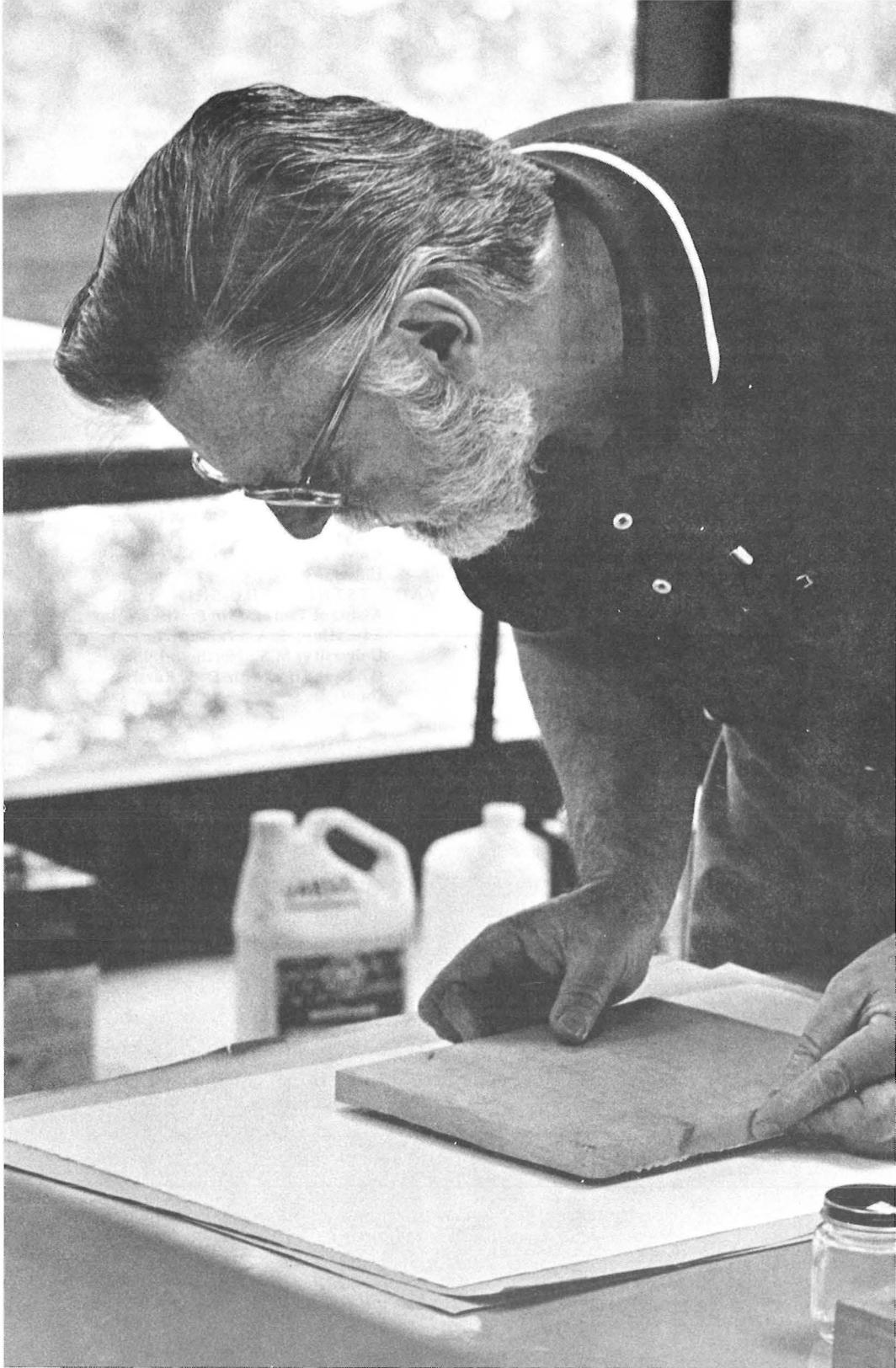
- ALLISON, RICHARD C.**, Associate Professor in Public Affairs; B.A., M.A., North Texas State University; Ph.D., Texas A&M University.
- BALLEW, VAN B.**, Instructor in Business and Industry; B.B.A., University of Houston.
- BASKIN, OTIS W.**, Assistant Professor in Business and Industry; B.A., Oklahoma Christian College; M.A., University of Houston; Ph.D., University of Texas at Austin.
- BENSON, JAMES C.**, Instructor in Public Affairs; B.A., Texas A&M University; M.A., Sam Houston State University.
- BILSTEIN, ROGER E.**, Associate Professor in Humanities; B.A., Doane College; M.A., Ph.D., Ohio State University.
- BLANFORD, GEORGE E. JR.**, Assistant Professor in Science for Society; B.A., Catholic University of America; M.S., University of Louisville; Ph.D., Washington University.
- BLAYLOCK, JEROME W.**, Instructor in Technologies and Coordinator of Computing Services; B.S., M.S., University of Houston.
- BOWMAN, JIM R.**, Assistant Professor in Professional Education; B.S., B.A., M.S., Kansas State College; Ph.D., University of Oklahoma.
- BOZE, FLOYD D.**, Professor in Human Sciences; B.S., M.S., East Texas State University; Ed.D., University of Tennessee.
- BOZE, NANCY S.**, Professor in Professional Education; B.S., M.A., East Texas State University; Ed.D., Texas Tech University.
- BRIDGES, JUANITA R.**, Assistant Professor in Professional Education; B.S., Southern Methodist University; M.Ed., University of Houston.
- BRUCKNER, NANETTE**, Associate Professor in Human Sciences; B.A., M.A., Hunter College; Ph.D., City University of New York.
- BRUNO, JOAN D.**, Assistant Professor in Business and Industry; B.S., M.S., Ph.D., Louisiana State University (C.P.A.).
- BRUNO, SAM J.**, Associate Professor in Business and Industry; B.B.A., Lamar University; M.S., Ph.D., Louisiana State University.
- CALLAGHAN, DONALD F.**, Associate Professor in Public Affairs; B.B.A., University of Miami; M.H.A., Baylor University; Ph.D., University of Iowa.
- CANNON, CALVIN**, Professor and Dean of the School of Human Sciences and Humanities; B.A., Baylor University; M.A., Ph.D., Tulane University; M.A., Amherst College.
- CARTER, JOHN, L.**, Professor in Professional Education; B.A., Sam Houston State University; Ph.D., University of Texas at Austin.
- CARTER, RONALD L.**, Assistant Professor in Public Affairs and Assistant to the Vice Chancellor and Provost; B.A., Northeastern Oklahoma State University; M.A., Ph.D., University of Oklahoma.
- CHANEY, WARREN H.**, Assistant Professor in Business and Industry; B.S., Austin Peay State University; M.B.A., St. Mary's University; Ph.D., North Texas State University.
- CHAZEN, PATRICIA L.**, Assistant Professor in Science for Society; B.S., Ph.D., Michigan State University.
- CHEN, EDWARD C.M.**, Assistant Professor in Science for Society; B.A., Rice University; Ph.D., University of Houston.

