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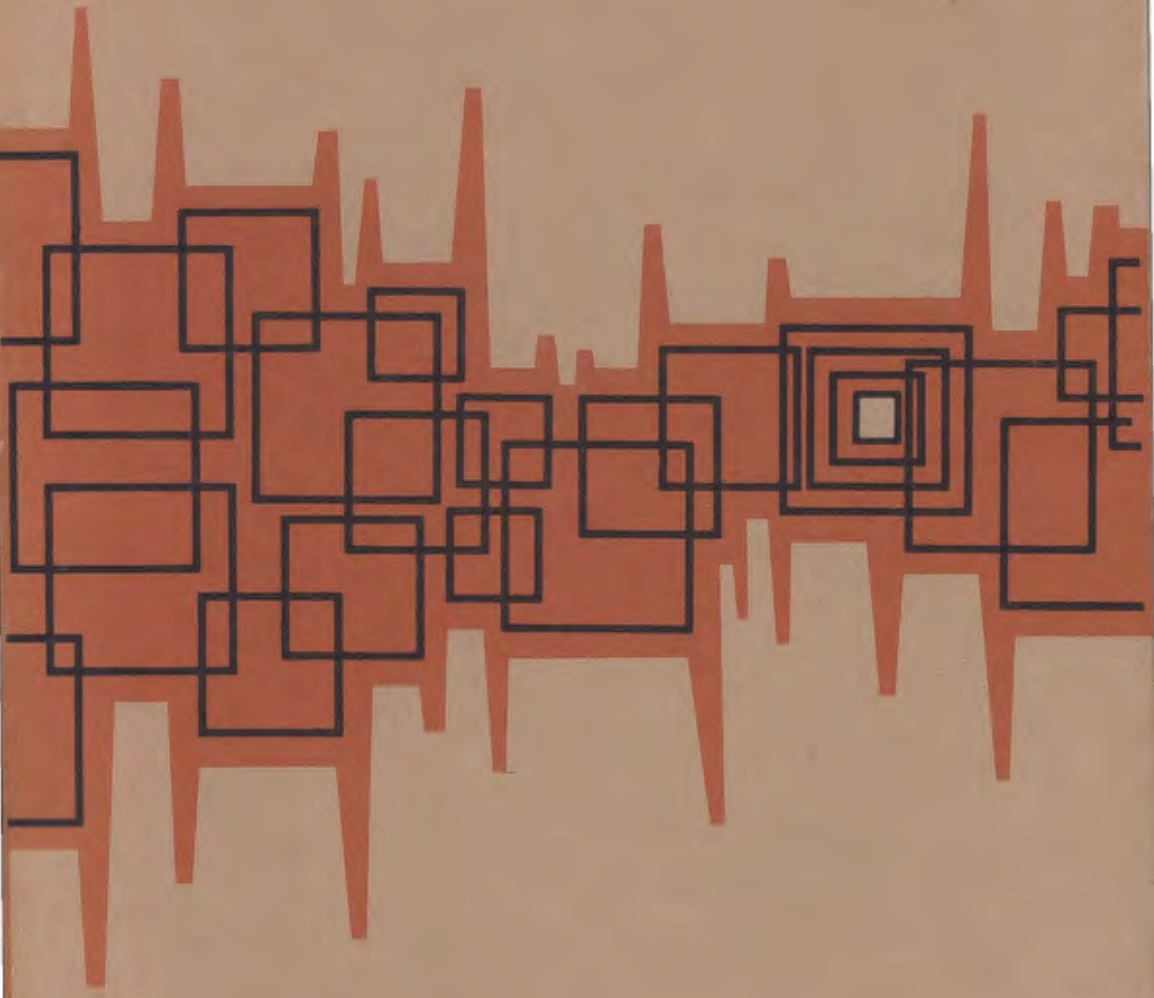


THE UNIVERSITY OF TEXAS
PERMIAN BASIN

Catalog of
The University of Texas of the Permian Basin
Number 7401, May 1974

Address correspondence to:

The University of Texas of the Permian Basin
Odessa, Texas 79762

THE UNIVERSITY OF TEXAS OF THE PERMIAN BASIN

ODESSA, TEXAS

The provisions of this catalog are not to be regarded as a contract between the student and The University of Texas of the Permian Basin. Changes are made in general academic regulations and in academic requirements from time to time.

STATEMENT ON EQUAL EDUCATIONAL OPPORTUNITY

With respect to the admission and education of students; with respect to the availability of student loans, grants, scholarships, and job opportunities; with respect to the employment and promotion of teaching and nonteaching personnel; and with respect to the student and faculty activities conducted on premises owned or occupied by the University, The University of Texas of the Permian Basin shall not discriminate either in favor of or against any person on account of his or her race, creed, color, sex, or national origin.

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UNIVERSITY CALENDAR

The University of Texas of the Permian Basin follows the Common Calendar required for all public colleges and universities in Texas. It consists of two semesters during the academic year plus two summer terms of five and one-half weeks each.

Fall Semester, 1974

August 29-31	Registration
September 3	Classes begin
September 17	Last day for late registration, Last day to add courses
September 18	Twelfth class day and date of official enrollment count
November 28-29	Thanksgiving holidays
December 17	Last day of classes
December 18-20	Final examinations
December 20	Semester ends

Spring Semester, 1975

January 10-11	Registration
January 13	Classes begin
January 27	Last day for late registration, Last day to add courses
January 28	Twelfth class day and date of official enrollment count
March 23-30	Easter vacation
May 13	Last day of classes
May 14-16	Final examinations
May 16	Semester ends

Summer Session, 1975

First Term	
May 30	Registration
June 2	Classes begin
June 5	Last day for late registration, Last day to add courses
June 5	Fourth class day and date of official enrollment count
July 4	Independence Day, a holiday
July 9	Final Examinations
July 9	End of first term
Second Term	
July 8	Registration
July 10	Classes begin
July 15	Last day for late registration, Last day to add courses
July 15	Fourth class day and date of official enrollment count
August 15	Final examinations
August 15	End of second term

Final dates for dropping and adding courses do not apply to courses taught on a self-paced instruction basis and certain other courses not taught on a conventional lecture-discussion basis. For information about specific courses, the student should see his academic adviser.

Contents

The University

The University of Texas of the Permian Basin is an upper-level general educational institution, and as such it offers degree programs in most of the basic disciplines as well as in several professional fields. Although the University was established in answer to the educational needs of the citizens of the Permian Basin, it also assumes its share of responsibility for serving young people from throughout Texas.

The mission of The University of Texas of the Permian Basin is to help each student who enrolls to realize his fullest potential, both personally and professionally. A student's experience at UT Permian should help him to develop his powers of judgement and to mature emotionally and intellectually; it should prepare him to earn a satisfactory livelihood and to make a worthwhile contribution to the economic life of the country.

To fulfill this mission, the University provides all students, those in basic arts and sciences disciplines as well as those in professional programs, with academic training which will contribute significantly to the endeavors they will later enter.

In addition to career preparation, the University provides students practical understanding in other areas crucial to a meaningful life: a comprehension of the functioning of representative government and the attendant responsibilities of all citizens within it, the ability to communicate orally and in writing in order to transmit their ideas clearly to others, an appreciation of aesthetics that will enable them to live richer lives, a basic concept of the role and impact of science and technology so that they may use these tools effectively, and skill in lifetime sports.

Finally, through formal instruction and the informal atmosphere it provides, the University helps each student to develop the ability to live in harmony with others, to live in a multicultural society, to recognize and respect honest differences of opinion, and to seek a better life for the community of man.

HISTORY OF THE UNIVERSITY

For over a quarter of a century residents of the Permian Basin, a huge oil-rich geological formation in West Texas, have felt keenly the need for a baccalaureate level university. A study by the Coordinating Board of the Texas College and University System in 1968 revealed that the Odessa-Midland area was the only major population center in Texas not served by a bachelor's degree granting institution with the nearest senior college more than 125 miles away. In answer to this need the Texas Legislature in 1969 authorized the establishment of The University of Texas of the Permian Basin within The University of Texas System. The Legislature designated UT Permian as an upper-level institution charged with providing baccalaureate and graduate degree programs to junior, senior, and graduate-level students.

In December, 1969, following a study of the long-range growth potential of cities in the area, The University of Texas System Board of Regents selected a 600-acre campus site on the eastern edge of Odessa in Ector County. Land for the campus was donated to The University of Texas System by the Houston Endowment, Inc., the people of Ector County, Mr. and Mrs. Tom McKnight, and Mr. and Mrs. Ewell McKnight, E. G. Rodman and W. D. Noel.

The University of Texas of the Permian Basin opened for classes in September, 1973.

THE CAMPUS

The size, location, and long-range building plans of the campus of The University of Texas of the Permian Basin eliminate problems of inconvenience and congestion faced by many universities and at the same time provide a setting conducive to learning and personal interaction.

The 600-acre campus site on the eastern edge of Odessa is essentially square in shape and surrounded by multi-lane streets on all four sides, making it easily accessible from all directions. The core campus itself is compact and provides for convenient parking—almost one space per student.

UT Permian's buildings are as forward looking as its educational ideas, with emphasis on efficiency and flexibility in building use. Capitalizing on the natural strength of the Permian Basin site, the campus follows a modern mesa design. Most structures are built approximately 22 feet above ground, story upon story, using the caprock shelf running under the site as a natural foundation.

Vehicular traffic routes, service facilities, and some parking lots are located in the area beneath the buildings. This lower level is partially hidden by man-made earth slopes, called berms.

Buildings are connected by pedestrian concourses on the upper levels providing cover during inclement weather and easy walking to any point on the core campus within six minutes, even after the University has expanded to maximum capacity. University buildings are functionally flexible, with the use of snap-in steel walls making interior space easily convertible as needs change and the student body grows.

To facilitate personal interaction among both students and faculty, decentralized talk-study areas are interspersed throughout the campus complex. Interdisciplinary arrangement of faculty offices and open cooperative laboratories for common use by physical and life sciences further encourage communication among all faculty, staff, and students.

A multi-phased plan of development provides for eventual expansion into the total 600 acres of the campus site. Phase I includes classroom, laboratory, and gymnasium buildings, plus playing fields and athletic facilities.

Academic Policies

The University of Texas of the Permian Basin was planned with a view to providing the student maximum flexibility in his studies, with emphasis on demonstrated competence, all to the end of an enriched and more effective education for the student. While the student generally encounters less structure than at most universities, at the same time he finds himself faced with greater personal responsibility for the management of his time, energy, and resources.

THE ACADEMIC COMPONENTS

The academic programs of the University are organized in three colleges plus the Learning Resources Center. The colleges and the degree programs offered within each are:

The College of Arts and Education offers the Bachelor of Arts degree in anthropology, art, creative writing, government, history, humanities, literature (with options in American literature, American studies, English literature and comparative literature), mass communications (print journalism and radio/TV), music, physical education and health, psychology, sociology, speech, Spanish, and theatre. This College also offers Master of Arts degree programs in physical education and health and in education, including special education, counseling, secondary education, elementary education, and early childhood education.

The College of Science and Engineering offers the Bachelor of Science degree in chemistry, computer science, earth science, engineering, life science, mathematics and physics. This College also offers the Master of Science degree in engineering.

The College of Management offers the Bachelor of Arts degree in law enforcement, law enforcement management, and economics, and the Bachelor of Business Administration degree in accountancy and in business management, with a special option in aviation management. This College also offers the Master of Business Administration degree in business management.

Unlike most universities The University of Texas of the Permian Basin

does not have academic departments. Most of the administration in each college is centered in the office of the dean who is assisted by an assistant dean and a business manager. Most of the faculties (i.e. Faculty of Art, Faculty of Pedagogical Studies, etc.) have chairmen but in the cases of smaller faculties no chairman has been designated.

The Learning Resources Center (LRC), known as the library on most campuses, contains more than 300,000 volumes. The LRC uses computerized check-out of books, electronic security on books borrowed, and several other modern library innovations.

The Instructional Media Services, a component of the LRC, provides a wide array of teaching technology to enhance teaching and learning such as video and audio recording services, video transmission for television teaching, audio and video cassette duplication, production of audio tapes and television films, film loops, slides, specimens, art work, and others. It also assists students and professors in learning to use these materials most effectively.

Computer Services is a part of the LRC and serves students and faculty in course work as well as in research. The Computer Services staff also provides computerized student records and processes data for the business needs of the University, as well as for the LRC.

ADMISSION

To be admitted to undergraduate study or to non-degree study, applicants should meet the following requirements:

(1) Satisfactorily complete 60 credits of course work at an accredited junior college, senior college, or university. Students who have completed at least 54 but less than 60 credits may enroll but will be expected to complete credits needed to total 60 at a nearby junior college or elsewhere during the first semester enrolled.

(2) Have a C average in all courses which are applicable toward the degree for which he expects to study. Grades of F are not transferable to the University.

(3) Be in good standing at the last institution attended or qualify for readmission to that institution.

(4) Submit official transcripts of all college or university work previously taken. Before submitting transcripts or any documents, the applicant should obtain an application form and complete and return it with transcripts to the Admissions Office. To obtain an admission form or additional information, send a copy of the form in the back of this catalog or write to:

Director of Admissions
The University of Texas of the Permian Basin
Odessa, Texas 79762

While there is no specific deadline for application for admission to the fall semester, applicants are encouraged to submit applications and transcripts by July 1. International students and U.S. citizens who are submitting transcripts from colleges or universities in other countries should submit applications by June 15.

Any applicant who is denied admission may petition for reconsideration and should submit additional information that might relate to the reason for the petition.

Students entering UT Permian are required by law to submit proof of immunization within the last 10 years against diphtheria-tetanus (Td.). Students are required to submit proof at registration.Each student also must complete a health questionnaire which will provide vital information in case of emergency. Forms will be provided with registration materials.

REGISTRATION

Registration for the Fall Semester, 1974, is scheduled for August 29, 30, 31. Students may visit with their faculty advisers prior to that date and plan study schedules, but registration will not begin prior to August 29. Students registering after August 31 must pay a late registration fee, except as explained below. The normal late registration period begins on the first day of classes and ends with the eleventh day of classes. Except in unusual circumstances, students may not register for conventionally taught courses after that date.

Continuous Registration. As explained elsewhere, a substantial number of courses are offered on a self-paced instruction basis. Students may enroll in the University and register for these courses at any time. Registration for self-paced instruction courses only does not involve a late registration fee.

No Credit Registration. Students who wish to enroll in a course but do not desire academic credit may register for the course for no credit. The fees for no-credit registration are the same as when taking the course for credit, and the student has the same privileges as a student enrolled for credit except that the instructor will award no grade and normally will not mark tests.

Visitor. In some conventionally taught courses, a non-student may be admitted as a "Visitor" by gaining the permission of the instructor and paying a fee of $5.00 per course. A Visitor may not ask questions nor participate in class discussion. One may not enroll as a Visitor in laboratory, studio, and other activity courses, or in courses taught on a self-paced basis.

FEES AND DEPOSITS

Students are not entitled to enter class or laboratory until their fees and deposits have been paid. Payment may be made by personal check for the exact amount due, provided the bank transit number is encoded thereon in compliance with revised Federal Reserve Bank regulations. Checks for larger amounts, the difference to be paid in cash to the student, cannot be accepted. In paying fees by check, students should exercise care. A bad check, whether given by mistake or otherwise, unless the admitted error of the bank concerned, is likely to delay actual payment and thus result in a penalty for late registration. (All of the fees listed are subject to change by the Legislature without notice.) See below for tuition table.

Tuition

		Nonresidents	
Number of Hours Taken	*Residents of Texas*	*U.S. Citizens*	*Foreign Students*
1	$50.00	$ 40.00	$200.00
2	50.00	80.00	200.00
3	50.00	120.00	200.00
4	50.00	160.00	200.00
5	50.00	200.00	200.00
6	50.00	240.00	200.00
7	50.00	280.00	200.00
8	50.00	320.00	200.00
9	50.00	360.00	200.00
10	50.00	400.00	200.00
11	50.00	440.00	200.00
12	50.00	480.00	200.00
13	52.00	520.00	200.00
14	56.00	560.00	200.00
15	60.00	600.00	210.00
16	64.00	640.00	224.00
17	68.00	680.00	238.00
18	72.00	720.00	252.00
19	76.00	760.00	266.00
20	80.00	800.00	280.00
21	84.00	840.00	294.00
22	88.00	880.00	308.00

Refund of Tuition Fee for Students Withdrawing. Upon presentation to the Registrar of his receipt from the Bursar showing payment of the fee, any student withdrawing officially (a) during the first week of classwork of a semester will receive a refund of 70 percent of the applicable portion of the fee; (b) during the second week, 60 percent; (c) during the third week, 40 percent; (d) during the fourth week, 20 percent; (e) during the fifth week and thereafter, no refund.

An immediate refund will not be made to a student who withdraws within 15 days after payment of his fees; but, upon request, a check covering all refunds will be mailed to the address left with the Registrar.

A student who enters the spring semester not knowing his fall semester grades and who is required to withdraw because of failure in the work of the fall semester will have all of his registration and tuition fee for the spring semester refunded.

No refund provided for above will be granted unless applied for within one year after official withdrawal.

General Property Deposit. Every student, unless he is registered in absentia, must make a general property deposit of $10 to protect the University from any loss whatsoever, such as property loss, damages, breakage, or violation of rules in any University library or laboratory; failure to return keys furnished by the University; or for damage to or loss of any other University property.

This deposit, less outstanding charges, will be returned to the student upon request at the end of his career as a student at UT Permian. A general property deposit which remains without call for refund for a period of four years from the date of last attendance at The University of Texas of the Permian Basin shall be forfeited, and the deposit shall become operative to the permanent use and purpose of the Student Property Deposit Scholarships. This applies to deposits made in the past, as well as those to be made in the future.

Student Services Fee. The student services fee is compulsory for all students. The amount charged is $2.50 per credit hour for 1-11 hours of credit for which the student is registered. Students registered for 12 hours of credit or more are charged $30.00. Students who register for the summer session are charged on the same basis as students registered during the regular academic year. The fee covers free or reduced admission rates to athletic events, formal convocation events, special publications, intramural activities, most athletic facilities, student identification card, free or reduced admission fees to lecture series, cultural events, and film series.

A student's spouse may purchase an activities card for $10 which will entitle him or her to free or reduced admission to lecture series, cultural event programs, and film series.

Refund of the student services fee to students withdrawing is made on the same basis as refund of the registration and tuition fee to students withdrawing.

Laboratory Fees. For each laboratory course a fee is charged in an amount to cover, in general, the cost of laboratory materials and supplies used by a student; however, such charge per student shall be not less than $2 nor more than $8 for each laboratory course in any one semester or summer term. The Course Schedule will indicate the amount of the laboratory fee for each course.

Supplementary Fees for Selected Courses. Students taking selected courses (e.g., studio art, art education, courses requiring field trips, lifetime sports, physical education, or applied music) are required to pay supplementary fees each semester, a schedule of which is given in the course schedule. A supplementary fee for applied music "unclassified" and art is charged.

Supplementary fees, in the case of students withdrawing or dropping a course, are refunded according to the schedule provided for refunding the registration and tuition fee. Exception: A student who officially drops a course with a supplementary fee and at the same time officially adds another such course will receive a refund of the full supplementary fee paid on the course dropped and will pay the corresponding fee required for the course added.

Special Charge for Late Registration. Any student registering who, with proper permission, registers after the appointed days for registering in that semester, will be required to pay a special charge of $5 to defray the costs of the extra services required to effect his late registration.

Bad Checks. A service charge of $2 will be assessed the maker of the check for each returned check to offset the cost of processing such checks.

Diploma Charge. A diploma fee of $4 is charged to graduating students at the time of their graduation.

Non-Student Fees. Non-students desiring the use of the facilities of the gymnasium and other physical activity facilities (including the faculty-staff recreation program) will pay the following fees: Non-students–$24 to include dressing facility. Faculty and administrative staff (rank of instructor or above)–$6 a year to include dressing facility. Special non-student group programs–$1 a month or any portion thereof, not to include dressing facility.