- CHERN, WEI S., Associate Professor in Technologies; B.S., Taiwan Cheng-Kung University; M.S., New Mexico State University; Ph.D., University of Florida.
- CHOW, GARLAND, Instructor in Business and Industry; B.S., M.B.S., University of Maryland.
- CLONINGER, DALE O., Associate Professor in Business and Industry; B.S., Georgia Institute of Technology; M.B.A., Emory University. D.B.A., Florida State University.
- COOMER, JAMES, Assistant Professor in Public Affairs; B.A., Carson-Newman College; M.A., Georgia State University; Ph.D., University of Tennessee.
- DECELLE, GERARD E., Instructor in Business and Industry; B.S.A., Bentley College; M.B.A., Suffolk University (C.P.A.).
- DEDE, CHRISTOPHER J., Assistant Professor in Professional Education; B.S., California Institute of Technology; Ed.D., University of Massachusetts.
- DE VRIES, NICK J., Instructor in Humanities; B.S., Hardin-Simmons University; B.F.A., University of Houston; M.F.A., University of Oklahoma.
- DICKERMAN, WILLIAM C., Instructor in Professional Education and Coordinator of Auto-Tutorial Studies; B.A., M.A., University of Michigan.
- DICKERSON, EDWARD T., Assistant Professor in Technologies; B.S.E.E., M.E.E., Ph.D., Texas A&M University.
- DILLNER, MARTHA, Assistant Professor in Professional Education; B.A., Arizona State University; M.Ed., University of Illinois; Ed.D., University of Florida.
- DOYLE, PATRICK H., Assistant Professor in Human Sciences; B.A., M.A., Ph.D., Wayne State University.
- EISNER, HOWARD C., Assistant Professor in Human Sciences; B.A., Oberlin College; Ph.D., University of Michigan.
- ESCARRAZ, DONALD RAY, Associate Professor in Business and Industry; B.S., University of Tampa; M.B.A., University of Wisconsin; Ph.D., Oklahoma State University.
- FISCHER, PETER A., Associate Professor in Humanities and Director of Programs in Humanities; B.A., M.A., Indiana University; Ph.D., Harvard University.
- FOWLES, ROBERT B., Assistant Professor in Human Sciences; B.A., Wesleyan University; M.A., Teachers College, Columbia University; Ph.D., New York University.
- GABIN, SANFORD, Assistant Professor in Public Affairs; A.B., M.A., Ph.D., Princeton University.
- GEE, THOMAS C., Associate Professor in Professional Education; B.A., University of Texas; M.Ed., Ph.D., North Texas State University.
- GONZALEZ, JUAN, Associate Professor in Professional Education; B.A., Pan American University; M.A., Texas A&I; Ph.D., University of Texas.
- GORMAN, JOHN T., Assistant Professor in Humanities; B.A., University of Notre Dame; M.A., Ph.D., University of Virginia.
- GRECO, MICHAEL R., Assistant Professor in Humanities; B.A., San Jose State University; Ph.D., Johns Hopkins University.
- GREGORY, GREG G., Assistant Professor in Business and Industry; B.S., Illinois State University; M.B.A., University of Northern Iowa.
- GROSSMAN, ELLIN, Instructor in Humanities; B.A., Antioch College; M.A., Institute of Fine Arts, New York University.
- HASDORFF, LAWRENCE, Associate Professor in Technologies; B.A., University of Texas; B.S., E.E., University of California; M.E.E., New York University; Ph.D., University of California.
- HILL, KIM QUAIL, Assistant Professor in Public Affairs; B.S., B.A., M.A., Ph.D., Rice University.

- HOPKINS, ROBERT C., Associate Professor in Technologies; B.S., University of California at Los Angeles; M.A., Ph.D., Harvard University.
- HYER, JUNE, Professor in Professional Education; B.A., B.S., M.A., Texas Women's University; Ph.D., University of Texas at Austin.
- HU, SANDRIA, Assistant Professor in Humanities; B.A., M.A., San Diego State University; M.F.A., Stanford University.
- HUSBAND, ELDON W., Assistant Professor in Technologies; B.A.S., University of Houston; M.A.S., Southern Methodist University; Ph.D., University of Texas at Austin.
- JACOBY, JOSEPH E., Instructor in Human Sciences; B.A., Northern Michigan University; M.A., University of Pennsylvania.
- JONES, ROBERT M., Assistant Professor in Professional Education; B.S., University of Oklahoma; M.T., East Central University; Ed.D., Oklahoma State University.
- KARP, HILARY JO., Assistant Professor in Human Sciences; B.A., University of California at Los Angeles; M.A., Brandeis University; Ph.D., University of Chicago.
- KASSCHAU, MARGARET R., Assistant Professor in Science for Society; B.A., University of Rochester; M.S., Ph.D., University of South Carolina.
- KELLER, FRANK R., Associate Professor in Business and Industry; A.B., Stanford University; M.A., San Jose State College; M.B.A., Stanford Business School; D.B.A., Harvard University.
- KIERSTEAD, FRED D. JR., Assistant Professor in Professional Education; B.A., Widener College; M.Ed., West Chester State College; Ph.D., University of Oklahoma.
- KILLEN, HAROLD B., Assistant Professor in Technologies; B.S., M.S., Louisiana Tech University.
- KYLE, DONALD L., Associate Professor in Business and Industry; B.B.A., Southern State College; M.B.A., Ph.D., University of Arkansas (C.P.A.).
- LOWERY, MARIE J., Associate Professor in Professional Education; B.M., M.M.E., North Texas State University; Ed.D., University of Houston.
- LEWIS, BARRY T., Instructor in Business and Industry; B.B.A., Texas Tech University; M.A., University of Missouri.
- McCLINTOCK, ROBERT E., Professor in Professional Education; B.S., University of South Carolina; M.A., Ph.D., George Peabody College.
- McFAUL, THOMAS R., Assistant Professor in Human Sciences; B.A., Northern Illinois University; M.Div., Pacific School of Religion; Ph.D., Boston University.
- McGLASHAN, ROBERT, Associate Professor in Business and Industry and Acting Director of Programs in Business and Industry; B.S., M.B.A., Southern Methodist University; Ph.D., University of Texas at Austin.
- McKAY, CHARLES W., Associate Professor in Technologies and Director of Programs in Technologies; B.S., B.A.S., M.Ed., Ed.D., University of Houston.
- MALIN, DAVID H., Assistant Professor in Human Sciences; B.A., Harvard University; Ph.D., University of Michigan.
- MARCHESINI, ROBERTO, Assistant Professor in Business and Industry; B.A., St. Edward's University; M.A., Ph.D., University of Texas at Austin.
- MARTIN, WILLIAM H. JR., Instructor in Business and Industry; B.S., Tennessee State University; J.D., Texas Southern University.
- MATTHEWS, FRANK F., Assistant Professor in Professional Education; B.S., California Institute of Technology; M.S., Ph.D., Ohio State University.