Visitor's Fee. A fee of $5 a semester or term is required of persons not registered in the University who wish to visit one or more courses. If library privileges are desired, the non-student library deposit of $15 a year must be made.

Transcript Charge. A $1 charge may be made for transcripts.

Student Identification Card Replacement Fee. All students who must obtain a replacement student identification card will be charged $3.

ACADEMIC REGULATIONS

Academic Advisement

When a student makes application for admission to the University, his eligibility for admission is determined by the Director of Admissions. The dean of the college in which he expects to study evaluates his previous course work, determines whether all courses that have been taken apply toward the degree the individual wishes to earn, and advises the applicant of his status. Any questions about courses and degrees should be addressed to the dean or, if possible, the student should visit with him or his representative.

When the student has been admitted, he is assigned by the dean to a faculty adviser in the student's major field of study who will help him to plan his curriculum and counsel him on other matters related to his academic pursuits at the University. If a student is not clear about which college he is in, he should check with the Office of Admissions. If he has not decided on a major field of study and desires counseling to help in choosing a major, he should visit a counselor in the Office of the Executive Director of Student Services.

After a student is enrolled and is pursuing a degree, if he wishes to change his major he must complete a form to that effect, have it endorsed by the dean of the college in which he has been studying and the dean of the college in which he desires to study, and file the form with the Registrar's Office. This normally occurs at the time of registration.

Students are encouraged to visit with their faculty advisers at any time they feel the need for it. They also are encouraged to talk with the instructors of their courses when they wish. All instructors have posted office hours. A student may make an appointment if he wishes but it is not necessary; he may visit the instructor without notice. In the interest of permitting the instructor to be of assistance to as many students as possible, students are encouraged to limit the length of office visits with instructors.

Dropping and Adding Courses

In courses taught on a conventional basis, a student may drop the course without permission anytime up to four weeks prior to the first day of final examination period. Courses may be dropped thereafter only in case of serious illness or other justifiable reason, and this requires the approval of the instructor of the course and the dean of the student's college. Normally no credit will be awarded if the course is dropped, but in certain courses, for example a course offered for variable credit, the instructor may award credit and a grade.

Courses taught on a conventional basis normally may not be added after the second week of classes. Students enrolling late in the course should not

expect special make-up assistance from the instructor.

In the case of courses taught on a self-paced instruction basis, the student is encouraged to enroll in them at regular registration time; however, he may add a course taught on SPI basis anytime during the semester, with the approval of the instructor of the course and the dean of the college in which the student is majoring. The student may drop an SPI course at any time by completing proper forms. On the other hand, if the student fails to apply himself and/or to make minimum progress, the instructor may drop the student from the course.

Withdrawals

If a student desires to withdraw from the University, he should secure the appropriate form from the Registrar's Office, complete it, and secure the endorsement of the dean of the college in which he is enrolled. In case of illness the student may have someone notify the dean who will arrange for the withdrawal.

Credit By Examination

A portion of the lower division requirements may be completed through the College Level Examination Program (CLEP) offered by the Educational Testing Service of Princeton, New Jersey. CLEP exams may be taken at several junior colleges, senior colleges, and universities in the state, but not at UT Permian. If a student wishes to complete a portion of the lower division requirements through CLEP, he must enroll in a college that offers them and sit for the examinations there. The credits for CLEP examinations will appear on the transcript of the college where he was enrolled. UT Permian will accept credits earned through CLEP on the same basis as any other credits transferred from another institution.

UT Permian does not award college credit for study through the United States Armed Forces Institute, non-credit military studies, and non-accredited institutions; however, if an accredited college or university has awarded credit for such study, UT Permian will accept those credits on the same basis as course work completed at that institution.

In some courses offered on a self-paced instruction basis, the student may earn such credit by examination by registering for a course and sitting immediately for as many of the quizzes in the course as he can pass. If he has mastered the course, he may test through all quizzes and the final examination in a brief period.

Class Schedules

Classes taught on a conventional basis usually meet twice per week. Most courses taught on a self-paced basis do not meet regularly except for a few meetings at the beginning of the term; however, some professors meet once per week with students who desire to meet as a group.

Most laboratory instruction is offered on a self-paced basis. Rather than a scheduled laboratory period, the student performs his laboratory exercises during most hours of the week at his own convenience. For each course, a schedule is posted when students may undertake the laboratory exercises, including those hours when instructors and/or laboratory assistants are available for assistance.

Class Attendance

It is assumed that by the time students enroll at the University they are able to organize their time and themselves to their studies. Class attendance is not required in most cases, but students are encouraged to attend classes regularly. In some courses, class participation and class activity constitute a part of the student's grade. It is the responsibility of the student to determine whether class attendance is required in each course and to see that he meets all course requirements.

Course Numbering System

000-099	Courses offered without credit and credit courses which may not be applied toward a degree
100-199	Freshman courses (not offered at UT Permian)
200-299	Sophomore courses (not offered at UT Permian)
300-399	Junior and senior courses not eligible for graduate credit
400-499	Senior courses acceptable for credit in some graduate programs, usually non-majors only
500-599	Fifth-year professional programs
600-699	Graduate courses, open only to graduate students

Course Load

The normal course load for an undergraduate student is 15 semester hours during the regular semester. A student who is progressing satisfactorily academically may take 18 credits, and if he is performing better than average he may, in some cases, take up to 21 credits. Only in rare cases will a student be

permitted to enroll for more than 21 credits in a semester.

During the summer session, undergraduates may enroll for seven credits in a six-week period. As a rule, in short courses of lesser duration, one may register for one credit per week of instruction.

The foregoing apply for conventionally taught courses. In courses offered on a self-paced instruction basis, additional credits may be taken, particularly when courses are involved for which a portion of the work has already been completed at the time of registration. This is subject to approval by the student's faculty adviser and the dean of his college.

Grading

Grades, often called marks, serve several purposes. They provide a basis for certifying completion of all degree requirements. They serve as predictors of future performance in graduate and professional study and certain other endeavors. Their most important purpose is to provide the student, in an abbreviated form, instructor's judgement of his academic achievement so that he can plan his own academic endeavors.

The grades approved for use at UT Permian are as follows:

A = Superior achievement
B = High Pass
C = Pass
D = Low Pass
F = Failure
I = Incomplete
NC = No credit
Q = Dropped the course
W = Withdrew from University
S = Satisfactory
U = Unsatisfactory
Z = Progress

Only grades A, B, C, D, and F are included in computing grade point average. In computing grade point average: A = 4; B = 3; C = 2; D = 1; F = 0.

An I is reported when the student has not met all requirements of the course by the end of the semester but the instructor considers the allowance of additional time to complete the course requirements to be justified. At the end of the next semester, if the requirements of the course have not been met, the I will become a permanent mark for the course and the student must register for the course again in order to receive a grade.

In self-paced instruction courses in which the student does not complete all requirements by the end of the semester in which he first registers, the instructor will report a mark of Z, and the student must register for that course at the beginning of the next semester if he is to receive a grade in it. If the student does not complete all requirements by the end of the next semester, a mark of Q automatically replaces the Z. In order to receive credit for a course in which the student has received a mark of Q, he must register again and complete

all requirements. The student must be registered in the course in the semester or term in which he receives a grade to replace a Z.

The marks S and U are used only for thesis research, senior seminars, courses for demonstration of proficiency in writing and conversation, certain non-degree courses, and in a limited number of other courses which may be approved from time to time by the Vice President for Academic Affairs.

In self-paced instruction courses, if the student fails to make satisfactory progress in the course, the instructor may submit a mark of Q at any time after appropriate warning.

Academic Progress

Full-time Students. A student shall be subject to academic probation if his cumulative grade point average (GPA) in conventional courses falls below 2.0 (C) and if he receives Qs for unsatisfactory progress in one-half or more of his self-paced instruction courses at the end of any semester. When this situation occurs, the student's status will be reviewed. The dean's office will notify the Registrar and the student as to future status and probation restrictions.

A student who is on academic probation will be removed from such probation at the conclusion of either semester in the long term or at the end of a summer session when he has achieved the required cumulative grade point average of 2.0. If the student fails to be removed from academic probation for two consecutive registrations, he will be dismissed from the University unless he can present evidence of extenuating circumstances. Students dismissed from the University for academic reasons may appeal that dismissal through the procedure outlined elsewhere.

A first academic dismissal is for one long session semester and any intervening summer session. A second academic dismissal is for one calendar year. A third academic dismissal is for three calendar years. For readmission in any one of these three situations the student must present evidence that he is likely to succeed in an academic program if readmitted and his readmission must be approved by the student's academic dean. A student who has been dismissed from the University and later readmitted will be on academic probation.

Part-time Students. Part-time students who earn less than a 2.0 GPA in the last 12 semester credits completed and have not made satisfactory progress in at least half of the SPI courses in which they have enrolled at the University shall be subject to academic probation. All other conditions relative to full-time students also apply to part-time students with one exception: If a part-time student on scholastic probation does not earn a 2.0 GPA in the subsequent 12 semester credit hours for which he registers, he will be subject to dismissal.

Second Bachelor's Degrees

An individual who already holds a bachelor's degree must complete at least 30 credits to receive a second bachelor's degree and, in the process, meet all requirements for the degree. One desiring to complete two bachelor's degrees concurrently must complete all requirements of each degree program including at least 30 credits more than required in one of the degree programs.

Correspondence Credit

Fifteen semester credits of correspondence study normally will be accepted from accredited colleges or universities, if appropriate to the curriculum. Under some circumstances, additional credits may be considered for acceptance.

Glossary

For purposes of computer processing, each discipline or area of study is assigned a letter abbreviation for identification consisting of either three or four letters, which are to be used in registration and elsewhere when the data are to be processed through the computer. The abbreviations are:

Discipline	Code
Accounting	ACCT
American Studies	AMST
Anthropology	ANTH
Art	ART
Aviation Management	AVMG
Behavioral Science	BVSC
Business Law	BLAW
Chemistry	CHEM
Communications	COM
Computer Science	CPSC
Creative Writing	CWRT
Decision Sciences	DSCI
Earth Science	ERSC
Economics	ECON
Engineering	ENGR
Finance	FIN
Government	GOVT
Great Books	GTBK

History	HIST
Humanities	HUM
Law Enforcement	LWEN
Law Enforcement Management	LEMG
Library Science	LBSC
Life Science	LFSC
Literature	LIT
Management	MNGT
Marketing	MRKT
Mass Communications	MCOM
Mathematics	MATH
Military Science	MIS
Music	MUS
Natural Science	NTSC
Pedagogical Studies	PED
Philosophy	PHIL
Physical Education and Health	PEH
Physics	PHYS
Psychology	PSYC
Sociology	SOC
Spanish	SPAN
Speech	SPCH
Theatre	THEA
University Courses	UNIV

DEGREE REQUIREMENTS

Minimum University requirements for the baccalaureate degree are at least 120 semester credits, of which at least 48 must be at the junior or senior level, and fulfillment of the requirements of the degree program in which a student desires to take the degree. The student must have a C average or better and no F grades in any credits presented for the degree.

A total of 30 credits must be completed at The University of Texas of the Permian Basin, of which six must be advanced credits in the student's major field. Of the last 30 credits at least 24 must be completed at UT Permian.

One may choose to graduate under the requirements set forth in the catalog at the time he enrolled or the requirements in effect at the time he graduates.

Government and History. Texas law requires that all students who receive a bachelor's degree from The University of Texas of the Permian Basin must

have received credit for six semester hours in American government, including Federal and Texas constitutions, and six semester hours of American history; three semester hours in the history of Texas may be substituted for three of the American history credits. These normally will have been completed at the lower division; however, the history requirement may be completed after enrolling in the University.

Graduate Record Examination. All candidates for a bachelor's degree must complete the Graduate Record Examination as a prerequisite for receipt of the degree. The results of that examination are used by the University in several ways, including an assessment of its own program and teaching effectiveness.

Writing and Conversation. Every student pursuing a bachelor's degree must demonstrate the ability to write the English language acceptably and to hold a conversation with another person on a one-to-one basis in English. These two competencies are crucial to success in almost every profession and to a satisfying personal life.

Senior Seminar. In his senior year each student must enroll in a University seminar in which he examines his responsibility to society, which he incurs because of his specialized educational qualifications. To discourage parochial thinking, students from several disciplines participate in the same seminar.

Applied Courses. Traditionally students in teacher education, engineering, business, and other professional fields have taken a substantial portion of their curriculum in the basic arts and sciences but students majoring in arts and sciences rarely have been required to study courses in the applied or professional fields. As a part of the degree program at UT Permian each student majoring in one of the basic arts or sciences disciplines must complete two courses in applied fields. This includes accountancy, management, law enforcement, engineering, and pedagogical studies. Both of the courses may not be in the same field, except for arts and sciences majors who are completing requirements for teacher certification.

Lifetime Sports. Every student is encouraged to enroll in lifetime sports; a maximum of two credits may be applied as electives toward requirements for a bachelor's degree.

Summary of University Requirements for Bachelor's Degree

1. Complete the total number of semester credits hours as established for the chosen degree program. The minimum number is at least 120 semester credit hours.
2. Complete at least 48 credits at the upper level.
3. Complete six credits in American government and six credits in American history.
4. Demonstrate proficiency in writing the English language.
5. Demonstrate proficiency in conversation in English.
6. Complete senior seminar.
7. Majors in basic arts and sciences disciplines must complete two courses in applied fields.
8. Maintain at least a C average in courses applicable toward degree.
9. Take Graduate Record Examination.
10. Complete at least 24 credits in major (more in some curricula), 18 in minor; at least 12 of major credits and six of minor credits must be at upper level; at least six credits in major must be taken at UT Permian.
11. Complete and file an application for graduation.

TEACHING EMPHASIZED

Effective teaching is emphasized at The University of Texas of the Permian Basin, combining the best of traditional or conventional teaching methods with recent educational innovations and technologies.

Innovative teaching approaches enable the student to spend more time with his professors in conversational settings than is possible in many universities.

Most of the courses are taught on a conventional basis, i.e., two class meetings per week of one and one-half hours each. A number of courses in each field are offered on a self-paced instruction (SPI) basis. Each full-time student is encouraged to arrange his schedule so that he may take at least one course on an SPI basis.

Self-Paced Instruction. Self-paced instruction is designed to permit the student to complete the course as rapidly as he is capable or to take more time if needed to master it. SPI usually requires no formal class meetings, although in

many courses the instructor meets once a week in a group with those students who wish to attend. Most student-instructor contact in SPI is on an individual basis. Students enrolled in an SPI course are expected to interact with the professor, either individually or in a group situation, at least once each week.

The student is provided with a course outline which includes all instructions for study, activities to complete, sources of information and other necessary instructions. He may visit the professor in his office as often as needed to discuss and clarify questions. When the student feels that he has learned a unit (sometimes called a module or mini-course), he takes a test, and if he passes it at the prescribed level, he proceeds to study the next unit. If he does not pass, he studies that unit again and takes another test, and so on until he passes it. In this way, the student passes each unit before going on to the next, so that when he completes all units and tests he should have mastered the course material.

Since a student does not need to attend classes in SPI courses, he may begin such a course at any time. Thus, in several places in this catalog where deadlines for adding or dropping courses are set, these refer to courses taught on a conventional basis and not to courses taught on an SPI basis. Most SPI courses may be started and finished at almost any time.

Contract Study. Several different types of independent study are available at the University. These normally are undertaken after one full semester or equivalent of study at the University and often after two semesters. These are referred to as contract study since, before the study can be undertaken, the student must write out his plan for the study showing the objectives, procedures to be used in the undertakings, means of evaluation, and other plans, and have the contract plan approved by the appropriate professor.

Contract study includes what at other institutions are called independent study, readings, special problems, library research, and certain other learning activities. It will occasionally be used for a formal course when that course is not offered in the University.

Experiential Learning. As a capstone to their education, candidates for the bachelor's degree are expected to complete a planned program of experiential learning, unless they have had appropriate work experience previously. Experiential learning, referred to in the College of Science and Engineering as "authentic involvement" and in the College of Arts and Education as "practicum," also is known elsewhere as internship, externship, field experience, cooperative education, and by other names. Student teaching is another example. Experiential learning normally occurs in the senior year, usually in the final semester, and provides the student an opportunity to apply his academic learning in a work situation under the supervision of a faculty member and the direction of a preceptor in the work situation. It requires that there be a pre-planned and written program of the experiences to be acquired and a procedure for evaluating these experiences. Typically, students enroll in

experiential learning for two to three credits, requiring one or two half days per week for one semester, or equivalent.

Other Teaching Approaches. The University offers seminars, occasionally a filmed course, a limited number of computer-assisted courses, and a few courses on an autotutorial basis. Special stress is placed on the use of the Instructional Media Services of the Learning Resources Center in all courses, those using newer teaching approaches as well as those taught on a conventional basis.

The audio cassette is used extensively by students at the University. Instructions for some laboratory exercises are provided on cassette; some lectures are available on cassette, as are certain study materials in music and others. Therefore, each student is expected to have his own portable cassette tape player with headphone or earplug attachment.

INTERDISCIPLINARY STUDIES

Considerable opportunity is available for students to build interdisciplinary programs. The requirement of a minor for the B.A. and B.S. degrees represents an attempt to broaden one's education, as does the requirement of courses in applied fields. Most interdisciplinary and cross-disciplinary studies are planned within the context of offerings in the respective disciplines. In addition, there are courses which are not peculiar to a particular discipline.

These courses are:

BVSC 059	**Development of Mental Proficiency**	**1-3**
GTBK 301, 302	**Great Books I, II**	**2,2**
UNIV 399.	**Senior Seminar**	**1**

Standard Numbers. Several numbers are standard among all disciplines in the University or in certain categories of discipline.

389 **Selected Topics** **1-3**
Undergraduate courses which will be offered only once or will be offered infrequently or which are beingdeveloped before a regular listing in the catalog. Offered in all disciplines.

391 **Contract Study** **1-3**
Students who are pursuing independent study or research as described in the Contract Study format. Offered in all disciplines.

392	**Practicum (College of Arts and Education)**	**1-3**
	The number under which students register in meeting the experiential learning requirement set forth in this catalog. Available in all disciplines in which a bachelor's degree is offered.	
398	**Senior Seminar**	**1**
	Seminar in the discipline or related disciplines. University-wide interdisciplinary seminars are listed as UNIV 399.	
489	**Selected Topics**	**1-3**
	Courses as described in 389 that are open for graduate credit in disciplines that do not offer the master's degree.	
491	**Contract Study**	**1-3**
	For study eligible for graduate credit in disciplines in which the master's degree is not offered.	
689	**Selected Topics**	**1-3**
	In disciplines in which the master's degree is offered.	
691	**Contract Study**	**1-3**
	In disciplines in which the master's degree is offered.	
692	**Experiential Learning**	**1-3**
	In disciplines in which the master's degree is offered. Referred to as "Authentic Involvement" in the College of Science and Engineering and as "Practicum" in the College of Arts and Education.	
698	**Master's Problem**	**1-3**
	To meet the research requirements in non-thesis master's degree programs.	
699	**Master's Thesis**	**1-6**

The student must have the approval of the responsible instructor before registering for courses 391, 392, 491, 691, 692, 698 and 699. In some cases, prior approval is required for others and will be so indicated in the schedule of classes.

EXTENSION CLASSES

The class day begins at 8:00 a.m. and ends at 9:45 p.m. and in some cases later. Unlike some universities in which courses offered after 5:00 p.m. are

provided through an extension division, at UT Permian courses offered in the late afternoon and evening are a part of the regular offerings of the University. Students enrolling in late afternoon and evening courses only register in the same manner as students who are taking daytime courses only. Many full-time students have a mixture of daytime and evening classes.

MILITARY STUDIES

U.S. Army ROTC

The University offers military study leading to a commission as a second lieutenant in the Unites States Army Reserve. Credit earned in military studies is considered academic credit, but it may not substitute for requirements for a degree.