- MERESMAN, JOEL FRANK, Assistant Professor in Human Sciences; B.A., University of California at Berkeley; M.A., California State University; Ph.D., University of Minnesota.
- MEZZINO, MICHAEL J. JR., Assistant Professor in Science for Society; B.A., Austin College; M.A., Kansas State College; Ph.D., University of Texas at Austin.
- MIESZKOWSKI, GRETCHEN, Associate Professor in Humanities; B.A., Vassar College; M.A., Ph.D., Yale University.
- MILLER, B. JAYE, Assistant Professor in Humanities; B.A., Stanford University; M.A., Ph.D., Yale University.
- NATEMEYER, WALTER, Assistant Professor in Business and Industry; B.B.A., M.B.A., Ohio University; Ph.D., University of Houston.
- NEEDY, CHARLES W., Assistant Professor in Business and Industry; B.A., Southwest Missouri State College; M.S., Oklahoma State University; Ph.D., University of Florida.
- NICKERSON, HAROLD W., Associate Professor in Business and Industry; B.S., M.S., Texas Southern University; M.B.A., D.B.A., Indiana University.
- NEUMANN, ALFRED R., Professor and Chancellor; A.B., Marshall University; M.A., University of Kentucky; A.M., Harvard University; Ph.D., University of Michigan; LL.D., Marshall University.
- PALMER, BRUCE E., Assistant Professor in Humanities; B.A., Grinnell College; M.A., Ph.D., Yale University.
- PARIS, JACK F., Assistant Professor in Technologies; B.S., Texas A&M University; B.S., University of Washington; Ph.D., Texas A&M University.
- PLEDGER, ROSEMARY, Professor and Dean of the School of Professional Studies; B.A., Harding College; M.S., University of Arkansas; D.B.A., Texas Tech University.
- RICE, WILLIAM V. JR., Assistant Professor in Business and Industry; B.S., USMA, West Point; M.B.A., AF Institute of Technology; Ph.D., Louisiana State University.
- RODRIGUEZ, LOUIS J., Professor and Vice Chancellor and Provost; B.A., Newark College of Rutgers University; M.A., Ph.D., Louisiana State University.
- SARTORIUS, LESTER, Associate Professor in Business and Industry; B.B.A., M.S., Ph.D., University of Minnesota.
- SCHUHMANN, ROBERT E., Professor and Dean of the School of Sciences and Technologies and Acting Director of Programs in Science for Society; B.S., M.S., University of Texas at Austin; Ph.D., Baylor College of Medicine.
- SEWELL, DORITA, Assistant Professor in Human Sciences; B.A., Swarthmore College; M.A., Ph.D., University of Chicago.
- SIMPSON, CLAUDE LAVELLE JR., Associate Professor in Business and Industry; B.S., Louisiana Tech University; M.B.A., Ph.D., Georgia State University.
- SMITH, CURTIS, C., Associate Professor in Humanities; B.A., Harvard University; M.A.T., Wesleyan University; Ph.D., Syracuse University.
- SNYDER, JOHN R., Associate Professor in Humanities; B.A., University of Illinois at Urbana; M.A., Ph.D., Claremont Graduate School.
- SOBRINO, JOSEPHINE, Professor in Professional Education and Director of Programs in Professional Education; B.A., Incarnate Word College; M.A., University of Texas at Austin; Ed.D., University of Houston.
- STARLING, GROVER, Associate Professor in Public Affairs and Director of Programs in Public Affairs; B.S., USMA, West Point; Ph.D., University of Texas at Austin.

- TERRY, CAROLYN ANN, Assistant Professor in Professional Education; B.S., Texas Christian University; M.Ed., University of Houston; Ph.D., Ohio State University.
- WALLER, THOMAS C., Instructor in Business and Industry; B.S., U.S. Naval Academy; M.B.A., Stanford University (C.P.A.).
- WARREN, CARRIE LEE, Associate Professor in Professional Education; B.S., Louisiana State University; M.Ed., Ed.D., University of Texas at Austin.
- WATSON, FORREST E., Professor in Professional Education; B.S., M.Ed., Ed.D., North Texas State University.
- WEED, NORMAN L., Associate Professor in Public Affairs, B.S., University of Nebraska; Ph.D., Tulane University.
- WEGMANN, ROBERT G., Associate Professor in Human Sciences and Director of Programs in Human Sciences; B.A., M.Ed., St. Mary's College; M.A., University of Minnesota; Ph.D., University of California at Santa Barbara.
- WHITE, JO ANN, Assistant Professor in Professional Education; B.A., Texas Tech University; M.Ed., Ph.D., North Texas State University.
- WILKENS, LEA-RUTH C., Assistant Professor in Professional Education; B.S., University of Wisconsin; M.S., University of Illinois; Ph.D., University of Pittsburgh.
- WILLIAMS, HENRY M., Associate Professor in Professional Education; A.B., North Carolina Central; M.A., Texas Southern University; Ed.D., University of Houston.
- WYATT, C. VAN, Assistant Professor in Human Sciences and Director of Academic Appraisal and Advisement; B.A., Rutgers University; M.S., Ph.D., Purdue University.
- YAO, ESTHER SHU-SHIN LEE, Assistant Professor in Professional Education; B.A., Taiwan Normal University; M.S., Northern Illinois University; Ph.D., Purdue University.



## APPENDIX A

### H. B. 199 62ND TEXAS LEGISLATURE

#### AN ACT

relating to the establishment, organization, and control of the University of Houston at Clear Lake City; and declaring an emergency.

**BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:**

**Section 1. ESTABLISHMENT, LOCATION.** There is established in Harris County, as recommended by the Coordinating Board, Texas College and University System, a coeducational institution of higher education to be known as the University of Houston at Clear Lake City. The university shall be located on land currently owned by the University of Houston, either land acquired by donation under Chapter 37, Acts of the 60th Legislature, Regular Session, 1967, or land generally adjacent to that land and also owned by the University of Houston.

**Sec. 2. ORGANIZATION AND CONTROL.** The organization and control of the university are vested in the board of regents of the University of Houston. With respect to this university, the board of regents has all the rights, powers, and duties that it has with respect to the organization and control of the University of Houston, except as otherwise provided by this Act. However, the University of Houston at Clear Lake City shall be maintained as a separate and distinct institution of higher education.

**Sec. 3. ROLE AND SCOPE.** The university shall be organized to offer only junior, senior, and graduate-level programs.

**Sec. 4. ADVISORY COMMITTEE.** (a) There is established a permanent advisory committee consisting of the president or a representative designated by him, of each tax-supported junior college and community college now existing or hereafter established in Harris, Galveston, Fort Bend, Waller, Montgomery, Liberty, Chambers or Brazoria County.

(b) The advisory committee shall biennially elect a chairman from among its members and may elect other officers. It shall make rules to govern the calling of meetings and the transaction of its business.

(c) The advisory committee shall periodically study the overall needs of the region mentioned in Subsection (a) of this section for the development of programs and resources in higher education, and as a result of its studies shall make recommendations to the board of regents of the University of Houston regarding the development of the departments and degree programs of the University of Houston at Clear Lake City. The board of regents shall give careful consideration to the recommendations of the advisory committee.

**Sec. 5. AUTHORITY OF COORDINATING BOARD.** The university is a general academic teaching institution, and as such it is subject to the authority of the Coordinating Board, Texas College and University System.

**Sec. 6. SEVERABILITY.** If any provision of this Act or the application thereof to any person or circumstances is held invalid, such invalidity shall not affect other provisions or applications of the Act which can be given effect without the invalid provision or application, and to this end the provisions of this Act are declared to be severable.

## APPENDIX B

RULES AND REGULATIONS FOR  
DETERMINING RESIDENCE STATUSPursuant to Title 3,  
Texas Education Code

Effective July 16, 1974

## I. MINORS

*Statute: Section 54.052(b) An individual, under twenty-one (21) years of age, who is living away from his family, and whose family resides in another state or has not resided in Texas for the 12-month period immediately preceding the date of registration shall be classified as a nonresident student;*

*Section 54.052(c) An individual twenty-one (21) years of age or under whose family has not resided in Texas for the 12-month period immediately preceding the date of registration shall be classified as a nonresident student regardless of whether he has become the legal ward of residents of Texas or has been adopted by residents of Texas while he is attending an educational institution in Texas, or within a 12-month period before his attendance, or under circumstances indicating that the guardianship or adoption was for the purpose of obtaining status as a resident student;*

*Section 54.055 An individual 21 years of age or under whose parents were formerly residents of Texas is entitled to pay the resident tuition fee following the parents' change of legal residence to another state, as long as the individual remains continuously enrolled in a regular session in a state-supported institution of higher education.*

## A. Death or Divorce of Parents

The legal residence of a minor under 21 years of age is usually that of the father. Upon the death of the father, the legal residence of the minor is that of the mother. Upon divorce or legal separation of the parents, the residence of the minor is determined by the residence of the parent with whom the minor is making his home at the time of registration.

## B. Custody by Court Order

If the custody of the minor has been granted by court order (e.g., divorce decree, child custody action, guardianship or adoption proceedings) to some person other than the parent, the residence of that person shall control; provided, however, that such grant of custody was not ordered during or within a year prior to the minor's enrollment in an institution of higher education (defined as any public junior college, public senior college or university, medical or dental unit or other agency of higher education) and was granted under circumstances indicating that such guardianship was not for the purpose of obtaining status as a resident student.

If the minor is not making his home with either parent, and there is no court-appointed guardian, the residence of the parent with whom the minor last resided shall be presumed to control. If, however, the minor has made his home with, and has been dependent upon a grandparent for more than a year prior to enrollment in an institution of higher education, the residence of that natural guardian shall be regarded as his residence. The residence of a person other than a parent or a natural or legal guardian, who may furnish funds for payment of tuition, fees, or living expenses shall in no way affect the residence classification of a minor.

## C. Abandoned Child

In the case of an abandoned child, the residence of a person who has stood *in loco parentis* for a period of time may determine the residence of such abandoned child. The fact of abandonment must be clearly established and must not have been for the purpose of affecting the residence of the minor, and the minor must have actually resided in the home of such person for two years immediately prior to registering in an institution of higher education in Texas and must have received substantially all of his support from such person. In the event that the *in loco parentis* relationship has not existed for the full two year period, a lesser period of time is acceptable in unusual hardship cases, such as death of both parents.

#### D. Orphan

An orphan who has lived for longer than a year in an established orphan's home in Texas operated by a fraternal, religious, or civic organization and has been graduated from the orphan's home shall be considered a resident of Texas provided he remains in Texas from the time of such graduation until he enters an institution of higher education.

#### E. Emancipated Child

Under certain circumstances, a minor may become emancipated or freed from parental control. If the minor's parents have ceased to exercise parental control and responsibility, if the minor is responsible for all of his or her own decisions and affairs, and if the minor is financially independent of parents, the minor may establish emancipation. A minor is financially independent if he or she receives less than \$600 a year from parents, and if the parents do not claim the minor as a dependent. If emancipation is clearly proven, the residence classification of the minor is determined by the residence of the minor rather than the residence of the parents, and after 12 months in Texas under such circumstances, the minor may be classified as a resident, if he or she otherwise satisfies the statutory requirements applicable to those over 21 (e.g., see presumption arising from residence while a student). Proof of emancipation is the responsibility of the minor.

#### F. Married Minors

A minor who is married shall have the power and capacity of a single person of full age and is entitled to select his or her own place of legal residence. After 12 months' residence in Texas under such circumstances, the minor may be classified as a resident if he or she otherwise satisfies the statutory requirements applicable to those over 21 years of age. The residence classification for tuition purposes of a nonresident who marries a Texas resident shall be governed by the provisions of the tuition statute (Texas Education Code, §54.056) and of these rules and regulations as hereinafter set out.

#### G. Minors Whose Parents Moved to Another State or Foreign Country

If the parents of a minor who is enrolled as a resident student move their legal residence to another state or foreign country on, or after August 15, 1971, the minor shall be classified as a nonresident at all subsequent registration periods. Under the provisions of Section 54.055, the minor will be entitled to pay the resident tuition fee as long as he remains continuously enrolled in a regular session in a public institution of higher education. The minor student must re-enroll for the next available regular semester immediately following the parents' change of legal residence to another state.

If the parents of a minor move to another state or foreign country, or reside outside the state or in a foreign country at the time of enrolling in an institution of higher education, but claim legal residence in Texas, conclusive evidence must be presented that the father is still claiming legal residence in the State of Texas and that he has the present intent to return to the state. A certificate from the employer of the parents that the move outside the state was temporary and that there are definite plans to return the parents to Texas by a determinable future date may be considered in this connection.