The Department of the Army maintains a senior division ROTC unit at Texas Tech University for the purpose of providing qualified graduates a means of obtaining a commission in the U. S. Army. The ROTC program is open to both female and male students. Through a cross-enrollment agreement, this program is available as described below to The University of Texas of the Permian Basin students. Interested students should contact the Director of Admissions for details of enrollment procedures. No tuition is charged for enrollment in the program, and all books and uniforms are provided the student free of charge. UT Permian charges a recording fee of $5 for each military science course taken.

Program. Entrance into the courses entails signing an agreement with the Army to continue in the program and to accept a commission, if offered. Students receive a subsistence allowance of $100 per month during the school year and approximately $450 for attendance at one six-weeks summer camp at the end of the student's junior year. A student must pass prescribed physical and mental examinations to qualify for the course. Application for this program must be made as early as possible, preferably prior to enrollment for the junior year, since applicants without credit for prior military service or basic ROTC are required to attend summer camp preceding the junior year. Credit for prior military service or ROTC training may be granted.

Scholarships. Two year scholarships are available to students enrolled in the ROTC program. These scholarships pay all tuition fees, books, and laboratory fees, and other purely educational expenses for all courses in which the student is enrolled and pays a cash allowance of $100 per month for 10 months per year to the scholarship student. Selection for these scholarships is

competitive. Application is through the Professor of Military Science.

Flight Training. Qualified students interested in becoming Army aviators after commissioning may receive flight training at a selected flying school during their senior year. The cost of this training is paid by the Army. Upon acceptance into this program, the student must agree to apply for and accept flight training in the Army.

Extra-Curricular Activities. The Military Science Department sponsors a number of extra-curricular activities. There is a Ranger Detachment which strives to develop individual skills and small-unit teamwork. The unit provides the opportunity for students to apply their classroom training to realistic field situations. The training is designed to teach individual skills, develop individual confidence, and operate as a team. Membership is open to all ROTC Cadets and members of the Marine Platoon Leaders Course who otherwise meet University and unit standards.

The Military Science Department will sponsor other extra-curricular activities as the membership increases. Such activities will include a precision drill team, rifle and pistol teams and a military honor society. Additionally, the Department will sponsor intramural athletic teams.

Courses in Military Science

MIS 331 **Leadership, Military, Teaching and Branches of the Army** 3
Psychology of leadership and its application; methods and techniques of military instruction; mission and organization of combat branches of the U.S. Army. Prerequisite: Basic ROTC or prior military service.

MIS 322 **Small Unit Tactics and Communications** 2
Principles of offensive and defensive combat operations and their application in units of an Infantry Battalion; principles of communications and communications used within the battalion. Prerequisite: Same as MIS 331.

MIS 431 **Military Operations, Logistics and Administration** 3
Military staff organization and functions; supply and logistics principles; Army system of motor transportation and preventive maintenance; fundamentals of Army administration. Prerequisites: MIS 322, 331.

MIS 422 **Military Law, Role of the United States in World Affairs, and Service Orientation** 2
Fundamental concepts of military justice, its methods and purpose; effect of U.S. power and policy on present world situation; orientation on service life. Prerequisite: Same as MIS 431.

Marine Corps Programs

The Marine Corps Platoon Leaders Program is available at the University as is the Marine Woman Officers Candidate program. Applicants may sign up for the program during their sophomore year and attend two six-week summer camps at Quantico, Virginia, or they may sign up during their junior year and attend one ten-week summer camp at Quantico. Upon successful completion of the summer camps and graduation they will be commissioned Marine Corps 2nd Lieutenants. One hundred dollars a month will be paid candidates during the school year after successful completion of the first summer camp. The same provisions apply to the Woman Officers Candidates except that their summer camp is seven weeks. Men entering during their freshman year at other institutions can continue the program at UT Permian.

Student Services

In addition to formal courses and other academic experiences, the education and intellectual and personal development of students are further enhanced through a wide variety of out-of-class services. This aspect of the student's University experience is primarily the responsibility of the Division of Student Services. Following are the major areas of service of that Office and its components.

Financial Aid. The University has available a variety of scholarships, grants-in-aid, loans, federal work study programs, and other forms of institutional, private, state, and federal assistance to students.

The State of Texas provides tuition exemptions for State residents who meet certain qualifications. In addition, Texas tuition scholarships through the Connally-Carrillo Act provide assistance for needy students graduating in the upper 25 percent of their high school class since May of 1967. Various scholarships from other sources are also available.

The federal government provides funds through the Supplemental Education Opportunity Grant program to students from low-income families. Federally funded Law Enforcement Education Grants are available to in-service law enforcement officials.

Long term loans available include the National Direct Student Loans, Hinson-Hazlewood Loans for Texas residents, Federally Insured Loans and several private loan sources. Short term loans are available for students with emergency loan needs.

Detailed information concerning all financial assistance programs as well as applications may be obtained from the Financial Aid Office.

Housing for Students. The University does not own or operate any student housing facilities. Consequently there are no formal University housing regulations for students. Students who do not live at home will need to locate living accommodations in the surrounding communities. To assist students in locating off-campus housing the University provides a listing of householders in the community who have accommodations available for rent. Individuals who

desire such a listing or wish to obtain further information should contact the Director of Student Life.

Students should be aware that the University does not inspect or recommend any off-campus rental facilities; nor does it, in any way, become a party to a contractual agreement between a householder and a student.

Placement. The Placement Office provides the opportunity for a graduating student to come into contact with a potential employer in his career field. This Office has available information on and, in many cases, can arrange interviews with local, regional, and national companies.

Students who wish to utilize this service should plan to register with the Placement Office during the fall semester of the year they expect to graduate.

Student Health Insurance. Personal health is the responsibility of each individual student. All students who enter the University are encouraged to carry health and accident insurance. The University makes available at minimal cost a voluntary health and accident insurance program for students. Further information may be obtained by contacting the Student Life Office.

In light of the excellent community medical resources, the University does not provide on-campus medical services.

Student Conduct. The University considers all students to be adult; therefore, their behavior is subject to all expectations of The University of Texas Regents and UT Permian rules and regulations as well as local, state, and federal laws. The University reserves the right to restrict the enrollment of any student for disciplinary or academic reasons. Further information regarding the University's rules of conduct and due process procedures are provided in the student handbook published by the Student Life Office.

Student Activities. The University has developed student activities programs which provide an opportunity for the expression and development of student interest. Such programs can provide the major means through which students may give expression to their talents, develop their skills, and deepen relationships with other students and faculty. Further information regarding student organizations and activities can be obtained from the Student Life Office.

Orientation. An orientation program designed to acquaint the student with the University community is conducted at the beginning of each semester. Details concerning each semester's program are developed by the Student Life Office and mailed to incoming students about four weeks prior to their scheduled registration. This is a comprehensive program designed to acquaint students with faculty as well as with each other.

Veterans Affairs. The University participates in all aspects of the Veterans Administration programs available to returning veterans who enroll as students. Information concerning rights and privileges can be obtained by contacting the Financial Aid Office.

Part-time Employment. Students not receiving any type of financial aid through the University but who desire part-time employment should contact the Personnel Office of the University. This Office assists students in locating part-time jobs on campus.

Students who are receiving financial aid through the University should contact the Office of Financial Aids if they desire part-time employment.

Off-campus Employment. Students who are desirous of obtaining part-time employment off campus in the Midland-Odessa area should contact the Financial Aid Office. Local business and industrial employers keep in close touch with this Office to insure that students are informed of job openings in the community.

The Texas Rehabilitation Commission offers assistance for tuition and non-refundable fees to students who have certain disabling conditions provided their vocational objectives have been approved by a TRC Counselor. Examples of such conditions are orthopedic deformities, emotional disorders, diabetes, epilepsy, heart conditions, etc. Other services are also available to assist the handicapped student to become employable. Application for such service should be made at:

Texas Rehabilitation Commission
Odessa District Office
First National Bank Bldg., Suite 414
Odessa, Texas 79761

Intramural Sports. A variety of intramural sports programs are available in which individuals may participate. All organizations or individuals who wish to participate on either an individual or team basis may obtain information regarding the various sports by contacting the Director of Student Life in the Administration Building. Many of the programs are designed to supplement the lifetime sports program of the University.

University Bookstore. Textbooks and academic supplies may be purchased on campus at the University Bookstore. Costs of such items will depend upon the courses selected. In general, books and supplies for technical subjects are somewhat higher than those for many of the usual academic subjects.

The University Bookstore will purchase from students used textbooks which are in good condition provided that such textbooks continue in use by the various departments.

College of Arts and Education

The College of Arts and Education offers programs leading to the Bachelor of Arts degree in anthropology, art, creative writing, government, history, humanities, literature (options in American literature, American studies, English literature, and comparative literature) mass communications (journalism and radio-television), music, physical education and health, psychology, sociology, speech, Spanish, and theatre. Teacher education programs are offered in most of the arts and sciences teaching fields.

The Master of Arts is offered in physical education and health and in education, with options in early childhood education, elementary education, secondary education, counseling, and special education. A certification program in educational administration will be offered beginning in September, 1974.

The programs leading to the Bachelor of Arts degree are sufficiently flexible to permit students to plan concentrations in keeping with their educational needs, interests, and career plans. Within the context of each major a student may plan a program that will provide a broad liberal education, or may devise a program that will provide preparation for immediate entry into a career or graduate study.

DEGREE REQUIREMENTS

In addition to general University requirements for the Bachelor of Arts degree, as listed in the front of the catalog, the student must complete the College degree requirements given below.

The Bachelor of Arts degree in the College of Arts and Education requires a minimum of 120 credits, and in some individual programs more will be required. Except in those fields of study listed below, a minimum of 24 semester hours of coursework is required in each major, and the student must complete a minor of at least 18 semester credits. At least 12 credits in the major and six in the minor must be completed at the upper level. In the case of interdisciplinary programs, specifically American studies and humanities, the major and minor requirements do not apply; see the appropriate sections for specific requirements

for those programs. Students majoring in music, art, and theatre will complete a major and a minor as described above, while students preparing for teacher certification will be required to complete additional credits in the major field but are not required to complete a minor.

Lower Division Requirements

The Core Curriculum set forth by the Coordinating Board, Texas College and University System, will be accepted in its entirety and applied toward appropriate degrees, but it is not necessary that the student complete this exact list of courses. For example, except for majors in Spanish, the study of a foreign language is not required for the Bachelor of Arts or the Bachelor of Science degree, although it is recommended for certain majors.

In many cases, because of special interest or career plans, the individual would be well advised to complete four semesters of one foreign language; in other cases, however, the student would be wiser to use the time that might be spent on a foreign language on some other course or courses which will fit his particular needs better. Following is a list of required and recommended courses for students who plan to transfer to the University and to pursue the Bachelor of Arts degree in the College of Arts and Education.

	Required	Recommended
	(Semester Hours)	
English Composition	6	6
Literature	6	6
Government, American	6	6
History, American	6	6
Mathematics	3	6
Biological Science	3	6
Physical Science	3	6
Fine Arts	-	3
Psychology	-	3
Sociology or Anthropology	-	3
Economics	-	3
Speech	-	3
Philosophy	-	3

It is to the student's advantage to complete all of the required courses before entering, but it is not required. If he has completed 60 credits but still lacks some of the required courses, he may be admitted to the University and complete those courses afterward, either at the University or by concurrent enrollment at a community college.

The courses in government and history listed above are required by state law. A course in philosophy may be substituted for one of the literature courses. Students planning to study art, music, or theatre and who plan the teacher preparation options may, in some cases, make course substitutions for the requirements in mathematics and natural sciences. In addition to the foregoing, courses should be taken in the major and minor fields, in most cases no more than nine credits each, although as many as 12 credits in each may be accepted.

If a student finds, after enrolling at the University, that he requires a freshman or sophomore course, it will be possible for him to take that course at a nearby junior college.

PROGRAMS OF STUDY

The 21 degree programs in the College of Arts and Education include those in the liberal arts, the social and behavioral sciences, and the fine arts. In addition, programs of teacher education are available at both the undergraduate and graduate levels, but not as separate majors. Undergraduate students preparing to qualify for teacher certification at any level are required to complete an academic major, while graduate students may earn the Master of Arts degree in the following fields: counseling, early childhood education, elementary education, secondary education, special education, and physical education and health.

American Studies

The American studies major is concerned with the development of American civilization from the vantage point of several disciplines. Its purpose is to enable students to achieve a systematic understanding of American society, thought, and culture in considerable breadth but also with reasonable depth. Coursework is concentrated in history and literature, but may also include study of other fields in the social sciences, the fine arts, and the humanities. There is no minor.

American studies majors are not prepared for specific vocations, but with their understanding of American development they can reasonably look forward to careers in writing, government, education, or similar fields, or they are prepared to continue their studies at the graduate level in American studies or related disciplines.

Detailed programs for each individual student must normally have the approval in advance of a faculty adviser. As a minimum, each student's program should include from nine to 12 semester hours of upper-level credit in American history, nine to 12 semester hours of upper-level credit in American literature,

and six hours of upper-level credit in appropriate coursework in at least two of the following fields: anthropology, art, creative writing, economics, mass communications, music, government, philosophy, sociology, and theatre.

In addition, the following course is required of all majors and is normally taken in the senior year:

AMST 425 Colloquium in American Studies 3
A multidisciplinary approach to a topic of major concern in the development of American civilization.

Anthropology

Anthropology involves the study of man in his society within a historical and comparative context. There are five generally recognized fields of study within anthropology. Social anthropology is concerned with the structure and organization of society and also with social behavior, frequently viewed in the historical context, but social anthropologists are increasingly concerning themselves with contemporary social behavior. Ethnology is concerned with man's culture, its history, growth, and change. Archaeology is an approach to understanding man's social and cultural systems through reconstruction or unearthing of man's remains. Physical anthropology involves the study of fossil evidence for human evolution, the behavior of primates, and genetic characteristics of man. Linguistics deals with the properties of language and its contribution to the understanding of man.

The study of anthropology prepares individuals for careers in medicine, government service, education, and others in which an understanding of social relationships among men is useful. The Bachelor of Arts degree program in anthropology is intended to provide broad preparation in anthropology with special emphasis on social and cultural anthropology.

A major in anthropology serves students with at least three different orientations. The first group includes individuals who desire a broad liberal education but wish more than elementary understanding of anthropology. The second group consists of those individuals who wish to become social studies teachers in the secondary school or teachers in the elementary school and have special interest in anthropology. Finally, programs can be devised for those who wish to become professional anthropologists, including further study of anthropology in graduate schools. Students in the first two categories normally take a minimum of 24 credits and a maximum of 32 credits in anthropology. Those in the last category typically take considerably more than the minimum number of credits in anthropology. Most of the students majoring in anthropology minor in sociology, although some choose to minor in psychology, life science, art, or even other less directly related disciplines.

Before arriving at the University, students should have completed at the lower division an introductory course in anthropology. Majors in anthropology should complete a course each in social anthropology and in physical

anthropology. The remainder of the courses in the major are selected by the student and his adviser within the context of his interests and/or career plans.

Courses in Anthropology

ANTH 301 **Man and Culture** 3
An introduction to the basic concepts of culture and physical anthropology.

ANTH 311 **Social Anthropology** . 3
Comparative analysis of social structure. Emphasis is on the kinship, political and religious institutions of primitive and peasant societies, and the functions served by these institutions.

ANTH 315 **Physical Anthropology** 3
Introduction to the evolution of human behavior and culture with particular attention to the somatic and technological foundations of culture. The biological development of man is related to important developments in technology and social organization.

ANTH 344 **Language and Culture** 3
A study of language and its correlations with other aspects of culture. Consideration of the nature and definition of language, cultural focus and semantic field, world view, and a study of language variation as it is related to other social behavior.

ANTH 361 **Ethnic Groups of the Southwest** 3
A study of the Indian, Spanish, Mexican, and Anglo cultural traditions including the economic, social, and religious institutions of these southwestern United States groups.

ANTH 375 **Linguistic Anthropology** 3
Principles and methods in the description of the significant sounds and the meaningful units in the structure of languages.

ANTH 385 **North American Indian Ethnography** 3
A comparative study of Indian societies of North America including prehistory, culture areas, linguistic classification, and contemporary cultural developments.

ANTH 386 **Peoples of Mexico** 3
The cultural background and present-day economic, social, and religious life of Indians and Mestizo groups in rural Mexico; the processes of acculturation and current trends in cultural development.

ANTH 416 **Archeology of Meso-America** 3
The evolution of Mexican and Mayan civilizations from the Early Hunters through the Post-Classic Period. Emphasis will be on the reconstruction of prehistoric civilizations from archeologic evidence. Prerequisite: ANTH 301, or equivalent, or consent of instructor.

ANTH 417 **Archeology of the Southwest** 3
The development and characteristics of prehistoric Indian societies is considered with particular attention to the Mongolian, Hohokam, Anasazi and Casa Grande areas. Ties of the area to nuclear Meso-America will be discussed.

ANTH 427 **Trends in the History of Anthropology** 3
A historical treatment of the chief theoretical contributions to anthropology with a major emphasis on cultural anthropology.

ANTH 437 **Urban Anthropology** 3
Cross cultural survey of the development of urban settlements from the agricultural civilizations to present-day industrial urban society.

ANTH 485 **Peoples and Cultures of Africa** 3
A study of the peoples and cultures of Africa south of the Sahara to include prehistory, culture area and linguistic classifications, the study of selected cultures and contemporary society.

Art

The study of art is a study of man as an image and form maker. From the earliest times man has made visual symbols which affirm the need for aesthetic communication between the creator and the spectator. The understanding and practice of art as communication is the core of the UT Permian art program.

A non-specialized degree program in art is offered which concentrates on developing in students a measure of proficiency in the basic art forms, built on a foundation of theoretical training in art. This training takes place in an "Open Studio" setting which allows the student to develop his own concept of art and to bring it to fruition by moving freely from one studio area to another at his own pace.

The major in art requires a minimum of 24 semester credits in art and a minor of 18 credits in another discipline; at least 12 of major credits and six of minor credits must be at the upper level and at least six credits of the major must be taken at UT Permian.

The degree Bachelor of Arts is offered in art. However, there is sufficient flexibility to enable students to plan programs equivalent to the B.F.A. at other

institutions. In addition, those students planning for careers in teaching can complete a program in art which essentially parallels a bachelor's degree in art education.

Art 301, "Concepts of Art," is required of all entering students.

Courses in Art

ART 301 **Concepts of Art** 3
At the completion of this course the student will be conversant with the major working concepts used by artists through the ages. The student will conceive his own concept of art to be used in all studio classes for the academic year.

ART 303 **The Human Figure** 3
At the completion of this course the student will have experience in drawing the human figure in the following mini courses: the skeleton, muscles, head, the total figure, and the figure in motion with a variety of media.

ART 311 **Painting Techniques–Water** 1-6
At the completion of this course the student will have experience with water soluble media including transparent watercolor, gouache, acrylics, mixed media and egg tempera.

ART 313 **Painting Techniques–Oils** 1-6
At the completion of this course the student will have experience in the preparation of a ground and support for a painting, the use of color and paint handling (including glazes), the chemistry of paint, and the use of the encaustic medium.

ART 314, 315 **Anglo-American Images–History** 3,3
A lecture course, using visual aids, studying the artifacts, painting, sculpture and architecture resulting from the Anglo-American presence on the North American continent from 1620-1940.

ART 320 **Graphic Art I–Intaglio** 1-6
At the completion of this course the student will be familiar with plate preparation, the use of grounds and mordants, the use of the press, and the preparation of inks. The student will have experience in the following printing processes: drypoint, etching, aquatint, color printing, and collagraph.

ART 322 **Form Design I–Ceramics** 1-6
An exploration of form design in ceramics utilizing slab, coil, and wheel-thrown methods. Emphasis is placed on developing creative approaches.

ART 323 **Graphic Art II–Relief** **1-6**
At the completion of this course the student will be skilled in the following processes: woodcut, wood engraving, and color printing.

ART 329 **Form Design II–Materials** **1-6**
At the completion of this course the student will be skilled in the following processes: direct building form, wood carving, stone carving, and bronze casting.

ART 372 **Elementary Art Education** **3**
At the completion of this course the student will be prepared to teach art to children through the following investigations: the characteristics and stages of creative development in child art; the procedures and methodology for stimulating, selecting, and motivating elementary art experiences.