If a minor whose parents have moved their legal residence to another state or foreign country resides in Texas for 12 consecutive months following his 21st birthday and by his actions clearly indicates that his intention is to establish permanent residence in the state, he may be classified as a resident student effective with the beginning of the term or semester following his 22nd\*\* birthday despite the fact that his entire period of residence in Texas has been as a student.

When the parents of a minor who have established their legal residence in another state or foreign country return and reestablish their legal residence in Texas the minor must be classified as a nonresident until the first registration after the parents have resided in the state for a 12-month period following their return.

## II. RESIDENCE OF INDIVIDUALS OVER TWENTY-ONE

*Statute: Section 54.052(d) An individual twenty-one (21) years of age or over who has come from outside Texas and who is gainfully employed in Texas for a 12-month period immediately preceding registration in an educational institution shall be classified as a resident student as long as he continues to maintain a legal residence in Texas; and*

*Section 54.052(e) An individual twenty-one (21) years of age or over who resides out of the state or who has come from outside Texas and who registers in an educational institution before having resided in Texas for a 12-month period shall be classified as a nonresident student.*

*Section 54.054 A nonresident student classification is presumed to be correct as long as the residence of the individual in the state is primarily for the purpose of attending an educational institution. After residing in Texas for at least twelve (12) months, a nonresident student may be reclassified as a resident student as provided in the rules and regulations adopted by the Coordinating Board, Texas College and University System. Any individual reclassified as a resident student is entitled to pay the tuition fee for a resident of Texas at any subsequent registration as long as he continues to maintain his legal residence in Texas.*

### **Establishment of Residence**

Any individual 21 years of age or over who moves into the state and who is gainfully employed within the state for a period of 12 months prior to enrolling in an educational institution (defined as any institution of higher education, public or private, above the high school level), is entitled to classification as a resident. If such 12 months' residence, however, can be shown not to have been for the purpose of establishing legal residence in the state but to have been for some other purpose, the individual is not entitled to be classified as a resident. Any student registering in an educational institution prior to having resided in the state for 12 months immediately preceding registration shall be classified as a nonresident for tuition purposes.

A person classified as a nonresident student upon his first enrollment in an institution of higher education is presumed to be a nonresident for the period during which he continues as a student. If such nonresident student withdraws from school and resides in the state while gainfully employed for a period of 12 months, upon re-entry into an institution of higher education he will be entitled to be reclassified as a resident for tuition purposes. Accumulations of summer and other vacation periods do not satisfy this requirement. A student is not entitled to reclassification after a residence in the state for 12 months merely on the basis of his or his wife's employment, registration to vote, registration of a motor vehicle and payment of personal property taxes thereon, or the securing of a Texas driver's license. The presumption of a "nonresident" is not a conclusive presumption, however, and other facts may be considered to determine if the presumption has been overcome. Material to this determination are business or personal facts or actions unequivocally indicative of a fixed intention to reside permanently in the state. Such facts may include, but are not limited to, the length of residence and full-time employment prior to registering in the institution, the fact of full-time employment and the nature of such employment (regular industrial, business or professional employment as distinguished from student-type employment) while a student, purchase of a homestead with substantial down payment, dependency upon a parent or guardian who has resided in Texas for at least 12 months immediately preceding the student's registration, and marriage to a resident of Texas. All of these facts are weighed in the light of the fact that a student's residence while in school is primarily for the purpose of education and not to establish residence, and that decisions of an individual as to residence are generally made after the completion of an education and not before.

### **III. Married Students**

*Statute: Section 54.056 A nonresident who marries and remains married to a resident of Texas, classified as such under this Act at the time of the marriage and at the time the nonresident registers, is entitled to pay the resident tuition fee regardless of the length of time he has lived in Texas, and any student who is a resident of Texas who marries a nonresident is entitled to pay the resident tuition fee as long as he does not adopt the legal residence of the spouse in another state.*

#### **Nonresident Who Marries A Resident of Texas**

The nonresident male or female student who marries a resident of Texas is entitled to pay the resident tuition at the registration period next following the date of marriage upon submission of evidence of such marriage and of the spouse's legal residence in Texas. Such marriage evidence is a certified copy of the marriage license or other certified documentary evidence of marriage as filed with the county clerk. The legal residence of a husband and wife are normally presumed to be the same; however, it is possible for either the husband or wife to establish a residence different from the other spouse. In such a situation, the normal standards are followed. (See II.) In the event a nonresident student marries a resident of Texas and subsequently is divorced within 12 months, such nonresident student shall be classified as a nonresident for all enrollment periods subsequent to the date of such divorce; provided, however, the nonresident may establish Texas residence pursuant to normal standards. (See II.)

### **IV. Military Personnel and Veterans**

*Statute: Section 54.058(a) Military personnel are classified as provided by this section in the following manner:*

*(b) An officer, enlisted man or woman, selectee or draftee of the Army, Army Reserve, Army National Guard, Air National Guard, Texas State Guard, Air Force, Air Force*

*Reserve, Navy, Navy Reserve, Marine Corps, Marine Corps Reserve, Coast Guard, or Coast Guard Reserve of the United States, who is assigned to duty in Texas is entitled to register himself, his spouse, and their children in a state institution of higher education by paying the tuition fee and other fees or charges required of Texas residents, without regard to the length of time he has been assigned to duty or resided within the state. However, out-of-state Army National Guard or Air National Guard members attending training with Texas Army or Air National Guard members under National Guard Bureau regulations may not be exempted from nonresident tuition by virtue of that training status nor may out-of-state Army, Air Force, Navy, Marine Corps, or Coast Guard Reserves training with units in Texas under similar regulations be exempted from nonresident tuition by virtue of such training status. It is the intent of the legislature that only those members of the Army or Air National Guard, Texas State Guard, or other reserve forces mentioned above be exempted from the nonresident tuition fee and other fees and charges only when they become members of Texas units of the military organizations mentioned above.*

*(c) As long as they reside continuously in Texas, the spouse and children of a member of the Armed Forces of the United States who has been assigned to duty elsewhere immediately following assignment to duty in Texas are entitled to pay the tuition fees and other fees or charges provided for Texas residents.*

*(d) If nonresident military personnel are attending an institution of higher education under a contract between the institution and any branch of the Armed Forces of the United States, in which the tuition of the member of the military is paid in full by the United States Government, the student shall pay the nonresident tuition fee;\*\*\**

*(e) A Texas institution of higher education may charge to the United States Government the nonresident tuition fee for a veteran enrolled under the provisions of a Federal law or regulation authorizing educational or training benefits for veterans;*

*(f) The spouse and children of a member of the Armed Forces of the United States who dies or is killed are entitled to pay the resident tuition fee, if the wife and children become residents of Texas within 60 days of the date of death; and*

*(g) If a member of the Armed Forces of the United States is stationed outside Texas and his spouse and children establish residence in Texas by residing in Texas and by filing with the Texas institution of higher education at which they plan to register a letter of intent to establish residence in Texas, the institution of higher education shall permit the spouse and children to pay the tuition, fees, and other charges provided for Texas residents without regard to length of time that they have resided within the State.*

#### **A. Certification of Assignment to Duty in Texas**

Subsection (b) provides that military personnel assigned to duty within the State of Texas, their husband or wife as the case may be and their dependent children, shall be entitled to pay the same tuition as a resident of Texas regardless of the length of their physical presence in the state. To be entitled to pay the resident tuition fees, such military personnel shall submit at the time of each registration a statement from his commanding officer or personnel officer certifying that he is then assigned to duty in Texas and that same will be in effect at the time of such registration in an institution of higher education. This subsection also provides that a nonresident member of an out-of-state National Guard unit who is temporarily training with a Texas National Guard unit will not be entitled to pay the resident tuition.

#### **B. Spouse and Children of Member of Armed Services**

Subsection (c) provides that the spouse and dependent children of a member of the armed forces assigned to duty outside the State of Texas immediately after assignment in Texas may be entitled to pay the resident tuition as long as they reside continuously in Texas.

Subsection (g) provides that the spouse and dependent children of a member of the armed forces who is assigned to duty outside the State of Texas and sends his family to the State of Texas may be entitled to pay the resident tuition if they file with the institution of higher education at which the student intends to register a letter of intent, an affidavit or other evidence satisfactory to the institution stating that they intend to become permanent residents of Texas.

Subsection (f) provides that a member of the immediate family (which shall include spouse or dependent children) of a member of the armed forces who dies or is killed in action while in military service may qualify to pay the resident tuition if they become residents of Texas within 60 days of the date of death. To qualify under this provision, the student shall submit to the institution of higher education satisfactory evidence establishing the date of death and residence in Texas.

The military personnel spouse and dependent children enumerated in (b), (c), (f), and (g) are classified as nonresidents but shall be entitled to pay the resident tuition regardless of their length of residence in Texas if they comply with the provisions of the statute and these rules and regulations.

### **C. Nonresidents Attending College Under Federal Benefits Programs for Veterans**

Subsection (e) provides that the institution of higher education may charge the nonresident tuition fee for a nonresident veteran to the United States Government under the provisions of any federal law or regulation authorizing educational or training benefits for veterans.

### **D. Legal Residence of Person in Military Service**

A person in military service is presumed to maintain during his entire period of active service the same legal residence which was in effect at the time he entered military service. A person stationed in a state on military service is presumed not to establish a legal residence in that state because his presence is not voluntary but under military orders. It is possible for a member of the military service to abandon his domicile of original entry into the service and to select another, but to show establishment of a new domicile during the term of active service, there must be clear and unequivocal proof of such intent. An extended period of service alone is not sufficient. The purchase of residential property is not conclusive evidence unless coupled with other facts indicating an intent to put down roots in the community and to reside there after termination of military service. Evidence which will be considered in determining this requisite intent includes, but is not limited to a substantial investment in a residence and the claiming of a homestead exemption thereon, registration to vote, and voting in local elections, registration of an automobile in Texas and payment of personal property taxes thereon, obtaining a Texas driver's license, maintaining checking accounts, savings accounts, and safety deposit boxes in Texas banks, existence of wills or other legal documents indicating residence in Texas, change of home-of-record and designation of Texas as the place of legal residence for income tax purposes on military personnel records, business transactions or activities not normally engaged in by military personnel, membership in professional or other state organizations, and marriage to a resident of Texas. Purchase of property during terminal years of military service preceding retirement generally is given greater weight than a similar purchase made prior to such terminal period.

### **E. Residence Classification of Veterans Upon Separation from Military Service**

A person who enrolls in an institution of higher education following separation from military service must be classified as a nonresident student unless, (1) the individual was a legal resident of Texas at the time of entry into military service and has not relinquished that residence, (2) the individual can prove that during military service he or she has, in fact, established a bona fide, legal residence in Texas at a time at least 12 months prior to registration, or (3) the individual has resided in Texas other than as a student for 12 months prior to registration and subsequent to discharge from service. The nonresident classification is a presumption, however, which can be overcome pursuant to the guidelines and standards for establishing Texas residence. (See 11.)

## **V. Employees of Institutions of Higher Education Other Than Students**

*Statute: Section 54.059 A teacher, professor, or other employees of a Texas institution of higher education is entitled to register himself, his spouse, and their children in a state institution of higher education by paying the tuition fee and other fees or charges required for Texas residents without regard to the length of time he has resided in Texas. A teacher, professor, or other employee of a Texas institution of higher education is any person employed at least one-half time on a regular monthly salary basis by a state institution of higher education.*

A person employed at least half-time on a regular monthly salary basis (not an hourly employee) by any public institution of higher education, with an effective date of employment on the 12th class day of a regular semester or the 4th class day of a summer term, may pay the same tuition as a resident of Texas for self, husband or wife as the case may be and their children, regardless of the length of residence in the state. To be entitled to pay the resident tuition fees such employee must submit prior to the time of each registration a statement certifying employment from the Director of Personnel or a designated representative of the institution of higher education by which he is employed.

## VI. Student Employees

*Statute: Section 54.051(o) A teaching assistant, research assistant, or other student employee of any institution covered by this section is entitled to register himself, his spouse, and their children in a state institution of higher education by paying the tuition fees and other fees or charges required for Texas residents, without regard to the length of time he had resided in Texas; provided that said student employee is employed at least one-half time in a position which relates to his degree program under rules and regulations established by the employer institution. This exemption shall continue for students employed two consecutive semesters through the summer session following such employment if the institution is unable to provide employment and, as determined under standards established by the institution, if the employee has satisfactorily completed his employment.*

A student employed at least half-time by any public institution of higher education in a position which relates to his degree program, with an effective date of employment on or before the 12th class day of a regular semester, or the 4th class day of a summer term, may pay the same tuition as a resident of Texas for himself, his husband or wife as the case may be, and their children regardless of the length of residence in the state. The institution which employs the student shall determine whether or not the student's job relates to his degree program. If a student is employed by an institution of higher education for consecutive Fall and Spring semesters and he was further eligible to pay the tuition charged to Texas residents during those Fall and Spring semesters because of the provisions of this subsection, then the student may continue to pay the resident tuition rate during the summer session following the Spring employment if the institution is unable to provide employment and if the student has satisfactorily completed his employment.