ART 373 **Secondary Art Education** **3**
At the completion of this course the student will be prepared to teach art at the secondary level. More specifically the student will study and investigate the procedures and methodology for selecting, stimulating, and motivating art instruction.

ART 420 **Graphic Art III–Planographic** **1-6**
At the completion of this course the student will be skilled in the following processes: preparation of inks, printing the black and white lithograph, and color separation.

ART 422 **Form Design III–Glass** **1-6**
At the completion of this course the student will be skilled in the following processes: color mixing, forming methods, introduction to glass blowing.

ART 423 **Graphic Art IV–Serigraphy** **1-6**
At the completion of this course the student will be skilled in the following processes: preparation of the silk screen, the tusche method, photo-silk screen, and cut paper frisket.

Creative Writing

The Bachelor of Arts degree program in creative writing is designed for students who plan a career in writing and for those who consider writing a desirable preparation for other fields. Writing courses allow a student to concentrate his work in the genre he chooses–fiction, poetry, drama, or non-fiction. Literature and mass communications offerings also provide courses that may be included in the writing major.

The creative writing program, according to the specialty selected, will prepare the student for careers in fiction writing, magazine editing and publishing, book publishing, advertising, teaching, and for writing positions in industry, government, the military services, and institutions of higher education. Creative writing courses are open to non-writing majors and should prove valuable to all students interested in learning to write well.

The minimum requirement of 24 credits in the major field may consist solely of creative writing or may be a combination of not less than 12 credits in creative writing and at least 12 credits in literature and/or mass communications. The minor can be a field outside of the literary sphere such as psychology, sociology, or the behavioral sciences. A student interested in technical writing might minor in engineering or management; a fiction writer might choose history or literature.

All majors in creative writing are required to complete CRWT 305, 352, and 490, plus six credits in literature.

Courses in Creative Writing

CRWT 305 **Advanced Exposition** 3
This course emphasizes essential aspects of language that help a student write clearly. The student practices writing information and opinion papers to develop effective expression.

CRWT 315 **The Short Story** 3
The student will have practice in writing and revising story drafts. Class discussion and conferences with the instructor help guide the student.

CRWT 325 **Poetry** 3
Verse writing and discussion of student and other works are essential parts of the course. The student will experiment in a variety of verse forms.

CRWT 335 **Television Drama** 3
The student gains experience in the writing and analysis of television drama. The course includes an analysis of artistic norms, values, and objectives of contemporary television programs.

CRWT 337 **Short Drama** 3
This course combines the study and practice of writing plays. The student will write two short plays and analyze student and other works.

CRWT 352 **Fiction** 3
Through individual conferences with the instructor, class discussions of short fiction, and outside reading, the student will develop insights into language and have practice in writing fiction.

CRWT 362 **Writing Non-Fiction** 3
This course is devoted exclusively to the development of writing skills that will help the student more exactly express his ideas in non-fiction. The student will write articles or essays in the discipline of his choice.

CRWT 490 **Writing Tutorial** 3
This advanced writing course allows the student to further develop skills in the genre of his choice–whether fiction, poetry, or drama.

Government

The Bachelor of Arts degree program in government is oriented primarily toward the study of American government and politics and secondarily toward comparative government, with supporting study in political theory.

A major in government is ideal for students with many different objectives. The student who desires a general education and is particularly interested in the political and social sciences will find the study of government rewarding. In addition, a wide variety of career opportunities is open to students who major in government, including the United States Foreign Service, specialized work in foreign countries, foundations, the federal government and private organizations, city management, and other types of public administration and public service, plus positions less directly related to government. Pre-law students find the study of government appropriate preparation for law school. A major in government is suitable for students who plan to teach government or social studies in the secondary school and also for those preparing to teach in elementary schools.

In addition to lower division requirements set forth elsewhere in this catalog, including particularly two courses in American government, a major in government at the University should include at the upper level at least one course in American government, one course in comparative government, and one in political theory. Within that framework the student and his faculty adviser plan a program in keeping with the student's interest and career plans.

GOVT 311 **State and Local Government** 3
A study of selected state constitutions, legislatures, governors, courts, counties, municipalities, special districts, and intergovernmental relationships.

GOVT 313 **American Parties and Politics** 3
The history, role, and function of parties in the American political process.

GOVT 315 **The Legislative Process in the United States** 3
Organization and procedure of American legislative bodies; analysis of public and private influences upon public policy formulation.

GOVT 321 **Introduction to Comparative Government** 3
An examination of principles of government, including the concept of the nation state, sovereignty and international relations, based on an examination of governments of selected nations of the world.

GOVT 331 **Modern Political Systems** 3
A comparative analysis of the structure and processes of politics in selected political systems.

GOVT 417 **Interest Groups in the American Political Process** 3
The nature of groups in the United States which are able to exert sufficient pressure on the governmental process to influence to an appreciable state the outcomes of that process.

GOVT 423 **Governments and Politics of Latin America** 3
An examination of the political processes, organizations and functions which govern selected nations of Latin America.

GOVT 427 **International Relations** 3
This course examines the enduring factors that affect interactions between nation states and compares diverse theories and models of analysis. The predictive values of theories and models are considered.

GOVT 431 **American Political Thought** 3
An examination of the major American political theories and the major trends in American political thought, both as they are related to the socio-economic and political development of the nation and as they have affected that development.

GOVT 433 **Systematic Political Theory** 3
A detailed consideration of the contemporary problems of normative political thought. Modern moral philosophy, the nature of laws, the limits of behavioralism, and the fact/value dichotomy will be explored as they relate to the formulation of political values.

GOVT 435 **20th Century Political Thought** 3
An examination of the development, operation, and consequences of the modern ideologies of Communism, Fascism, Democracy, Liberalism, and Radicalism.

GOVT 441 **Western Political Tradition** 3
The origin, derivation, and application of principles of government from their earliest appearance in Western thought to their effect on recent government. Major figures will be studied in detail.

GOVT 443 **American Foreign Policy** 3
The origin, conduct, and application of American foreign policy in world affairs.

History

The study of history represents man's attempt to understand the past, not only what happened but why it happened. It has been said that he who ignores history is doomed to repeat the mistakes of the past. Thus, the study of history leads to an understanding of man's present behavior, his customs and traditions, and also provides a basis for predicting the future.

History is an ideal major for the individual who prefers a broad liberal arts education rather than professional preparation. It also provides good preparation for a number of professional and career goals in government, industry, writing, and other fields. History is a logical major not only for those preparing to teach history or social studies in the secondary schools, but for many who are preparing for teaching at the elementary or kindergarten level.

The program in history provides breadth of preparation typical of baccalaureate degree programs in history elsewhere but at the same time will allow flexibility in order that a student may build emphasis in an area or areas of history of special interest to him. The University currently has special strengths in history of the American West and in Latin American history.

Students in the teacher education option will take a minimum of 24 credits in history and the required pedagogical studies courses. Students in the non-teaching option will be expected to complete additional courses in history leading to more specialized preparation.

Students should have completed two courses in American history before enrolling in the University. Additional requirements include a course in history of the American West and a course in Latin American history preferably at the upper level. Other courses are selected by the student and his adviser in the context of his background or preparation, interests, needs, and professional plans, but at least one must be taught in a seminar format.

Courses in History

HIST 301 **The Development of Modern Texas** 3
A discussion-oriented examination of the political, social, economic, and historical development of modern Texas. Class exercises include field work in state and local history.

HIST 303, 304 **History of the American West** 3,3
A lecture-discussion study of the settlement and development of the American West and the impact of the West on the history of the United States.

HIST 305 **History of the Southwestern U.S.** 3
A self-paced course which emphasizes the development of analytical and writing skills through the study of primary source materials which relate to regional history and through training and practice in oral history techniques.

HIST 311 **History of Mexico** 3
The conquest and expansion of the Spanish in North America; the social, economic, and political history of Mexico since independence.

HIST 313, 314 **History of South America** 3,3
The political, social, cultural, and economic development of South America from the period of the Conquest to the present. The course divides at 1810.

HIST 315 **History of Central America** 3
The history of Central American Republics, the Caribbean cultural area from the Colonial Period.

HIST 321, 322 **History of Western Europe** **3,3**
Major social, economic, political, and intellectual developments in Western Europe from the Middle Ages to the present.

HIST 331 **The United States in the 19th Century** **3**
Jacksonian Democracy, sectionalism, the Civil War and Reconstruction, industrial development, agrarian radicalism.

HIST 333, 334 **The United States in the 20th Century** **3**
Examination of political, economic, and social domestic affairs contributing to the 20th Century development of industrial, urban, and rural America.

HIST 335 **American Colonial and Early National History** **3**
A lecture-discussion course which emphasizes the development of analytical and writing skills through the study of primary source materials which relate to the political ideas and institutions of America before 1820. Special attention is given to the American Revolution.

HIST 401 **The Frontier in American History** **3**
A seminar course in which students analyze the historical literature relating to Frederick Jackson Turner's frontier thesis and apply their findings to research projects in local history.

HIST 437 **The Civil War and Reconstruction** **3**
A lecture-discussion course in which the history of the South from 1850 to 1876 is approached through analysis of primary source materials and scrutiny of selected scholarly articles and monographs.

HIST 451 **The History of American Thought** **3**
Puritan theology, the American enlightenment, transcendentalism, naturalism and social Darwinism, pragmatism and experimentalism, and ideological pluralism.

HIST 461, 462 **United States Foreign Relations** **3,3**
Examination of foreign policy and relations involved in the development of America from the Revolution through World War I and from 1920 to the present.

HIST 481 **Ethnic Minorities in the United States** **3**
A study of the contributions of the various ethnic minorities to the development of American political and cultural traditions and institutions.

Humanities

The program leading to the B.A. degree in humanities is multidisciplinary and is designed for the individual who desires a liberal arts education but does not wish to specialize. Within broad limits, each program is individually designed by the student and his adviser. The program includes primarily humanistic studies but requires that the individual become acquainted with several other disciplines.

The humanities major is considered a wise choice for students who are nonvocationally oriented or who are planning postgraduate study of law, theology, the liberal arts, and certain other fields.

The B.A. degree in humanities requires 120 semester hours of credit, including the following:

1. 9-15 credits in each of two of the following: American studies, creative writing, literature, mass communications, and speech.
2. 9-12 credits in one of the following: history, Spanish language (or other foreign language) and literature, or philosophy.
3. At least six credits in each of two of the following: music, art, theatre, dance.
4. At least six credits in each of two of the following: anthropology, sociology, economics, government, pedagogical studies, psychology.

The above may include courses completed in meeting the lower division requirements; however, one-half of each group must be at the upper level. Additional courses included shall be determined in consultation with the adviser following discussions concerning the student's educational background, plans, professional goals and needs, provided that all of the courses included in the planned program for the humanities have intellectual coherence.

Literature

The goal of the literature program is to enable the student to develop the professional skills of the literary critic, scholar, and teacher: namely, to read intelligently and imaginatively and to write and converse about literature knowledgeably and articulately.

The literature program offers coursework in four fields of specialization: American, British and comparative literature, and Spanish. Literary studies also figure prominently in the interdisciplinary degree programs of American studies and humanities and in the creative writing program (see separate descriptions for these programs and for Spanish).

The student who selects literature as a major field of study must complete 24 semester hours of credit in literature courses, in addition to the six hours of

English usually taken during the freshman year, of which at least 12 hours must be in upper-division courses.

The 24 hours should be distributed as follows: 12 hours in one of the specialty fields, American, British, or world literature, including a three-hour survey course and six hours in 400-level courses; six hours in a second specialty field; and six elective hours in literature and creative writing courses. Students are encouraged to take at least three hours in creative writing.

The minor consists of 18 semester hours of credit in literature courses. Six hours must be in upper-division courses. As many as six hours of freshman English and three hours of creative writing may be applied toward the minor. Students who seek certification to teach in the secondary schools and who designate literature as a second teaching field are urged to fulfill all the requirements for the major in literature.

Courses in Literature

LIT 301, 302 **History of American Literature** 3,3
A chronological examination of writers, works and movements (fiction, non-fiction, poetry) from beginnings to the present. The course divides at 1865.

LIT 321, 322 **History of British Literature** 3,3
A chronological study of major works in English literature, beginning with Old English, and an examination of the historical development of the literature.

LIT 341, 342 **History of World Literature** 3,3
Reading and critical discussion of masterpieces of world literature in translation. The course divides at the Renaissance.

LIT 351 **The Short Story** 3
Reading and critical analysis of British, European and American short fiction, with emphasis on generic study and textual explication.

LIT 361 **Literary Criticism** 3
A study of major approaches to literary texts: historical, sociological, psychological, biographical, anthropological, linguistic, and aesthetic.

LIT 371, 372 **The English Language** 3,3
A problem-solving course in applied English linguistics including the nature of language; historical development of English; interrelationships among linguistic, social, and psychological systems; and problem-solving methodologies.

LIT 401, 402 **American Poetry** 3,3
Discussion-oriented study of American poetry: colonial, romantic and later 19th Century, and an analysis of the theories and practice of major 20th Century poets. The course divides at 1900.

LIT 405 **American Drama** 3
A study of the historical development of American drama, types of dramatic literature, and masterpieces in American drama.

LIT 411, 412 **American Fiction** 3,3
A discussion-oriented examination of masterpieces in American prose fiction, beginnings to late 19th Century and late 19th Century to the present.

LIT 421, 422 **British Poetry** 3,3
A consideration of poetry as a literary genre through the study of major works of British poetry from the Middle Ages through the present. The course divides at 1800.

LIT 425, 426 **British Drama** 3,3
A consideration of drama as a literary genre through the study of major works of British drama from the Middle Ages through the present. The course divides at 1800.

LIT 431, 432 **British Fiction** 3,3
A study of the novel and short story as literary genres through an examination of major works of British prose fiction from beginnings in the Renaissance to the present. The course divides in the Victorian Period.

LIT 441, 442 **World Poetry** 3,3
Reading and critical discussion of major works of world poetry in translation, from the classical through the Renaissance to the present. While primary emphasis is on the poetry of Western Europe, that of other areas may be considered.

LIT 445, 446 **World Drama** 3,3
Reading and critical discussion of world drama, from the classical to the present, with special emphasis on major periods, national developments, dramatic types and techniques.

LIT 451, 452 **World Fiction** 3,3
A study of the novella and novel from their origins to the present. Authors studied include major writers from continental Europe, Africa, Asia, and Latin America.

LIT 459 **Studies in Literature** **1-3**
A course focusing on specific periods, themes, authors, or literary types. Contents will vary according to the interests, needs, and capabilities of the instructor and students.

LIT 469 **Studies in a Major Author** **1-3**
Intensive study of the works of a major author in American, British, or world literature.

Mass Communications

The Bachelor of Arts degree program in mass communications is designed to acquaint the student with the wide range of career opportunities in mass communications, to provide basic understanding of the concepts and principles common to all aspects of mass communications, and finally to provide specialized preparation in at least one field. This preparation is oriented toward preparing the individual primarily to work in either electronic (radio/TV) or print journalism. Thus, the curriculum in mass communications encompasses study which leads to degrees in journalism and in radio/television at other institutions, plus study of the broad field of mass communications.

Prior to enrolling at the University, students should have had some introductory coursework in journalism, radio/television, or mass communications. Prior experience in one of these fields will also be useful; however, such experience is not a prerequisite to study.

The Bachelor of Arts degree program in mass communications prepares individuals for careers in newspaper reporting and editing magazines; radio and television reporting, production, and management; as well as public relations, advertising, and specialized communications professions.

The B.A. degree in mass communications requires 24 credits in the major field, 12 of which must be upper level, plus a minor in a supporting field of at least 18 credits of which six must be at the upper level. Majors in mass communications are encouraged to minor in subject matter fields that will better qualify them to work in the mass communications industry. Minors in government, management, and history are among the more commonly chosen fields, while individuals planning to become specialized writers may choose to minor in technical or scientific fields.

Students who wish to prepare for teaching in the public schools should complete requirements described in the section under Teacher Education. Students desiring to prepare for careers in advertising will want to include a substantial percentage of their preparation in the College of Management.

The following course sequences are required of all majors:

MCOM 303 Reporting
MCOM 313 Advanced Reporting

Print Majors

MCOM 307 Mass Communications Lab
MCOM 392 Internship

Electronic Majors

MCOM 341 Radio/TV Announcing
MCOM 392 Internship

Recommended:

Print Majors

MCOM 318 Editing and Makeup
MCOM 471 Mass Media and Society
MCOM 405 Magazine Article Writing

Electronic Majors

MCOM 342 Radio/TV Programming
MCOM 344 Television Production
MCOM 345 Television Direction

Courses in Mass Communications

MCOM 303 **Reporting** 3
History of the press, libel, journalistic ethics, copy editing, writing news and feature stories.

MCOM 305 **Communications Law** 3
Legal aspects of the rights and responsibilities of the press, radio and television; basic features of the law of libel, privilege, copyright, access to information; background of court reporting.

MCOM 306 **History of Communications** 3
American journalism from its English and colonial origins to the present day. Development and influence of newspapers, magazines, radio, television and news gathering agencies.

MCOM 307 **Mass Communications Laboratory** 1-3
Students will work in print journalism laboratory – editing, reporting, photojournalism, writing headlines, and making up pages.

MCOM 308 **News Problems** 3
Trends and problems of the news media, emphasizing editorial decisions in the processing of the news. Prerequisite: eight credits in mass communications or approval of the instructor.

MCOM 313 **Advanced Reporting** 3
Students will cover all phases of journalistic writing–governmental agencies, schools, courthouses, public affairs, sports, community and school events, films, music, art, interviews with prominent personalities, and speeches, as well as involvement in production of the University newspaper.

MCOM 315 **Public Affairs Reporting** 3
Writing the news concerning agencies that deal with local, state, and federal government.

MCOM 318 **Editing and Makeup** 3
Copyreading and headline writing; principles of typography and make-up, with laboratory practice.

MCOM 341 **Radio/Television Announcing** 3
Techniques and practice of writing, editing, and announcing press association and local news copy for radio and television news broadcasts, with laboratory practice in preparation of news programs.

MCOM 342 **Radio/Television Programming** 3
Radio and television programming patterns, regulations pertaining to broadcasting and responsibilities of broadcasters.

MCOM 344 **Television Production** 3
Planning, staging, and presentation of television programs.

MCOM 345 **Television Direction** 3
Directing television programs. Prerequisite: MCOM 342.

MCOM 405 **Magazine Article Writing** 3
Student will write a magazine article and attempt to sell it to one of the thousands of markets available.

MCOM 471 **Mass Media and Society** 3
A study of the principles of behavior modification applied to the media—radio, television, newspapers, magazines, books, etc.

Music

Degree programs in music have been designed to meet a number of professional and academic needs. Each program is characterized by a core of music theory and literature competencies, following which courses are included to fulfill student goals and complete requirements for the Bachelor of Arts degree.

Students entering music study at UT Permian should have completed two years of courses in music theory and two years of applied music at the freshman and sophomore level. Class instruments and voice are not required except in the case of non-pianists completing piano proficiency courses. It is essential that students finish their English, history, government and science requirements before entering the University.

Liberal Arts Degree. The liberal arts program as an alternate route to the Bachelor of Arts degree in music provides the student with the opportunity to

concentrate in music while pursuing a broad program of studies. Stress is placed on elective courses in the humanities and social sciences, and the exact direction the student takes in selecting courses outside music will depend on his specific interests.

The complete upper-level degree program must include 12 semester hours of music courses drawn from MUS 305, 306, 307, and 319; six hours of independent study of interdisciplinary topics, e.g., "Music and Anthropology"; six hours of art and/or theatre; and six hours of advanced history. Students are encouraged to complete their degree programs with credits broadly distributed in the areas of anthropology, sociology, psychology, language, literature, and creative writing, and in the applied sciences.

Since there is less concentration in music performance and theory in the liberal arts option of the B.A., students may find that they need additional coursework in music for admission to graduate music programs.