## VII. Competitive Scholarships

*Statute: Section 54.051(p) A nonresident student holding a competitive scholarship of at least \$200 for the academic year or summer for which he is enrolled is entitled to pay the fees and charges required of Texas residents without regard to the length of time he has resided in Texas, provided that he must compete with other students, including Texas residents, for the scholarship and that the scholarship must be awarded by a scholarship committee officially recognized by the administration of the institution of higher education.*

An official scholarship committee or committees of a public institution of higher education may award competitive scholarships in amounts of \$200 or more for the academic year, the summer session or both. If a nonresident student obtains one of these competitive scholarships, he may pay the same tuition as a resident of Texas during the registration period in which the scholarship is in effect. The student must present a statement from the official scholarship committee certifying that such scholarship will be in effect at the time of registration and that a portion of the scholarship will be disbursed in each registration term in which Texas resident tuition rates will apply.

## VIII. Citizens of Any Country Other Than the United States of America

*Statute: Section 54.057 An alien who is living in this country under a visa permitting permanent residence or who has filed with the proper Federal immigration authorities a declaration of intention to become a citizen has the same privilege of qualifying for resident status for fee purposes under this Act as has a citizen of the United States. A resident alien residing in a junior college district located immediately adjacent to Texas boundary lines shall be charged the resident tuition by that junior college.*

An alien living in the United States under a visa permitting permanent residence, or one who has filed with the proper Federal authorities a declaration of intention to become a citizen, has the same privilege of qualifying for Texas resident status for tuition purposes as has a citizen of the United States.

## IX. Reciprocity Clause Applicable to Junior Colleges

*Statute: Section 54.060 The nonresident tuition fee prescribed in this Act does not apply to a nonresident student who is a resident of a state situated adjacent to Texas and who registers in any Texas public junior college situated immediately adjacent to the state in which the nonresident student resides. The nonresident student described in this Subsection shall pay an amount equivalent to the amount charged a Texas student registered at a similar school in the state in which the nonresident student resides.*

## X. Student Responsibilities

### A. Student Responsibility to Register Under Proper Classification

The responsibility of registering under the proper residence classification is that of the student, and if there is any question of his right to classification as a resident of Texas, it is his obligation, prior to or at the time of his registration, to raise the question with the administrative officials of the institution in which he is registering and have such officially determined.

### B. Notification Upon Becoming a Nonresident

Every student who is classified as a resident student but who becomes a nonresident at any time by virtue of a change of legal residence by his own action or by the person controlling his domicile is required to notify the proper administrative officials of his institution at once.

## XI. Official Change of Residence Status

### A. Application for Reclassification

Every student classified as a nonresident student shall be considered to retain that status until such time as he shall have made written application for reclassification in the form prescribed by the institution and shall have been officially reclassified in writing as a resident of Texas by the proper administrative officers of the institution.

### B. Reclassification as a Nonresident

Every person who has been classified as a resident of Texas shall be reclassified as a nonresident student whenever he shall report, or there is found to exist, circumstances indicating a change in legal residence to another state. If any student who has been classified as a resident of Texas shall be found to have been erroneously so classified, he shall be reclassified as a nonresident and shall be required to pay the difference between the resident and nonresident fees for such semesters in which he was so erroneously classified. In addition, he shall be required to pay back all monies borrowed from the Texas Opportunity Plan Fund.

### C. Reclassification as a Resident

If any student has been erroneously classified as a nonresident student and subsequently proves to the satisfaction of the appropriate officials of an institution of higher education that he should have been classified as a resident student, he shall be reclassified as a resident of Texas and shall be entitled to a refund of the difference between the resident and nonresident fees for the semesters in which he was so erroneously classified.

## XII. Penalties

*Statute: Section 54.053 The governing board of each institution required by this Act to charge a nonresident tuition or registration fee is subject to the rules, regulations, and interpretations issued by the Coordinating Board, Texas College and University System, for the administration of the nonresident tuition provisions of this Act. The rules, regulations, and interpretations promulgated by the Coordinating Board shall be furnished to the presidents or administrative heads of all Texas public senior and junior colleges and universities.*

*Section 54.061 The governing board of an institution of higher education may assess and collect from each nonresident student who fails to comply with the rules and regulations of the boards concerning nonresident fees a penalty not to exceed \$10 a semester.*

### Student Compliance with Institutional Rules and Regulations

Each institution has been authorized by statute to assess and collect from each nonresident student failing to comply with the provisions of the tuition statute and with these interpretations concerning nonresident fees a penalty not to exceed \$10.00 a semester. In addition, if a student has obtained residence classification by virtue of deliberate concealment of facts, or misrepresentation of fact, he may be subject to appropriate disciplinary action, in accordance with the rules and regulations that may be adopted by the governing boards of the respective institutions of higher education.

\* In accordance with provisions of Senate Bill 123, 63rd Texas Legislature, effective August 27, 1973, and with Attorney General's Opinion H-82, August 13, 1973, any reference to age "twenty-one" in these *Rules and Regulations for Determining Residency status* should be interpreted to mean age "eighteen."

\*\* The reference to the 22nd birthday, found on page 4 should be interpreted as the 19th birthday.

\*\*\* Subparagraph (d), Section 54.058, which appears on page 8, has been repealed by House Bill 736, 63rd Legislature, effective August 27, 1973.





## DIRECTORY FOR CORRESPONDENCE

Admission . . . . .	Office of Admissions and Records
Advisement . . . . .	Director of Academic Appraisal and Advisement
Concentrations, Degree . . . . .	Dean, School of Human Sciences and Humanities Dean, School of Professional Studies Dean, School of Sciences and Technologies
Financial Aid . . . . .	Financial Aid Counselor
Financial Matters . . . . .	Vice Chancellor for Financial Services
General Information . . . . .	Office of Admissions and Records
International Students . . . . .	Assistant Director of Admissions
Registration . . . . .	Registrar
Residency . . . . .	Admissions Counselor
Student Work-Study Employment . . . . .	Financial Aid Counselor
Student Services . . . . .	Director of Student Services
Teacher Education . . . . .	Director of Programs in Professional Education
Testing and Counseling . . . . .	Director of Academic Appraisal and Advisement
Transcripts . . . . .	Registrar
Veterans' Affairs . . . . .	Veterans' Counselor

Requests for information should be directed to the offices or persons above. The University's address for all inquiries is 2700 Bay Area Boulevard, Houston, Texas 77058.