Teacher Preparation. Within the B.A. in music degree, there are three options leading to state certification for public school teaching. These programs emphasize, respectively, (1) instrumental music teaching, (2) vocal music teaching, and (3) elementary school music.

Instrumental Music (all-level certification)–The degree option in instrumental music education is designed to develop competencies necessary for the successful teaching of instrumental music at all levels in the public schools. Students considering careers as band or orchestra directors should register in this curriculum. Required music courses: MUS 301, 303, 305, 306, 307, 401, and 420.

Vocal Music (all-level certification)–The emphasis in vocal music education is designed to prepare students for careers in all levels of choral conducting, junior high school general music, and elementary school vocal music. Required music courses: MUS 301, 303, 305, 306, 308, 325, and 402.

Elementary School Music (elementary certification)–Students desiring preparation as elementary school music specialists shall receive an elementary teaching certificate. The course of study leading to this degree option emphasizes teaching competencies for children in grades K through eight. Required music courses: MUS 303 (keyboard or voice), 306 and 325.

Courses in Music

MUS 301 **Beginning Conducting** 2
Designed for music majors with no previous conducting experience. Includes technique of downbeat, cueing, release through all meters, and rhythmic patterns.

MUS 302 **Intermediate Conducting** 2
Problems of the conductor in solving interpretive techniques, ensemble preparation, and translation of choral and instrumental scores to performance. Prerequisite: MUS 301 or equivalent.

MUS 303 **Applied Music** 2
Junior-level individual studio instruction in music major's principle instrument or voice. One hour lesson per week and seven hours practice required. Two years previous college applied music study required for enrollment.

MUS 305, 306 **Historical Survey of Form in Music** 3,3
Survey of the development of styles and forms in the musical periods from 1300 through the Rococo, Classic, Romantic, Impressionistic, and early and middle 20th Century.

MUS 307 **Orchestration** 2
Scoring music for standard large orchestral instrumentations. Practice in score reading with frequent periods of listening to orchestral recordings augmenting the written work of the course.

MUS 308 **Choral Arranging** 2
Techniques of writing, arranging, and editing choral music for a variety of performance media, with special emphasis on public school choral performance problems.

MUS 321 **Fundamentals of Music Theory** 3
Designed to develop non-music majors in the mechanics of music notation, harmony, melody, and rhythmic structure of music. Particular emphasis on the relation of music to the self-contai ned elementary classroom.

MUS 325 **Music in the Elementary School** 3
Creating a musical environment in the elementary school classroom. Problems of children singing, rhythmic concepts, listening, percussion and melodic instruments, notation and materials critique. Practicum in elementary music teaching.

MUS 379 **Ensemble** 1
Laboratory experiences in performing choral and instrumental music.

MUS 401 **Instrumental Music in the Secondary School** 3
Techniques of instrumental music instruction, organization of the public school music department, rehearsal techniques, and related problems.

MUS 402 **Choral Music in the Secondary School** 3
Techniques and materials for teaching choral music in grades seven through 12 with special emphasis on organization and administration of secondary music departments.

MUS 420 **Elementary Music Pedagogy** 2
Techniques of teaching instruments by class with emphasis on the development of public school instrumental music programs. An investigation of pedagogical literature for families of instruments: woodwinds, strings, brasses, percussion, or voice.

Philosophy

The study of philosophy is concerned with man's values and his relationships with other individuals and within institutions as well as in the speculative domain. It is also concerned with such matters as ethics, political and legal philosophy, aesthetics, standards of excellence in various pursuits and institutions, metaphysics, philosophy of religion, history and science, and linguistics.

The University does not offer a major in philosophy but does offer courses which students may find of interest as a part of their general education or in the acquisition of a minor.

Courses in Philosophy

PHIL 311 **Logic** 3
A study of the principles of reasoning and the systematic application of human intelligence in problem-solving.

PHIL 321 **Ethics** 3
A review of the major traditions in ethics in the Western world from the Greeks through the present, examination of the problems of contemporary ethics with particular emphasis on the modern solutions to the is-ought problem.

PHIL 331 **Philosophy of Religion** 3
An examination of major world religions as components of belief systems which have affected human history and social development.

PHIL 341 **Existentialism** 3
An examination of the body of current ethereal thought, centering on the uniqueness and isolation of the individual in a hostile universe, mankind's freedom of choice and responsibility for the consequences of human acts.

PHIL 351 **Philosophy of Science** 3
A study of the philosophical basis for modern science, including an examination of the role, uses, and limitations of the scientific method.

PHIL 361 **Theory of Knowledge** 3
Epistemology, including investigations into the origin, nature, and development of explanations of knowing.

Physical Education and Health

Currently, degree programs in physical education, but not health, are offered. The uniqueness of study in this area is the emphasis on human movement and performance. Study will focus on the analytical, psychological, physiological, and developmental factors in human movement and their application to instructional programs.

The Bachelor of Arts degree in physical education and health is designed to accommodate students with different degree objectives. The basic program includes development of competencies in physical education and health plus competencies in a secondary field of study. In addition, students may become certified to teach their primary and secondary fields of study in Texas public schools. The student, with the aid of a faculty adviser, will plan learning experiences to satisfy his degree and career objectives.

A major in physical education is appropriate for students interested in elementary and/or secondary school teaching, physical therapy, corrective therapy, athletic training, youth leadership to include YMCA or YWCA work, coaching, graduate study, and the study of medicine. The student interested in certification for teaching should apply at the beginning of the junior year to the Faculty of Pedagogical Studies for admission to the teacher education program. The major in physical education and health requires a minimum of 24 non-activity semester credits, with a minor field of study of 18 credits. For a student interested in teacher certification, the minor field of study must include 24 credits, and the minor selected should complement degree and career objectives.

It is recommended, but not required, that students complete the following courses in physical education and health or their equivalents before entering UT Permian:

1. Foundations of Physical Education
2. Personal and Community Health
3. First Aid

Prior to graduation from UT Permian, students must demonstrate competencies that correspond with their degree objectives. While these competencies will vary, certain ones are considered basic to a major in physical education.

PEH 309 **Skill Competency in Physical Education** **1-3**
The student will demonstrate performance competency in selected combinations of the following sports: football, basketball, baseball, tennis, bowling, archery, track and field, gymnastics, handball, racketball, swimming, golf, soccer, rugby, volleyball, or another sport on special arrangement.

PEH 310 **Motor Development** **3**
The student will analyze the patterns of motor growth and development of normal and handicapped children of infant, early childhood, and later childhood ages.

PEH 320 **The Learning and Teaching of Physical Skills** **3**
The student will describe the variables influencing skill learning and motor performance, including physical, perceptual, and cognitive processes, and will demonstrate their relevance to the development of effective instructional techniques.

PEH 330 **Physical Activity for Handicapping Conditions** **3**
The student will describe physical performance factors of medical and educational handicapping conditions influencing the modification and selection of activities for individuals restricted from participation in regular physical education classes.

PEH 340 **Kinesiology** **3**
The student will analyze and identify the component parts of physical movement to include forces, kinematics, kinetics, leverage, muscles causing specific movements, and will demonstrate an ability to visually analyze human performance.

PEH 350 **Physiology of Exercise** **3**
The student will demonstrate an understanding of the physiological functioning of the human body during physical stress to include muscle strength and endurance, cardiorespiratory energy costs, environmental effects, conditioning programs, and ergogenic aids, demonstrating the use of laboratory equipment.

PEH 359 **Lifetime Sports** **1**
The student demonstrates skill and knowledge of a lifetime sport. Sections include bowling, golf, tennis, handgunning, outdoor education, skeet and trap shooting, swimming, handball, and others.

PEH 360 **Coaching of Sports** **3**
The student will describe principles and strategies of athletic coaching, including offense and defense play, skills and drills for sports, organization of practices and seasons, conditioning, skill learning, scouting, and public relations.

PEH 369 **Sports Literature** **1-3**
The student will demonstrate an understanding of literature pertaining to skills, drills, and coaching techniques of selected sports: football, basketball, baseball, volleyball, track and field, swimming, golf, gymnastics, tennis, soccer, rugby, and others.

PEH 370 **Athletic Training** **3**
The student will demonstrate the prevention and treatment of athletic injuries to include their recognition, techniques of taping, therapeutic modalities, rehabilitation of injuries, and management of an athletic training room.

PEH 400 **Measurement of Physical Performance and Achievement** **3**
The student will demonstrate the basics of physical measurement and evaluation. Topics will include trends in the field, basic statistics for test interpretation, an overview of physical and psychological tests, and the grading of students.

PEH 410 **Curricular Innovations in Elementary Physical Education** **3**
The student will design movement experiences for elementary school children that demonstrate application of the latest trends in physical education program development and utilization of innovative instructional techniques.

PEH 420 **Behavioral Aspects of Sport** **3**
The student will describe the basic components of sports psychology and sports sociology and the techniques of study in these areas, and will demonstrate the application of psycho-social concepts in the analysis of sports-related situations.

PEH 600 **Tests and Measurements in Physical Education** **3**
The student will demonstrate the principles and techniques of physical measurement and evaluation. Topics include current research in the field, evaluation tests, testing instruments and apparatus, and construction of original testing instruments.

PEH 620 **Psycho-Social Analysis of Sport and Physical Activity** **3**
The student will describe informational areas permitting the social-psychological study of sports, to include selected theories of sports involvement, and will demonstrate their application to the analysis of sports.

PEH 621 **Analysis of Motor Skill Acquisition** **3**
The student will demonstrate the concepts and research methodology associated with the study of human motor performance and selected learning theories, utilizing such knowledge in the analysis of both motor tasks and instructional processes.

PEH 630 **Curriculum Development in Movement for the Handicapped** 3
The student will demonstrate an ability to construct individual and group physical education programs based on the specific and general motoric needs of handicapped persons.

PEH 640 **Cinematography in Physical Education** 3
The student will demonstrate qualitative analysis of sports movements and techniques, utilizing cinematography and strobe photography methods. Topics include data collection and analysis, use of high speed cameras, current research, and analysis of a selected sport skill.

PEH 641 **Biomechanics and Human Engineering** 3
The student will describe the analysis and synthesis of human movement in sports and the design of athletic equipment. Topics include the nature of forces, moments and couples, linear and angular kinematics and kinetics, friction, aerodynamics, ballistics, and sports techniques.

Pre-Law

Students desiring to complete pre-law preparation and receive a bachelor's degree may do so through one of several options. The most common is the B.A. program in government; however, degrees in several other fields also are appropriate. Those interested in entering a law school after completion of the bachelor's degree should consult with the assistant dean of the College of Arts and Education for referral to an appropriate adviser.

Psychology

Psychology is the science of the behavior of organisms, especially the human. The psychologist is concerned with the discovery and application of principles of behavior.

The program in psychology leading to the Bachelor of Arts degree is designed to prepare students with differing educational goals. The primary emphasis of the degree program in psychology is in the applied field. Another option is available for those who wish to pursue graduate education in psychology. However, the two options are not completely separate; a student pursuing one option may receive extensive preparation in the other.

Psychology constitutes an excellent major for students whose career goals involve working with people. Students who contemplate a career in teaching, personnel work, advertising, the medical and paramedical fields, crime

prevention, counseling, child care, recreation, and urban planning may find psychology to be an appropriate major. The rapid growth of the need for psychological technicians in recent years provides many opportunities for the psychologist trained to the baccalaureate level.

A major in psychology requires a minimum of 24 semester credits and a minor of 18 credits. The minor should complement the major field of study. Sociology and anthropology are excellent minor fields for students in psychology, especially those interested in the applied psychology field. For the students planning graduate work in psychology, mathematics and the biological or physical sciences are also appropriate minor fields.

A course in "Introductory Psychology" is required for all students majoring in psychology. All students majoring in psychology will be required to complete a research project in their senior year which is designed to enable the student to create a problem, design the procedures to solve it, and conduct the research. The research project in applied psychology should involve some community agency or resource such as the schools, the courts, an industrial or commercial enterprise, and the like. For those planning to attend graduate school, the research project may be conducted in one of several areas of psychology of interest to the student.

Courses in Psychology

PSYC 301 **Descriptive Statistics** 3
Measures of central tendency, variability, and correlations are described, with major emphasis on the applications of statistical methods and experimental design to psychological research.

PSYC 305 **Principles of Behavior Modification** 3
An examination of the principles and techniques involved in the development, maintenance, and modification of behavior, emphasizing applications to human behavior.

PSYC 311 **Social Psychology** 3
An analysis of the interrelationships between the individual and his social environment, considering social influences upon motivation, perception and behavior, and the development and change of attitudes and opinions.

PSYC 315 **Learning** 3
An examination of the major research results as related to the basic concepts involved in verbal, motor, and perceptual learning of the human.

PSYC 321 **Abnormal Psychology** 3
An examination of the variables involved in the development, maintenance, and treatment of a variety of behavior disorders.

PSYC 323 **Personality** 3
A survey of the major theories of personality discussed in the context of the related experimental research.

PSYC 341 **Developmental Psychology** 3
An exploration of the developmental aspects of physical, mental, social, and emotional growth from birth to adolescence.

PSYC 371 **Motivation** 3
A survey of the theories and experimental research concerning drives, needs, and preferences.

PSYC 390 **Applied Research Project** 3
Personal and individual development of a research project in applied psychology, including the design and conduct of the research with a formal written report.

PSYC 401 **Inferential Statistics** 3
Advanced statistical methods as applied to the interpretation of psychological data.

PSYC 411 **Language and Cognitive Processes** 3
An introduction to the research and theories of language development and maintenance, including concept learning, problem solving, memory, and attention.

PSYC 415 **Theories of Learning** 3
An examination of the assumptions, constructs, and research evidence of the various theories of learning.

PSYC 433 **Personnel Psychology** 3
An examination of the techniques and methods for the selection and classification of personnel in commercial and industrial environments.

PSYC 435 **Industrial Psychology** 3
An examination of the variables that affect employee performance in the industrial and commercial environments.

PSYC 441 **The Exceptional Child** 3
This course will involve a discussion of the theories and research in the fields of biology and psychology concerning exceptional children. This includes an analysis of: mental retardation, emotional disturbances, minimal neurological dysfunctions, and the mentally gifted and creative child.

PSYC 451 **Tests and Measurements** 3
The theory and techniques of psychological measurements, with major emphasis on the construction, administration, and interpretation of various psychological tests.

PSYC 475 **History and Systems of Psychology** 3
An analysis of the major factors affecting the development of psychology as the science of behavior, with an emphasis on the various systems of psychology.

PSYC 621 **Sources of Abnormal Behavior** 3

An analysis of the research on the major sources of variables involved in abnormal behavior.

Sociology

Sociology is the study of man in society. It attempts to uncover the principles of social structure and the dynamics of cultural processes in communities, organizations, social movements and the smaller groups embedded within these larger structures.

The Bachelor of Arts major in sociology is designed primarily for the student pursuing a general liberal arts education. However, students concerned with more specialized occupational training can develop a major or minor in sociology consistent with their primary career goals.

Sociology is an acceptable major for students completing teacher certification programs in elementary and secondary education and for students interested in social work and counseling. Industry and government also employ professional sociologists. However, students interested in working for industry or government should consider advanced study beyond the Bachelor of Arts degree.

A major in sociology requires a minimum of 24 semester credits of which three credits may be taken in anthropology. A student may take any minor he chooses. For example, a student hoping eventually to work as a sociologist in industry or government might find business management a useful minor. A student interested in pursuing graduate training in sociology beyond the B.A. might find anthropology, psychology, or mathematics useful minors.

Majors in sociology are required to take an introductory sociology course. Most will have done this at another institution. However, this requirement can be satisfied by enrolling in SOC 301, The Study of Society, at UT Permian. Students expecting to continue postgraduate study in sociology beyond the B.A. degree are advised to enroll in: SOC 325, Social Research, and MNGT 301, Basic Quantitative Methods.

Courses in Sociology

SOC 301 **The Study of Society** 3

An examination of the major social structures and processes in modern societies. Aspects of society covered are: norms, roles, social order and disorder, status, power, adaptive processes, groups, organizations, and communities. This course, or its equivalent, is normally considered a prerequisite for other courses in sociology.

SOC 311 **Social Behavior** 3

This course focuses on interpersonal interactions. Topics covered are social influence, conformity, prejudice, attitude change, development of social motives, authoritarianism, community change.

SOC 325 **Social Research** 3

The course acquaints students with some of the major problems in conducting sociological research: conceptualization of the research question, development of a research design, collection of data, and data analysis. Prerequisite: at least two courses in sociology.

SOC 331 **Criminology** 3

This course acquaints students with research on criminal behavior patterns, the behavior of police and courts in handling the criminal offender, and methods of social control in the confinement and treatment of criminals.

SOC 375 **Social Stratification** 3

Acquaints the student with the differentiated structures of power and social class in industrial societies: the differences in income, prestige and political authority, the dynamics of social mobility and major historical changes in different types of stratification systems.

SOC 380 **Urban Studies** 3

The social and ecological organization of cities is the main focus of this course. Emphasis is placed on the American city: its patterns of immigrant settlement, the clash between traditional and modern value systems, the position of ethnic and racial groups, and the impact of urbanism on the human personality.

SOC 386 **Formal Organization** 3

The course introduces students to the scientific study of bureaucratic organization. Covers the theories of Max Weber and Robert Michels as well as contemporary empirical studies on organizations: prisons, governmental bodies, unions, and hospitals. Prerequisite: SOC 311 strongly recommended.

SOC 417 **Industrial Sociology** 3

Research and theory on the social organization of work in industrial society. The primary emphasis is on business and manufacturing concerns in the United States. Industrial conflict, the impact of technology on work, and the morale and productivity of workers are discussed. Prerequisite: SOC 386 recommended.

SOC 427 **Sociological Theory** 3

Provides an introduction to both classical and contemporary theorists: Marx, Weber, Durkheim, Pareto, Homans, and Parsons among others. Substantive theories of social organization are emphasized along with the logic of theory construction and verification.Prerequisite: At least two courses in sociology.

SOC 428 **Small Groups** 3

A treatment of the major theories and findings on small groups. Status structures, role differentiation, power processes, cohesion, normative conformity, group problem solving, and effective leadership will be covered. Prerequisite: SOC 311 or equivalent psychology course.

SOC 444 **Racial and Cultural Minorities** 3

The emergence of ethnic and racial minorities, comparative ethnic relations, racism and ethnocentrism, possible future arrangements for relations between minorities and the dominant society.

Spanish

In a state with the Hispanic heritage of Texas plus its proximity to Mexico, the study of Spanish is especially appropriate for many students. A large number of Spanish-speaking citizens in the Southwest provide a living language laboratory for students who desire to acquire a fluent knowledge of the language and culture.

The Bachelor of Arts degree program in Spanish assumes that students will have had the equivalent of two years of coursework at the freshman and sophomore levels during which they have mastered the rudiments of speaking, reading, writing, and listening to the Spanish language. Spanish is an appropriate major for the student who desires a liberal arts education and has special interest in the language, literature, and culture of Spanish-speaking peoples. The program is also designed to prepare teachers of Spanish for the elementary and secondary schools. Individuals receiving degrees in Spanish may have opportunity to function in a bilingual-bicultural setting and to enter into a number of fields where a knowledge of the Spanish language and literature is useful.

The degree program in Spanish is oriented toward the study of Spanish language and literature but also is designed to acquaint the student with Hispanic and Latin American cultures. At least a portion of the courses offered are conducted in the Spanish language.

SPAN 315 **Advanced Composition and Conversation** 3
The essentials of Spanish grammar as applied in written expression and conversation.

SPAN 321 **Hispanic Civilization** 3
The major currents and characteristics of Spanish culture as expressed through the centuries in literature, art, philosophy, and history. Course conducted in Spanish.

SPAN 326 **Civilization of Latin America** 3
The major currents and characteristics of Spanish-American culture as expressed through the centuries in literature, art, philosophy, and history. Course conducted in Spanish.

SPAN 350 **Introduction to Spanish Literature** 3
The reading and discussion of selected works. The rudiments of literary criticism. Course conducted in Spanish.

SPAN 353 **Spanish Literature to 1700** 3
A survey of the important movements, authors and works in Spanish literature from the Middle Ages to the eighteenth century. Course conducted in Spanish.

SPAN 354 **Spanish Literature Since 1700** 3
A survey of the important movements, authors and works in Spanish literature from the eighteenth century to the present. Course conducted in Spanish.

SPAN 361 **Practical Phonetics** 3
A study of the sounds of Spanish and of the Spanish phonemic system with special attention to the problems involved in the teaching of Spanish pronunciation to English-speaking students.

SPAN 432 **Applied Linguistics** 3
The application of selected aspects of Spanish phonology, morphology and syntax to problems of teaching Spanish.

SPAN 453 **20th Century Spanish-American Literature** 3
Reading and discussion of the principal works which reflect the social and aesthetic preoccupations of the Mexican writer since the Revolution.

Speech

The Bachelor of Arts degree in speech is designed to prepare individuals for teaching speech, but also to prepare students who have interest in other areas including rhetoric and public address.

At The University of Texas of the Permian Basin, the programs in speech and mass communications are associated in the Faculty of Communication, indicating that a close relationship is seen between the study of speech and mass communications. Some students will find it desirable to minor in mass communications, although this is not necessary. Other students will choose to minor in literature, Spanish, music, art, and other fields.

In addition to courses in speech, certain courses in pedagogical studies and mass communications are appropriate components of a speech major. Students preparing to teach should consult the section on teacher education for courses in pedagogical studies required for teacher certification.

Courses in Speech

SPCH 310 **Participation in Speech Activities** **1**
Involvement-oriented training is provided in the theory and practice of communication activities such as debate, oral interpretation, persuasive speaking, etc., on the community, intramural, and intercollegiate levels.

SPCH 315 **Parliamentary Procedure and Group Leadership** **3**
Training is provided in group management skills by which self-governing bodies transact business. Emphasis is placed on both formal parliamentary mechanisms and general problem-solving techniques.

SPCH 330 **Concepts in Speech Communication** **3**
Beginning with a survey of communication concepts, the students will apply theory to the construction and analysis of persuasive messages.

SPCH 346 **Oral Interpretation** **3**
Beginning with instruction in the oral re-creation of literature and its analysis, students are introduced to the principles and practice of group performance in reader's theatre.

SPCH 351 **Speech Analysis and Criticism** **3**
Students will explore principles and standards for the analysis and criticism of communication. Students will apply critical concepts to selected oral and written messages.

SPCH 418 **Dynamics of Small Group Communication** 3
Factors are studied which contribute to communication in the group setting. Students will observe group interaction and will engage in problem solving on a group basis.

SPCH 453 **Selected Theories of Communication** 3
This course surveys significant theories and models of the human communication process. Students will help formulate and test communication hypotheses.

SPCH 456 **Theory of Argument and Persuasion** 3
The instruction treats strategies and principles of argumentation as they apply to influencing human attitudes and behavior.

Teacher Education

Teacher education programs leading to certification by the Texas Education Agency are offered in the following fields:

1. Early childhood education (for teaching kindergarten and nursery school)
2. Elementary education
3. Secondary education
4. Special education
   a. Mentally retarded
   b. Language/learning disabilities
   c. Physically handicapped
   d. Emotionally disturbed

The teacher education program includes preparation for teaching the following subjects:

Elementary (grades K-8)—anthropology, art, biology, chemistry, economics, English, earth science, government, health and physical education, history, mathematics, vocal music, physics, psychology, sociology, Spanish, and speech.

Secondary (grades 7-12)—art, biology, chemistry, drama, earth science, English, economics, government, health and physical education, history, journalism, mathematics, music (vocal, instrumental), physics, psychology, sociology, Spanish, and speech.

All level (grades 1-12)—art, music, and physical education and health.

Students enrolled in teacher education will receive the bachelor's degree in one of the arts and sciences fields, while at the same time completing all of the requirements of the Texas Education Agency for certification to teach.

See the section on Graduate Study for the master's degree program in education and for certification programs in reading and educational administration.

A UT Permian student will be as fully prepared for teaching as students who take a bachelor's degree in education at other universities, but his degree will be awarded in a field of teaching interest with a minor in a second field, plus completion of teacher education. Thus, one preparing to teach mathematics in high school would receive the B.S. degree in mathematics with a minor, perhaps in physics, plus completion of all teacher education courses and requirements. This can be done within the minimum of 120 semester credits required for a bachelor's degree.

During the first semester, all students who wish to prepare for teaching make application for admission to teacher education by submitting an application to the secretary of the Teacher Education Council. Those preparing for teaching at the elementary and/or kindergarten levels take courses in pedagogical studies* (education) during both their junior and senior years, since 30 semester credits of such study are required for certification to teach at the elementary level, plus another nine credits to teach kindergarten. Students preparing to teach at the secondary level take 18 credits in pedagogical studies (education), almost all of which will be taken during the senior year. In all teacher education programs, one full semester during the senior year will be "blocked" for teacher education; this includes some course work plus one-half semester of full-time student teaching in a public school.

The University of Texas of the Permian Basin is the first institution in the State preparing teachers according to the new Performance Based Teacher Education Plan. This approach is designed to assure that when students finish a teacher education program they are fully qualified to perform as teachers in the classroom. It means not only that they have passed their courses but also that they have demonstrated that they know the subject matter they will teach and that they have the competence to perform effectively in all teaching situations for which they have been trained.

Certification Study. Individuals who hold a bachelor's degree and desire to become certified to teach may enroll in the teacher education program as non-degree special students, and limit their study only to courses required for certification.

*The term "Pedagogical Studies" is derived from "pedagogy," the art and science of teaching and learning, and at UT Permian refers to the courses dealing with professional teacher education.

PED 311 **Human Growth and Development: Child** 3
The first course in the teacher education sequence. Emphasis is placed upon understanding the psychology of human adjustment and the behavior patterns of children and youth.

PED 312 **Human Growth and Development: Adolescent** 3
Characteristics, needs, and problems of adolescence. Special emphasis on principles and development important to teachers.

PED 321 **Teaching Strategies for the Elementary School** 3
Individual study of learning principles and their application in schools; selecting and justifying objectives and defining them operationally; designing plans, adapting to actual pupils in the schools, selecting strategies and materials to implement plans

PED 322 **Teaching Language Arts in the Elementary School** 3
Methods of developing skills of effective oral and written communication for elementary teachers. Techniques developed through discussion and implementation of methods and materials in a teaching center.

PED 323 **Teaching Social Studies in the Elementary School** 3
A basic course in social studies materials and methods for those seeking certification at the elementary level.

PED 324 **Teaching Science and Mathematics in the Elementary School** 3
Students will demonstrate and/or achieve the mathematics and science skills needed to teach the newer, as well as the traditional, elementary mathematics and science programs; includes development of lesson and unit design skills.

PED 325 **Teaching Reading in the Elementary School** 3
Basic methods, trends, recent materials, and issues in reading programs of kindergarten, primary, and upper elementary grades. Techniques developed through discussion and implementation of methods and materials.

PED 326 **Children's Literature** 3
General overview of literature intended for children. History and criticism of books for children, illustration of these books and recent trends in the use of literature.

PED 331 **Teaching Strategies for the Secondary School** 3
The student will be presented with the latest materials and methods in secondary education, including an opportunity to work with students; following this course, the student should be prepared to participate effectively in the student teaching program.

PED 344 **Introduction to Educational Psychology** 3
Emphasizes psychological principles directly applied to teaching. A survey of factors underlying the teaching-learning process including theory, programming, discipline and problems of evaluation.

PED 371, 372 **Student Teaching: Kindergarten** 3,3

PED 373, 374 **Student Teaching: Elementary** 3,3

PED 375, 376 **Student Teaching: Secondary** 3,3

PED 377, 378 **Student Teaching: All Level** 3,3

PED 379, 380 **Student Teaching: Special Education** 3,3

PED 390 **Foundations of Education** 3
Examination of selected valuational, epistemological, and historical considerations related to education as a process of human development, as a social-political institution, and as a profession.

PED 411 **Early Childhood Education: Development and Learning** 3
Introduction to the literature of early childhood education, with emphasis upon environmental factors affecting cognitive growth, socialization, and achievement.

PED 412 **Early Childhood Education: Curriculum and Teaching** 3
Review and development of curriculum, materials and methods used in the nursery school and kindergarten, focusing on the goals and purposes of various types of programs.

PED 413 **Language Development in Young Children** 3
Study of the nature of language and the acquisition of syntax by the young child. Includes environmental influences on developmental characteristics of language and contingent effects on socialization, cognition and achievement.

PED 425 **Teaching Reading in the Secondary School** 3
The basic skills and knowledge needed to evaluate and incorporate the secondary student's reading competencies into specific content areas. Prerequisite: one undergraduate reading course or consent of instructor.

PED 427 **New Strategies in Elementary Social Studies Programs** 3
This course is designed to involve elementary education students in the latest social studies curriculum programs in order to determine how these innovative programs may affect and improve traditionally taught courses.

PED 428 **New Strategies in Secondary Social Studies Program** 3
This course is designed to involve secondary education students in the latest social studies curriculum programs in order to determine how these innovative programs may affect and improve traditionally taught courses.

PED 430 **New Strategies in Elementary Science Instruction** 3
Course will consist of self-paced sequence activities that will enable the student to design, teach, and refine sequences of instruction for children in elementary science, including use of materials from new elementary science programs.

PED 431 **Designing Secondary Science Programs** 3
A self-paced course in organizing and sequencing lessons and units in junior high and senior high science courses. Major emphasis will be placed on design of science instruction. Students will videotape and evaluate their own teaching.

PED 433 **Theories of Learning** 3
Emphasis upon the major theories of learning, empirical evidence underlying them, and their relevance to education.

PED 451 **Education of Exceptional Children** 3
Identification of the various types of exceptional children and their educational problems. Curriculum development and adaptation of selected methods and materials basic to teaching these exceptional children.

PED 452 **Theory and Methods of Language/Learning Disabilities** 3
A course providing a broad overview of the theories and methodologies used in the teaching and evaluating of students with language learning disabilities. Prerequisite: PED 451 or consent of instructor.

PED 455 **Education of Exceptional Children in the Regular Classroom** 3
Identification and etiology of most prevalent handicaps found in classes; curriculum development adaptation; selected methods and materials basic to teaching these handicapped children.

PED 456 **Theory and Methods in Education of the Mentally Retarded** 3
An in-depth study of the theory and methods and basic curriculum for the educable mentally retarded in primary and intermediate levels. Selection of curriculum content, specific materials and methods of instruction.

PED 457 **Observation/Participation in Special Education** **1-3**
Directed experiences in observation and participation in special education classrooms.

PED 458 **Materials and Methods for the Exceptional Child** **3**
This course is designed to develop an awareness of the instructional materials and the selection, analysis and use of materials for individualized instruction of the exceptional child.

PED 470 **Introduction to Guidance Services** **3**
The course is designed to give the student a general overview of the total guidance service in the public schools. Emphasis on scope, purposes, assumptions, tools, and procedures of all aspects of the guidance service.

PED 481 **Educational Measurement for the Classroom Teacher** **3**
Introduction to the principles of individual differences, evaluation, and measurement; test construction and cultural problems in testing.

PED 492 **Culture and Learning** **3**
The study of the interrelationship of culture and learning. The major emphasis is upon environmental influences on socialization, cognition, and achievement.

PED 607 **Supervision of Instruction** **3**
The application to instructional supervision at the elementary and secondary school levels of role theory, organizational theory, personality theory, research in processes of change, and human relations in leadership.

PED 608 **Supervision of Student Teaching** **1-3**
Supervision of student teachers at secondary or elementary school levels. Critical examination of techniques and procedures for supervising the effectiveness of instruction, activities, and programs.

PED 609 **Supervision of Special Education** **1-3**
A study of the administrative and supervisory procedures of special education programs for exceptional children.

PED 610 **Environmental Factors in Early Childhood Education** **3**
Theory and issues in the literature of early childhood that relate to environmental factors influencing cognition, socialization, and achievement.

PED 611 **Early Childhood Education: Curriculum, Procedure, and Materials** **3**
Development of curricula, materials, and methods for pre-school and kindergarten programs systematically derived from diverse theoretical and philosophical positions.

PED 612 **Cognitive Education of the Young Child** 3
A study of the various education programs for young children which focus on enhancing cognitive growth, including those of Montessori and Piaget.

PED 613 **Early Childhood Education: Theory and Research** 3
An intensive review of the major theories and research emphases in early childhood education and psychology from an historical and evolving orientation.

PED 614 **Cognitive Development in Young Children** 3
An intensive investigation of the literature regarding the development of perceptual and conceptual skills; verbal meditation and other cognitive functions.

PED 617 **Organization of Reading Programs** 3
An examination of various alternatives for organizing, administering, and evaluating a reading program in a school district (grades K-12) and in an individual school. Prerequisite: one undergraduate reading course or consent of the instructor.

PED 618 **Advanced Developmental Reading** 3
A study of cognitive processes and psycholinguistic models of reading as well as issues in the teaching of reading; not a methods course. Prerequisite: one graduate reading course or permission of instructor.

PED 619 **Materials, Methods, and Media in Reading** 3
A survey of a wide range of programs and other reading materials as well as the comparison of methods used in the teaching of reading. Prerequisite: one undergraduate reading course or consent of instructor.

PED 620 **Diagnosis and Remediation of Reading Difficulties** 3
A study of testing strategies needed to evaluate and diagnose students with reading difficulties. Prerequisite: one undergraduate reading course or consent of instructor.

PED 621 **Curriculum Foundations of the Elementary School** 3
Examines the foundations of curriculum of the elementary school. Review of aims, methods, and approaches to curriculum, instruction, programs, and evaluation.

PED 622 **Education of the Disadvantaged Child** 3
Examines the complex nature of the disadvantaged child from an educational, political, and psychosocial point of view. Explores techniques and activities for classroom use.

PED 626 **Analysis and Selection of Literature** 3
This course is designed to extend the student's knowledge and understanding of the place of literature in the reading program. Emphasis is upon recent research in literature and related trends in curriculum.

PED 634 **Curriculum Foundations of the Secondary School** 3
Examines the foundations of curriculum of the secondary school. Review of aims, methods, and approaches to curriculum, instruction, programs, and evaluations.

PED 635 **Practicum: Counseling** 1-3
Supervised practice in individual counseling.

PED 636 **Practicum: Mentally Retarded** 1-3
A field-based course providing a wide range of experiences which require the application of diagnostic and teaching strategies to mentally retarded students. Prerequisite: consent of instructor.

PED 637 **Practicum: Reading** 1-3
A field-based course providing a wide range of experiences which require the application of diagnostic and teaching strategies to students with reading problems in grades K-12. Prerequisite: PED 620 or equivalent experiences.

PED 638 **Practicum: Language/Learning Disabilities** 1-3
A field-based course providing a wide range of experiences which require the application of diagnostic and teaching strategies to students with language/learning disabilities in grades K-12. Prerequisite: PED 452 and 652 or equivalent experiences.

PED 639 **Innovations in Teaching Elementary School Science** 3
An examination of significant similarities and differences between newer elementary science programs and existing approaches; interaction with elementary children using materials and activities from some of the current curricula.

PED 641 **The Design of Instructional Systems** 3
The learner will be able to design a course of instruction using systems theory and the programmed instructional process.

PED 642 **Individualized Instruction** 3
Defining objectives behaviorally; developing sequential learning activities; analyzing pupil readiness; prescribing appropriate strategies for continuous individual progress; applications with students in classrooms.

PED 643 **Selected Teaching Strategies in Early Childhood Education** 3
A systematic development of programs for young children based on diverse philosophical-theoretical positions.

PED 644 **Advanced Educational Psychology** 3
Review of research on perception, learning, and memory processes. Analysis of problems of school learning including social and personality factors, evaluation, classroom organization and management.

PED 651 **Advanced Problems in Language/Learning Disabilities** 3
An in-depth study of the literature and research relating to psychological, sociological and educational problems of language/learning disabilities. Prerequisite: permission of the instructor.

PED 652 **Assessment of Language/Learning Disabilities** 3
Development of the knowledge, skills and variety of testing strategies needed to evaluate and diagnose students with language/learning disabilities. Prerequisite: PED 451 and 452 or consent of instructor.

PED 656 **Advanced Problems in Education of the Mentally Retarded** 3
An in-depth study of the psychological, sociological and educational problems of the mentally retarded.

PED 657 **Etiology of the Mentally Retarded** 3
The mentally retarded child and his problems. Study of the diagnosis, social, psychological, and educational problems manifested by the mentally retarded child.

PED 658 **Educational Planning for Children with Language/Learning Disabilities** 3
An exploration of organizational alternatives and methodologies employed by a school district, individual school, or resource room teacher. Prerequisite: permission of the instructor.

PED 670 **Introduction to Counseling: Theory and Practice** 3
Designed to give the students an understanding of counseling theories and a moderate degree of competence in applying counseling techniques.

PED 671 **Group Techniques for Counselors** 3
Dynamics and theory of group processes as applied to group procedures in counseling and psychotherapy.

PED 672 **Vocational Counseling: Theory, Information, and Career Development** 3
Theories of educational-vocational development; psychological and sociological aspects of work; nature and use of occupational and educational information; job analysis, placement techniques, and follow-up procedures relating to employment and adjustment to work.

PED 673 **Guidance Testing** 3

Theory and issues in group testing; analysis and interpretation of achievement, aptitude, interest and personality tests; synthesis of comprehensive case data and report writing in educational, vocational, and general counseling. Prerequisite: introductory statistics.

PED 680 **Research Design in Education and the Social Sciences** 3

Research planning, evaluation of research, sampling, surveys, measurement, research tools, experimental and quasi-experimental designs, historical studies, data analysis, and reporting research.

PED 681 **Statistics** 3

Introduction to descriptive and inferential statistics as applied to education.

PED 690 **Philosophy of Education** 3

The student is encouraged to examine critically his own ideas about education in terms of basic distinctions concerning the nature of knowledge, value, man, and democracy.

PED 693 **Seminar in Educational Concepts and Issues: Education, Culture, and Learning** 3

Designed for mid-management administrators and superintendents. Emphasis upon environmental influences on socialization, cognition, and achievement and their relationship to curriculum design and organizational patterns.

PED 694 **Seminar in Educational Concepts and Issues: Innovations in Social Studies** 3

This course is designed to involve students in inquiry strategies and materials with a primary goal of developing each student's skill in the adoption, modification and production of unique methods and materials for the classroom.

PED 695 **Seminar in Educational Concepts and Issues: Early Childhood Education** 3

A graduate interaction group which is designed to assist the student in developing skills in discussion, critique, and development of research questions of interest.

PED 696 **Seminar in Educational Concepts and Issues: Historical and Philosophical** 3

Examination of selected issues of current significance as these issues relate to fundamental concepts such as humanism, relevance, freedom, authority, value, pluralism, and equality.

Theatre

The Bachelor of Arts degree in theatre is designed to prepare individuals who wish to pursue careers in acting, directing, or teaching. Students who desire careers on the stage are able to concentrate on acting. The program also offers preparation for a position as manager-director of a community theatre. Many students choose additional preparation to teach theatre in secondary schools. Finally, the study of theatre is a wise choice for many students who desire a liberal arts education and who feel that it can best be gained within the framework of the degree program in theatre.

The theatre program at The University of Texas of the Permian Basin also connotes professional preparation within the environment of a university community. Not only is there an emphasis on the study and mastery of theatre practice but also there is the opportunity to collaborate with a producing art theatre, largely through associations with professional guest artists. In addition, such an innovative program provides students with alternatives for solving specific and practical problems of past, present, and future drama production.

A major in theatre requires 24 semester hours; however, those individuals preparing for careers in acting and/or directing usually complete considerably more than the minimum credits required. In addition, a minor of at least 18 semester hours is required; those individuals preparing to teach theatre in the secondary schools usually find it desirable to complete a minor in speech. They should consult the section on Teacher Education to learn the courses in pedagogical studies required for certification.

Students enrolling to study theatre should have had some prior coursework or experience in speech and/or theatre, although it will be possible for students to major in theatre without having had such experience. In addition to courses in theatre, selected courses in creative writing, music, art, and mass communications are appropriate for the theatre major.