# Index

## ACADEMIC POLICIES

Academic Honors List	25
Academic Standards	25
Change of Objective	26
Class Attendance	23
Course Load	23
Examinations	23
Marking System	23
Release of Information	26
Resident Credit	25
Student Conduct	27
Student Responsibility	27
Transcripts	26
Withdrawals	24

## ADMISSIONS

Advanced Placement Credit	14
Auditing Courses	15
Categories of Matriculation	10
Matriculation Requirements	9
Prerogatives of Matriculated	
Status	14
Registration	14
Transfer of Credit	13

## CALENDAR

CALENDAR . . . . . vi

## CERTIFICATES AND ENDORSEMENTS

Bilingual Endorsement	53
Early Childhood Education for	
Exceptional Children Endorsement	54
Educational Diagnostics,	
Certification for	61
Kindergarten Endorsement	54
Language/Learning Disabilities	
Endorsement	54
Library Science Endorsement	55
Mid-Management (Principal),	
Certification for	62
Professional Certificate:	
elementary	57
secondary	58
Provisional Certificate:	
elementary	55
secondary	56
Reading Specialist, Certification for	63
Supervision, Certification for	62

## COURSE DESCRIPTIONS

## DEGREE PROGRAMS AND CONCENTRATIONS

Accounting	46
Administration of Health Services	64
Allied Health Sciences	71
Avionics Instrumentation	79
Behavioral Sciences	36
Biological Sciences	72
Business and Industrial	
Management	47

Computer Applications to	
Industrial Processes	80
Economics	36
Educational Management	61
Education-Related Sciences	61
Electro-Optical Technology	84
Environmental Management	65
Finance	46
Future, Studies of the	38
Government Planning and the	
Political Process	66
Historical Studies	40
Human Resources, Development and	
Utilization of	65
Humanities	39
Law and the Citizen	67
Literature	41
Mathematical Sciences	74
Oceanographic Instrumentation	85
Physical Sciences	76
Process Monitoring and Control	87
Spanish	43
Teaching: College	59
Teaching: Middle through	
High School	56
Teaching: Preschool and	
Elementary	55
Transportation	48
Urban and Suburban Studies	69

## DEGREE REQUIREMENTS, GENERAL

Applying for Graduation	32
Graduation with Honors	32
Bachelor's Degrees	29
Master's Degrees	29

## FACULTY ROSTER

FACULTY ROSTER . . . . . 195

## FINANCIAL INFORMATION

## TUITION AND FEES

Refunds	19
Schedule of Charges	17
Financial Aid and Awards	20

## GENERAL INFORMATION

Accreditation	4
Degrees Offered 1976-77	3
History and Future	1
Library Resources	4
Purpose and Philosophy	1

## GLOSSARY OF TERMS

GLOSSARY OF TERMS . . . . . 5

## REGISTRATION

REGISTRATION . . . . . 14

## SCHOOL OF HUMAN SCIENCES AND HUMANITIES

SCHOOL OF HUMAN SCIENCES AND HUMANITIES . . . . . 35

## SCHOOL OF PROFESSIONAL STUDIES

SCHOOL OF PROFESSIONAL STUDIES . . . . . 45

## SCHOOL OF SCIENCES AND TECHNOLOGIES

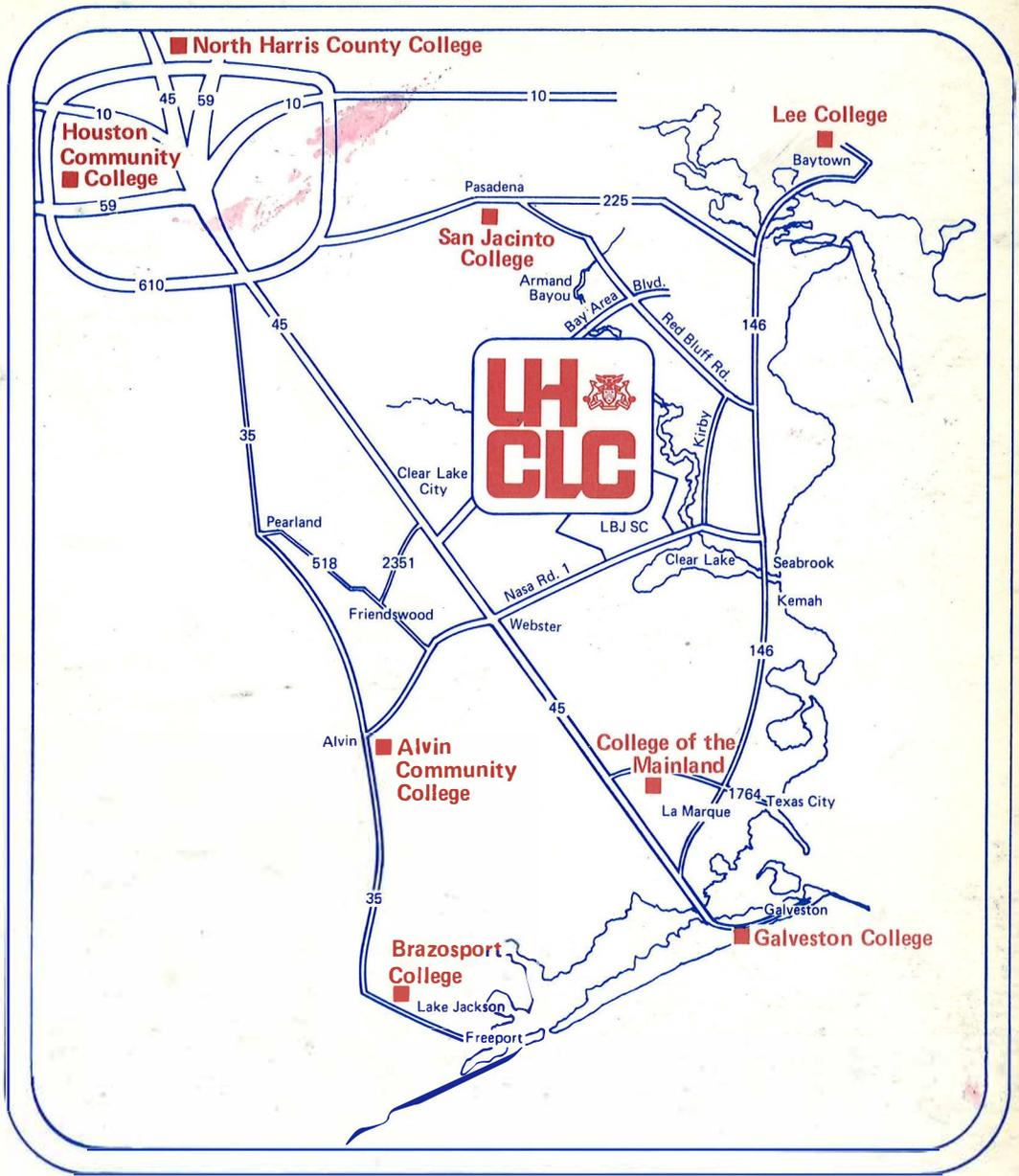
SCHOOL OF SCIENCES AND TECHNOLOGIES . . . . . 71

## STUDENT SERVICES AND ACTIVITIES

STUDENT SERVICES AND ACTIVITIES . . . . . 4







*After Community College,  
Join us at UH/CLC  
for the Junior, Senior and  
Graduate years.*