Courses in Theatre

THEA 311 **History of the Theatre** 3
Development of theatre art from the earliest times through the 19th Century.

THEA 317 **Acting and Directing** 3
An introduction for the beginning actor to the problems of building a character through the study of intellectual, emotional, and physical techniques. Scene work required. The beginning director is introduced to the principles and procedures of direction from selection of the play through its performance.

THEA 352 **Fundamentals of Stagecraft** 3
An introduction to the vocabulary and procedures of theatrical production.

THEA 357 **Acting** 3
A study of acting styles and techniques from early Greek through modern times.

THEA 358 **Advanced Directing** 3
A study of performance principles and the use of the stage in dramatic action, from the director's initial concept through his work in rehearsals. Includes production, organization, and dramatic analysis.

THEA 361 **Shakespearean Production** 3
Offered in conjunction with the Summer Shakespeare Festival of the Globe of the Great Southwest, this course introduces students to all phases of Shakespearean production in one of the most authentic settings extant throughout the world.

THEA 405 **American Drama** 3
Same as LIT 405.

THEA 425, 426 **British Drama** 3,3
Same as LIT 425, 426.

THEA 445, 446 **World Drama** 3,3
Same as LIT 445, 446.

THEA 451 **Makeup and Costume** 3
Techniques of stage makeup and major historical periods of dress.

THEA 452 **Lighting and Set Construction** 3
Fundamentals of lighting and the techniques of building scenery for the stage.

THEA 479 **Performance Workshop** 3
All phases of play production activities (acting, stage managing, scenery, properties, lighting, costumes, publicity, and box office) are learned by actually producing plays. Field trips to observe other performing groups are included.

College of Management

The goals of the College of Management are to help in preparing students to assume leadership responsibility and decision-making roles in business, government, and other administrative environments. Because the demands on modern business and government are in constant change, it is important that students possess a flexibility which comes from a broad education.

An integrated approach to the functions of management is emphasized since the operation of an enterprise, private or public, cannot be easily segmented and compartmentalized. At the same time, however, strong efforts are made to prepare students to sit for certifying examinations in the areas of accounting, transportation, and other fields of their choice and to enter a wide range of specialized fields in business and government.

Organizationally, the College of Management offers six undergraduate programs of study. Two curricula lead to the degree of Bachelor of Business Administration: (1) a major in management with emphases in decision sciences, finance, logistics/physical distribution, personnel or production management and marketing, plus an option in aviation management and (2) a major in accountancy and information systems. Curricula leading to the Bachelor of Arts degree include (1) economics, (2) law enforcement with an option in law enforcement management. The minimum number of semester hours required for each undergraduate degree is 123. At the graduate level, a Master of Business Administration degree program is offered.

Lower Division Preparation

Students planning to major in accountancy and information systems, aviation management, business management, or law enforcement management should complete Major Field II requirements set forth in the Core Curricula for Junior Colleges by the Coordinating Board, Texas College and University System. If a student has not followed this exact list of preparatory courses, he may be admitted, provided he meets other requirements for admission.

In this regard, lower division plans of study for accountancy and

information systems, finance, aviation management, and business management (with emphases in decision sciences, management, marketing, or logistics) should include:

Required courses (courses to be completed in the lower division):

College Algebra	1 course
Accounting	2 courses
Economics	2 courses
Introduction to Computers	1 course
English Composition	2 courses
Government, Federal, and State	2 courses

In addition, for these students there are other required courses which may be taken at either the lower level or at UT Permian. These include:

U.S. History	2 courses
Literature	2 courses
Laboratory sciences	2 courses
Psychology	1 course
Sociology	1 course
Other arts and sciences	4 courses

Students majoring in these fields are urged to select such electives as calculus, logic, and speech to complete the 60 credits to transfer to UT Permian.

For the aviation management program, preparatory plans of study encompass all of the above requirements and suggestions and, in addition, these students are encouraged to complete such electives as civil engineering, strength of materials, meteorology, and matrix algebra.

For the law enforcement and law enforcement management preparatory plans of study, the following courses are required and should be completed at the lower level:

English Composition	2 courses
Government, Federal, and State	2 courses
Laboratory science	2 courses
or Foreign Language	4 courses
U.S. History	2 courses
Other Humanities and Social Sciences	4 courses

In addition, for students in the law enforcement and law enforcement management curricula, other required courses which may be taken at either the lower level or at UT Permian are:

Algebra	1 course
Accounting	2 courses
Economics	2 courses
Psychology	1 course
Sociology	1 course
Literature	2 courses

In addition, the following courses are recommended as electives:

Speech	1 course
Logic	1 course
Calculus	1 course

Students who have not had previous police academy training or actual police experience are encouraged to complete the following courses at the lower level before transferring to the University:

Introduction to Law Enforcement
Police Organization and Administration
Police Role in Crime and Delinquency
Criminal Investigation
Legal Aspects of Law Enforcement
Criminal Procedures and Evidence
Police-Community Relations

Accountancy and Information Systems

The major in accountancy and information systems combines the well-established field of accounting with the newer but rapidly expanding area of information systems. The program is intended to prepare students for professional careers in public, managerial, governmental, or social accounting.

Accounting is a discipline that provides quantitative and qualitative information essential to the decision-making process utilized by any type of organization. Information systems courses deal with the techniques of processing, analyzing, and utilizing business or other data for decision making, with emphasis on effective application of computers.

The requirements to sit for the CPA examination in Texas include a minimum of 20 semester hours in accounting plus nine hours in related business subjects.

The third and fourth year degree requirements consist essentially of three parts:

I. Free Electives 6 hours

II. Basic Management Core 39 hours

The basic core is to provide students with the common body of knowledge in management. Student programs will include courses of instruction dealing with the following areas:

(a) concepts, processes, and institutions in marketing and distribution, production, and financing functions of business enterprise;

(b) economic and legal environment of business enterprises along with consideration of the social and political influences on business;

(c) concepts and methods of accounting; quantitative methods, and information systems;

(d) organization theory, interpersonal relationships, control and motivation systems, and communications;

(e) administrative processes under conditions of uncertainty including integrating analysis and policy determination at the overall management level.

III. Accountancy and Information Systems 18 hours

Opportunities for advanced work in accountancy and information systems will be provided consistent with the student's and the College of Management's objectives and capabilities.

Finance. While the College of Management does not offer a major in finance, some emphasis in this field is possible by completing courses ancillary to the major in accountancy and information systems.

Courses in finance provide (1) a knowledge of the financial structure of the U.S. economy; (2) an understanding of the principles of monetary theory and practice; (3) an understanding of the investment management principles used in operating the major financial institutions and pension funds; and (4) an understanding of the principles underlying the finance function in industrial and commercial firms.

The knowledge acquired from the finance curriculum prepares the student for career opportunities in financial management and investments, in manufacturing, wholesale and retail firms, commercial banking, investment banking, real estate firms, insurance companies, and other enterprises. In addition, this knowledge will be of substantial assistance in the management of the student's personal investments and other financial affairs.

The third and fourth year degree requirements for the finance emphasis consist essentially of three parts. Parts I and II are the same as listed for the accountancy and information systems programs. Part III includes accounting, three courses; finance, three courses, beyond those courses listed in I and II.

Courses in Accounting

ACCT 300 **Managerial Accounting** 3

Role of accounting in the planning and control of business enterprises, with emphasis on management decision-making uses of accounting information. Prerequisite: demonstrate knowledge of accounting principles.

ACCT 301 **Intermediate Accounting I** 3
Intensive analysis of problems and theory of financial statements of condition and net income, and other published financial statements of business organizations. Prerequisite: demonstrate knowledge of accounting principles.

ACCT 302 **Intermediate Accounting II** 3
Continuation of Accounting 301. Treats fundamental theory and problem solving related to publication of financial statements. Includes liabilities, paid-in capital, changes in financial position, and financial statements. Prerequisite: ACCT 301.

ACCT 303 **Cost Accounting Principles** 3
Cost analysis of the manufacturing, marketing, and administrative functions of business organizations primarily for purposes of control and decision-making. Prerequisite: ACCT 300.

ACCT 333 **Information Storage and Retrieval** 3
Brief EDP review. Detailed construction of general data cases for accounting and management information system design. Machine logic and its effect on file and record construction. Prerequisite: ACCT 300, FIN 320, DSCI 301.

ACCT 334 **Advanced Accounting** 3
A comprehensive study of the principles and procedures applicable to accounting for partnerships and consolidations plus other topics. Prerequisite: ACCT 302.

ACCT 405 **Federal Income Taxation** 3
Provisions and procedures of federal income tax laws and requirements affecting individuals and business organizations, including the management problems of tax planning and compliance. Prerequisite: demonstrate knowledge of accounting principles.

ACCT 406 **Auditing Theory and Practice** 3
Generally accepted auditing standards and the philosophy supporting them; auditing and techniques available to the independent public accountant. Prerequisite: ACCT 302.

ACCT 411 **Management Information Systems** 3
Using elements of the accounting system to provide information to various levels of management for planning, control and decision-making. Prerequisite: ACCT 300, FIN 320, MRKT 310, DSCI 301, MNGT 340, Basic EDP, or ACCT 333.

ACCT 412 **Systems Analysis and Design** 3
Generalized analytic approach to systems design using mathematical models and concepts. Study inputs, processes, outputs and control loops for several real-life systems. Prerequisite: ACCT 411, 333.

ACCT 415 **Advanced Income Tax** 3
Study of Federal Income Tax laws, rules and regulations relating to partnerships, corporations, estates, and trusts. Prerequisite: ACCT 405.

ACCT 600 **Accounting Concepts** 2
Presents the basic concepts and principles in the recording, classifying and summarizing the financial transactions of a business.

ACCT 601 **Profit Planning and Control** 3
Integrates functional and operational aspects of organizations primarily through the master budget concept. Prerequisite: demonstrate knowledge of managerial and cost accounting.

ACCT 602 **Accounting Theory** 3
Nature and origin of accounting theory and the development of postulates, principles and practices. Prerequisite: ACCT 302.

ACCT 603 **Contemporary Financial Accounting Issues** 3
The study of contemporary issues affecting all facets of accounting, including financial, governmental, social, public, and behavioral accounting areas.

ACCT 604 **Tax Planning** 3
Study of the methodology used in tax research and in tax planning using the adversary approach.

ACCT 605 **Audit Problems** 3
Development of auditing as a profession, including the evaluation of standards and auditing principles and practices. Prerequisite: ACCT 406.

ACCT 610 **Computer Applications in Decision Making** 3
Use of computer library programs and minor programming to provide information for making optimal executive-level decisions. Statistical, mathematical and computer competence required. Prerequisite: permission of the instructor.

ACCT 611 **Decision Science Models for Accounting and Finance** 3
Programming and statistical methods in financial and managerial accounting, including auditing and internal control. Prerequisite: permission of the instructor.

*Courses in Business Law**

BLAW 320 **Legal Environment of Business** 3
Origin and history of law, its place in and effect upon society; includes court systems and legal procedures and use affecting businessmen and consumers in everyday transactions.

BLAW 321 **Legal Aspects of the Management Process** 3
Law as it affects management decisions regarding creating, regulation and control of business structures. Includes law of agency, principles of personal and real property law (will, intestacy, and estates). Prerequisite: BLAW 320.

BLAW 322 **Oil and Gas Law** 3
Covers topics specifically related to legal problems in the natural resource areas of oil and gas exploration, development and marketing.

BLAW 600 **Business Law** 2
Graduate survey course of general business law, including contracts, sales, commercial paper, secured transactions, agency, corporations, partnerships.

*No concentration or major is available in business law.

Courses in Finance

FIN 300 **Personal Finance** 3
Applications of financial management principles to individual and family fiscal objectives to include income, spending, saving, investing, insuring, estate planning, and retirement benefits. (Not available for credit to B.B.A. students).

FIN 320 **Financial Management Principles** 3
Forms of business organization; corporate securities, financing through securities; sources and management of working capital; administration of income; expansion and combination; reorganization, receivership, and dissolution.

FIN 321 **Investment Management** 3
Securities analysis, portfolio management, and capital budgeting decisions using both qualitative judgement and quantitative economic measures.

FIN 322 **Commercial Banking** 3
How banks, the Federal Reserve and U.S. Treasury interact to determine money supplies. Case studies of recent and current attempts to control inflation and employment.

FIN 324 **Financial Institutions** 3
Study of the flow of funds in the aggregate financial system, the structure of financial markets and the interaction of aggregate financial factors and the policies and operations of financial institutions.

FIN 423 **Macroeconomics: Financial Forecasting** 3
Same as ECON 423.

FIN 600 **Concepts of Business Finance** 2
Presents the managerial use and application of the concepts and principles of the finance function of a business.

FIN 611 **Decision Science Models for Accounting and Finance** 3
Same as ACCT 611.

FIN 620 **Financial Management: Theory & Techniques** 3
Investment, financing and dividend decisions of firms seeking to maximize shareholder wealth. Analytical techniques, economic and behavioral theories and financial environment are emphasized. Prerequisite: permission of the instructor.

FIN 621 **Business Financial Policy** 3
Intensive study of theory problems of business finance from a decision making, internal, problem-solving point of view.

FIN 622 **Investment Policy and Environment** 3
Fixed-capital investment decisions under risk. Management of packages of risky assets. Yield and liquidity cash management.

Aviation Management

The aviation management major is offered as a special concentration within the B.B.A. degree program. This major is intended to provide professional training and education to students interested in careers in airport management, airline management, aviation sales, or other areas in the aviation industry involving application of principles of management, marketing, finance, and accounting.

In general, the program considers the physical, social, political, and economic environment of aviation management. It includes considerations of society and environment in terms of those needs, wants and values of man which can be satisfied by rapid, safe, and comfortable transportation of people and by the fast movement of freight.

All students are required to complete at least 10 hours of flight instruction either before entry into the program or prior to graduation.

Lower division requirements are the same as those set forth in Major Field II of the Core Curricula for Junior Colleges by the Coordinating Board,

Texas College and University System. Exceptions have been spelled out in the introductory section for College of Management programs. Third and fourth year degree requirements consist essentially of three parts:

I. Free Electives 12 hours

II. Basic Management Core 39 hours

The basic core is to provide students with the common body of knowledge in management. Student programs will include courses of instruction dealing with the following areas:

(a) concepts, processes, and institutions in marketing and distribution, production, and financing functions of business enterprise;
(b) economic and legal environment of business enterprise along with consideration of the social and political influences on business;
(c) concepts and methods of accounting, quantitative methods, and information systems;
(d) organization theory, interpersonal relationships, control and motivation systems, and communications;
(e) administrative processes under conditions of uncertainty including integrating analysis and policy determination at the overall management level.

III. Aviation Management Core 12 hours

Opportunities for advanced work in aviation management courses will be provided consistent with the student's and College of Management's objectives and capabilities.

Courses in Aviation Management

AVMG 300 Meteorology 3
Fundamental causes of weather phenomenon, the system in the U.S. for collecting, analyzing, and disseminating WX information. The impact of WX on the operation of aircraft and airports, and the reading, interpretation and analyzing of weather reports.

AVMG 302 Aerospace Law, Legislation, and Regulation 3
Legal and regulatory basis for operating and managing airlines and airports.

AVMG 303 Private Pilot Ground Instruction 1
Familiarization with the theory of flight, aircraft systems, air traffic control, meteorology, FAA regulations, navigation, and the physiology of flight.

AVMG 304 **Practicum in Flight Instruction** **1**
Familiarization with aircraft operation during take-off, flight, and landing; illustrating role of supporting activities such as weather service, enroute air traffic control, terminal air traffic control, maintenance and other services.

AVMG 403 **Airport Operations Management** **3**
Sources of revenue, budgeting, cost estimation, environmental concerns, airport certification, relationships with fixed-base operators, contracts, liability and insurance, location, design, and development, safety management, and facility acquisition and maintenance.

AVMG 404 **Airline Operations Management** **3**
Structure of the airline industry, economics of air carrier routes, air carrier safety requirements, economics of cargo and passenger operations, and effectiveness and efficiency considerations in passenger and cargo operations.

AVMG 406 **Seminar in Aviation Problems and Policies** **3**
Real problems, through case studies, that have been faced and solved by airport and airline managers. This course will include an analysis of both quantitative and qualitative problems.

Business Management

To assist graduates in preparing to meet the diverse challenges of personal as well as professional life, all students taking the program of study in business management receive a broadly based general management education before specializing in an area of professional concentration.

Of the 123 semester hours required for the B.B.A. degree in business management, 48 hours should be in management and economics courses, and at least 56 hours in courses other than management and economics. Lower division requirements have been spelled out in the introductory section to the College of Management. Third and fourth year requirements consist essentially of three parts. A general description of the content and the approximate number of hours to be included in each part is presented below.

I. Basic Management Core 39 hours

The basic core is to provide students with the common body of knowledge in management. Student programs will include courses of instruction dealing with the following areas:

(a) concepts, processes, and institutions in marketing and distribution, production, and financing functions of business enterprise;

(b) economic and legal environment of business enterprise along with consideration of the social and political influences on business;

(c) concepts and methods of accounting, quantitative methods, and information systems;

(d) organization theory, interpersonal relationships, control and motivation systems, and communications;

(e) administrative processes under conditions of uncertainty including integrating analysis and policy determination at the overall management level.

II. Professional Concentration Core 12 hours

Opportunities for advanced work or emphasis in some of the subject areas will be provided consistent with the student's and College of Management's objectives and capabilities. Available areas of emphasis include decision science, management, marketing, or logistics.

III. Free Electives 12 hours

Junior and senior students may select four or more hours of additional, unconstrained electives, depending on the electives taken at the freshman or sophomore level.

Courses in Management

MNGT 310 **Manpower Management and Human Relations** 3

Manpower management in developing effective work teams in organizations. Examine administrative problems in business including organization and structure; morale and motivation; power and authority; status and hierarchy.

MNGT 312 **Personnel Functions** 3

Principles and practice in personnel relations from topics such as recruitment practices, employee training, wage and salary administrations, and manpower planning.

MNGT 320 **Labor-Management Relations** 3
Introduction to current employment relationships. Comparison of union-management objectives, functions and structures. Labor history, collective bargaining, industrial conflict and wage problems will be discussed.

MNGT 322 **Industrial Relations and Collective Bargaining** 3
Problems in interpretation and administration of collective bargaining agreements, their negotiation and administration, and other methods for settling disputes.

MNGT 324 **Labor Legislation** 3
Analysis of pertinent legislation pertaining to the labor movement and to manpower management. Topics selected from areas such as the Taft-Hartley Act, anti-injunction statutes, fair employment practices and government contract law.

MNGT 325 **Organizational Interpersonal Dynamics** 3
Development and application of problem solving concept to managerial situations in decision making and in superior-subordinate relations. Experiential training techniques are used to highlight concepts, methods, and skills.

MNGT 340 **Operations Management** 3
Introduction to mathematical models in the context of manufacturing management. Linear models, financial decision models, production planning models (product mix and transportation), line balancing, production smoothing and forecasting. Prerequisite: DSCI 301.

MNGT 341 **Intermediate Operations Research** 3
Continuation of MNGT 340, includes linear and dynamic programming and an introduction to stochastic processes in operations management. Prerequisite: MNGT 340.

MNGT 360 **Management Concepts and Organization Theory** 3
Fundamental concept of management including topics such as principles of administration, modern organization theory, goal setting and leadership and decision making.

MNGT 361 **Introduction to Research** 3
Multi-disciplinary introduction to the research process: a critical examination of both library and field research, a supervised team research project. Prerequisite: basic course in student's area of specialization and DSCI 301 or equivalent.

MNGT 366 **Management Policy** 3
An integrating course embracing all management functions. Cases, simulation and projects are used as subjects for analysis. Prerequisite: senior standing.

MNGT 411 **Physical Resource Management** 3
An analysis of world resources in terms of how they are created and managed for social achievement and cultural progress.

MNGT 419 **Seminar in Personnel Administration** 3
Advanced study of current problems in personnel administration. Topics to be announced each semester. Contact department for further details. Prerequisite: senior standing.

MNGT 429 **Seminar in Labor Management Relations** 3
Advanced study of current problems in labor management administration. Topics to be announced each semester. Contact department for further details. Prerequisite: senior standing.

MNGT 457 **Association Management** 3
Associations in societal and community development emphasizing management planning, directing and managing volunteer labor found in associations and related activities, and considerations of association in attaining individual, company and corporate goals.

MNGT 460 **Problems in Small Business Management** 3
Fundamental concepts, theories and practices of small business management. Supervised projects with local firms will be conducted using student teams, faculty and other resources. Prerequisite: permission of instructor

MNGT 600 **Basic Administration** 3
Provides a synthesis of traditional and behavioral approaches to studying management. Topics covered include the management process, management history and organizational behavior.

MNGT 610 **Organization Dynamics Workshop** 3
Investigation of impact of organization structures and processes on the performance of members of organizations. Role playing, simulations and case studies will be used.

MNGT 612 **Human Resource Management** 3
Management of human resource in an organization. Topics such as manpower planning and development, organizational climate and the provision of personnel services will be investigated.

MNGT 615 **Organization Development and Change** 3
Problems surrounding the introduction of change in organizations, theory and methods of intervention used in organization development will be studied.

MNGT 622 **Industrial Relations** 3
Theories, policies and practices in manpower management are examined with emphasis upon more sophisticated employment of the behavioral sciences in labor relations management, organization, administration and staffing.

MNGT 660 **Organization Theory** 2
Internal organization structure and executive roles and functions in the business enterprise and other goal-directed institutions.

MNGT 663 **Management Systems Theory** 3
Integrates various disciplines of management. Emphasis on information-decision systems, computational and behavioral decision making, systems of managerial planning and organizational control. Prerequisite: graduate standing and permission of instructor.

MNGT 666 **Management Policy and Integration** 3
Organizational policy and strategy. Cases on responsibilities of general management and problems that affect the character, success and future of the total enterprise.

Courses in Decision Science

DSCI 301 **Introduction to Statistics** 3
Elementary knowledge, attitudes, and skills in the areas of descriptive statistics, statistical inference, regression and correlation analysis. Prerequisite: demonstrate proficiency in algebra (should be taken prior to 400 level courses)

DSCI 302 **Intermediate Statistics** 3
Specialized hypothesis testing (ANOVA and Chi-Square), and extensive and intensive coverage of statistical decision theory in its economic context. Prerequisite: DSCI 301.

DSCI 409 **Seminar in Decision Science** 3
Senior Seminar in the quantitative management sciences concentration for the B.B.A. degree. Some extensions of methodology, but principally a study of real-world applications of the decision sciences.

DSCI 600 **Advanced Statistics for Managers** 3
Programmed self-study in basic statistics, hypothesis testing review, statistical decision theory and multiple correlation and regression analysis. Computer statpack library routines, case-work in managerial decision making.

DSCI 603 **Analytical Models for Decision Making** 3
Review and extensions of deterministic linear programming, networks and dynamic programming. Emphasis on formulation and utilization of programming computer packages. Special topics as requested.

DSCI 608 **Decision Science Models in Aviation** 3
Programming and statistics to analyze, plan and control various aviation operations activities. Prerequisite : permission of the instructor.

DSCI 611 **Decision Sciences Models for Accounting and Finance** 3
Same as ACCT 611.

DSCI 613 **Quantitative Analysis for Marketing Decisions** 3
Same as MRKT 613.

Courses in Marketing

MRKT 310 **Marketing Management** 3
Marketing planning and decision-making from the viewpoint of the business executive, utilizing the interactive elements of product, price, promotion, and physical distribution. Prerequisite: knowledge of economic principles.

MRKT 311 **Marketing Communications** 3
Management processes of the components of marketing communication, including advertising, sales promotion, personal selling, and some marketing aspects of public relations activities for consumer and industrial goods. Prerequisite: MRKT 310.

MRKT 314 **Physical Distribution Management** 3
Analysis development and management of integrated physical distribution systems with in-depth cons iderations of transportation, warehousing, inventory control, material handling, and industrial location.

MRKT 315 **Consumer Behavior** 3
Basic concepts of consumer behavior. The course focuses on psychological, sociological, and economic variables, and analyzes their effects on purchasing behavior. Prerequisite: MRKT 310 and 311.

MRKT 316 **Marketing Channel Systems** 3
Appraisal and diagnosis, organization, and planning, action, and control of commodity and product–service distribution systems, marketing analysis and demand stimulation. Prerequisite: MRKT. 310 and 311.

MRKT 414 **Marketing Research and Information Systems** 3
Behavioral sciences, research methods, social processes, and structure influences upon marketing activities; and their integration as a total system of marketing action. Prerequisite: MRKT ,310, 311, and knowledge of basic statistics.

MRKT 415 **Introduction to Marketing Models** 3
Role of quantitative models in the design, implementation, and adjustment of seller strategy. Topics covered include market simulation, forecasting models, optimization models, and dynamic programming. Prerequisite: MRKT 414 or equivalent.

MRKT 418 **Business Logistics** 3
Treats logistics/transportation problem-solving, highlighting quantitative decision models from the viewpoints of market planners, system analysts, and inventory, traffic, distribution and warehousing considerations. Prerequisite: MRKT 314.

MRKT 600 **The Marketing Process** 2
The marketing process is analyzed along with its underlying concepts. The information needed to serve the process is explored and the incorporation of marketing decisions into the management function is demonstrated.

MRKT 610 **Marketing Strategy and Theory** 3
Macro and micro-marketing systems and the various approaches to marketing strategy and theory. Prerequisite: admission to M.B A. core program.

MRKT 611 **Advanced Research Methods in Marketing** 3
Training and application in quantitative and behavioral approaches to marketing research. Emphasis on evaluation of alternative designs, execution of problems, and interpretation of data. Prerequisite: MRKT 414, 610, or equivalent.

MRKT 612 **Consumer Decision Processes** 3
Analysis of information flows between buyer and seller; informational properties of demand stimulation strategies are considered from the viewpoint of the firm, consumer, and society. Prerequisite: MRKT 610.

MRKT 613 **Quantitative Analysis for Marketing Decisions** 3
Analytic quantitative models of various aspects of the firm's marketing environment and of models of marketing decision problems, including uses of such models as a basis for marketing decisions. Prerequisite: MRKT 610, DSCI 603.

MRKT 614 **Seminar in Physical Distribution Management** 3
Integrates business logistics/physical distribution concepts with fields of production, marketing, accounting and transportation, drawing upon the disciplines of applied mathematics, organizational behavior, resources and economics. Prerequisite: MRKT 610.

MRKT 615 **Seminar in Marketing Problems** 3
Problems in product assortment and development, pricing, packaging, branding, and sales forecasting. Coordination of these decisions with other decision areas of the firm through case analysis. Prerequisite: MRKT 610.

Economics

The program of study in economics is designed to prepare economists as well as to serve other disciplines such as management, engineering, government, education, sociology or history. Economics is a study of two broad areas: (1) Microeconomics is an area of study applicable to any study of human endeavor where scarce resources must be allocated among competing uses; it is the study of man's behavior in producing, exchanging, and consuming material goods and services he wants. (2) Macroeconomics is the study of such problems as inflation, unemployment, and the rate of economic growth, i.e. the performance of the economy as a whole. The program at UT Permian in both areas emphasizes forecasting so that the individual, firm, and governmental bodies may adjust to forthcoming economic conditions.

A basic understanding of economics is essential for well-informed citizenship since most of the specific problems of the day have important economic aspects.

It is also a vital discipline for and is of practical value in business decision making. An understanding of the overall operation of the economic system puts the businessman in a better position to formulate his policies.

In spite of its practical benefits, however, economics is primarily an academic, not a vocational, subject; it is not a how-to-make-money area of study. In economics problems are examined from the social, not from the individual, point of view.

The undergraduate major in economics helps prepare students for participation in public affairs, for positions in business firms and for government service. It provides a strong foundation for pre-law students and for further graduate study leading to teaching and research positions in universities, governments, and private enterprise.

Third and fourth year degree requirements consist essentially of four parts. A general description of the content and the approximate number of hours to be included in each part is presented below:

I.	Quantitative Techniques	6 hours
II.	Free Electives	15 hours
III.	Minor Field Outside of Economics	18 hours
IV.	Concentration in Economics	24 hours

Courses in Economics

ECON 303 **Microeconomics** 3

Examines the underlying assumptions of rational consumer behavior as well as the expected actions of the profit motivated firm under perfect and imperfect competitive conditions.

ECON 304 **Market Structures and Economic Efficiency** 3
Effects of various market structures on efficiency, growth, employment and innovation, and the government's role in promoting the achievement of economic goals.

ECON 314 **Physical Distribution Management** 3
Same as MRKT 314.

ECON 320 **Labor-Management Relations** 3
Same as MNGT 320.

ECON 322 **Commercial Banking** 3
Same as FIN 322.

ECON 406 **Economic History** 3
Histories of the economic development of various present day industrial societies highlighting economic issues presented by the Industrial Revolution in Europe and of the United States.

ECON 407 **Econometrics** 3
Focus is on applied econometrics in estimating and testing simple multiple, and simultaneous equation models, including problems of multicollinearity, autocorrelation, and generalized least squares.

ECON 411 **Physical Resource Management** 3
Same as MNGT 411.

ECON 423 **Macroeconomics: Financial Forecasting** 3
Theory of employment, price level and growth rate. Case studies emphasizing relationship between accepted theories and actual data in recent years. Issues raised by controls.

ECON 600 **Economic Analysis** 2
Presents an analysis of economic efficiency and the determinants of the major economic aggregates such as growth, employment, and GNP.

ECON 602 **Forecasting Business Conditions** 3
Elements and evaluation of principle forecasts used by business and government, using cases based on forecasts by the President's Council of Economic Advisors. Prerequisite: six hours of undergraduate economics.

ECON 603 **Microeconomic Analysis** 3
Analysis of optimal consumer and producer behavior under various market conditions using the mathematical techniques of calculus, linear programming and game theory. Prerequisite: calculus.

Law Enforcement

The law enforcement program is designed for preparation of beginning police officers and for further upgrading and broadening of inservice police officers.

Third and fourth year degree requirements consist of seven parts. A general description of the content and the approximate number of hours to be included in each part is presented below.

I.	Social Science Electives	9 hours
II.	Psychology Electives	6 hours
III.	Government Electives	6 hours
IV.	Management Electives	6 hours
V.	Computer Aspects of Management Information Systems	3 hours
VI.	Free Electives	15-21 hours
VII.	Law Enforcement Studies	15 hours

Courses in Law Enforcement

LWEN 300 **Police in America** 3
An analysis of the police and their function in America. Problems confronting the policeman on the beat, the police administrator, and the public.

LWEN 301 **Functions and Process of the Criminal Law** 3
How criminal law is formed, the underlying philosophy of criminal law, and the limitations of criminal law.

LWEN 302 **Problems of Evidence** 3
Legal problems involved in the gathering and presentation of evidence in light of recent Supreme Court decisions. Prerequisite: a course in physical evidence or employment as a peace officer.

LWEN 305 **Organized Crime and Police Corruption** 3
Causes of organized crime, its history and its relationship to law and law enforcement. Effects of organized crime on the individual police officers and police organizations.

LWEN 398 **Senior Seminar** 3
Applications of law enforcement concepts to real problems of police officers.

Law Enforcement Management

Law enforcement systems are being called on as never before to respond to society's needs. In the light of these challenges, responsible law enforcement leaders are examining, evaluating, and even reformulating their roles, philosophies of justice and ethics, and management practices.

The program in law enforcement management is to prepare individuals for administrative careers in police and other similar or related organizations. Contemporary and historical issues in the field will be explored.

Insofar as feasible, students should have police or other law enforcement experience before enrolling in this program. However, those without such a background will be admitted and encouraged to obtain appropriate experience while completing the degree program in law enforcement management. The curriculum will direct capable individuals toward positions of information systems analyzer, department head, lieutenant, captain, assistant chief of police, and chief of police. Students may also prepare for management positions in correctional institutions, court administration, and other agencies related to law enforcement.

Third and fourth year degree requirements consist essentially of four parts. A general description of the content and the approximate number of hours to be included in each part is presented below.

I. Social Science — 12 hours

II. Free Electives — 9 hours

III. Basic Management Core — 27 hours

The basic core is to provide students with the common body of knowledge in management. Student programs will include courses of instruction dealing with the following areas:

(a) concepts, processes, and institutions in marketing and distribution, production, and financing functions of business enterprise;

(b) economic and legal environment of business enterprise along with consideration of the social and political influences on business;

(c) concepts and methods of accounting, decision science, and information systems;

(d) organization theory, interpersonal relationships, control and motivation systems and communications;

(e) administrative processes under conditions of uncertainty including integrating analysis and policy determination at the overall management level.

IV. Law Enforcement Management Core — 12 hours

Opportunities for advanced work in law enforcement management will be provided consistent with the student's and the College of Management's objectives.

LEMG 398 **Senior Seminar** 3
Applications of law enforcement management concepts to real problems in police management. Prerequisite: senior standing in law enforcement management.

LEMG 400 **Law Enforcement Organization: Theory & Practice** 3
Problems inherent in managing men in a high-risk occupation and the applicability of production models and service models or organization. Practice in formulating policies in light of these two models.

LEMG 403 **Police Planning and the Community** 3
Survey of population density and income in relationship to crime. The uses of research in determining organizational structure and goals. Relationships between city planning and the problems of policing a city.

LEMG 407 **Applications of Science and Technology to Law Enforcement** 3
Use of search patterns, cryptography, metal identification, computers, pathology, predictability, ultrasonics, lasers, detecting devices, radioactive materials, escape matrix, chemical analysis, ballistics, hazardous materials and radio communications.

College of Science and Engineering

The College of Science and Engineering provides a unique opportunity for students to develop individualized study programs in chemistry, computer science, control engineering, earth science, life science, mathematics, and physics leading to a Bachelor of Science degree. A Master of Science degree in engineering is also available. Each student will develop a custom-made plan of study for his degree program in which interdisciplinary areas of concentration are encouraged. The goal of the College is to provide a learning program that best serves a student's interests and ability.

The learning activities in the College are widely varied to provide an exciting learning environment. These include individually paced study based on modules divided into many short learning units mixed with group instruction and interaction and opportunities to engage in real life project activity through off-campus field studies, experiential assignments in industry and the community, and self-initiated research projects. The laboratories are designed as a self-access "library" of experimental equipment whose instruments and specialized facilities are available to all students in all disciplines for individual research and experimentation.

To help the student design a meaningful plan of study, a faculty member is designated as career consultant and mentor (adviser). The faculty adviser usually works with the student throughout his career as a student in the College of Science and Engineering.

Certain basic requirements for receiving a degree have been specified elsewhere in this catalog and provide the basis for developing a plan of study. In addition to these a series of learning objectives has been identified by the faculty. These learning objectives are considered fundamental to the earning of a degree and are as follows:

1. Prepare and present to colleagues in his area of concentration an oral report of an original research study or a proposed design study, including the rationale for the study.
2. Prepare a written report of an original research study or a proposed design study from his area of concentration, including the rationale for the study.

3. Prepare a bibliography and summary for a currently "hot" topic in his area of concentration that has not been referenced in the usual journals and literature sources.
4. Predict possible consequences, impact, and/or limitations of governmental policies and culture on science and science policy.
5. Predict possible impact (economic, social, political) of an innovation, invention, technological change or policy on life and society.
6. Design and demonstrate the use of a set of instructions that bring about the acquisition of a specified competence from the area of concentration.

A program of study designed to achieve these learning objectives is built around a major selected by the student. A part of the student's studies in this area is devoted to contract study, providing learning opportunities in areas for which studies have not been developed as formalized courses, and authentic involvement in which the student will become actively involved in real-life problems.

Other components of the plan of study consist of a minor and perhaps a supporting cluster of studies from fields other than his major plus electives from the arts, humanities, and social sciences. Generally the student will still have the opportunity to select additional studies in areas of his choice, providing he has the necessary background.

DEGREE REQUIREMENTS

The Bachelor of Science degree in the College of Science and Engineering requires a minimum of 120 credits, including, except for engineering, a minimum of 24 semester credits in the major plus a minor of at least 18 semester hours. The specific requirements depend upon the study areas and the educational objectives of the student. At least 12 credits in the major and six in the minor must be completed at the upper level. For interdisciplinary programs, in addition to the satisfaction of major and minor requirements in two disciplines, the student can plan a program to meet his particular needs. The major may be included in an area of concentration which involves the major and cognate studies.

Lower Division Requirements

The Core Curriculum set forth by the Coordinating Board, Texas College and University System, will be accepted in its entirety and applied toward appropriate degrees. All students planning to transfer to the University in life

science, earth science, chemistry, physics, computer science, mathematics and engineering should have completed the following courses:

English Composition	2 courses
Federal and State Government	2 courses
Literature	2 courses
U.S. History (one may be Texas History)	2 courses

The English and government courses must be taken at the lower division level but literature and history may be taken at UT Permian if necessary. One course each from one or more of the following list may be transferred as acceptable electives in any of the degree programs:

Fine Arts
Psychology
Sociology
Anthropology
Speech
Philosophy
Economics

For each specialized degree program in the College of Science and Engineering there are specific lower division courses that are required or highly recommended to have been completed before transferring to the University:

Chemistry

General Inorganic Chemistry	2 courses	Required
Physics (preferably with calculus)	2 courses	Required
Mathematics (through college algebra)	1 course	Required
Biological Sciences	1-2 courses	Required
Calculus	2 courses	Recommended
Minor Field of Study	2-3 courses	Recommended

Earth Science

General Inorganic Chemistry	2 courses	Required
Mathematics (through college algebra)	2 courses	Required
Geology (physical and historical)	2 courses	Required
Biological Sciences	1-2 courses	Required
Calculus or Statistics	1 course	Recommended
Minor Field of Study	2-3 courses	Recommended

Physics

Calculus	2 courses	Required
Physics (calculus based)	2 courses	Required
Biological Sciences	1-2 courses	Required
Chemistry	2 courses	Recommended
Geology	2 courses	Recommended
Minor Field of Study	2-3 courses	Recommended

Life Science

Mathematics	1-2 courses	Required
Biology	2 courses	Required
General Inorganic Chemistry	2 courses	Required
Organic Chemistry	2 courses	Recommended
General Physics	2 courses	Recommended
Minor Field of Study	2-3 courses	Recommended

Mathematics & Computer Science

Calculus and Analytic Geometry	2 courses	Required
Biological Sciences	1-2 courses	Required
Physical Sciences	1-2 courses	Required
Computer Language (for Computer Science)	1 course	Recommended
Calculus of Several Variables	1 course	Recommended
Minor Field of Study	2-3 courses	Recommended

Engineering

Calculus	2 courses	Required
General Inorganic Chemistry	2 courses	Required
Physics (calculus based)	2 courses	Required
Engineering Mechanics (statics)	1 course	Recommended
Engineering Graphics	1 course	Recommended

A student who is majoring in mathematics or one of the sciences should complete more credits in his major than the minimum listed above. In completing the 60 credits required for admission the student should complete 9-12 credits in his major and 6-9 in his minor, plus electives within a total of 60-66 lower division credits.

While it is to the student's advantage to complete all of the required courses before transferring, it is not necessary that he do so. If he has completed 60 credits but still lacks some of the required courses, he may be admitted to the University and complete those courses after transferring.

If a student finds after enrolling at the University that he requires a freshman or sophomore course, it will be possible for him to take that course at a nearby junior college.

PROGRAMS OF STUDY

The primary areas of concentration or majors within the College are chemistry, computer science, earth science, engineering, life science, mathematics, and physics. The student may develop his own interdisciplinary program with the counsel of his faculty adviser. Program variations are possible within the degree programs of the College because some studies are related primarily to a single discipline whereas others are closely allied to several and will be jointly developed by the faculties.

Each student is expected to include a minimum of three credit hours of authentic involvement activity in his degree program. An authentic real-life experience, working in real-life conditions and constraints involving oral and written communications, project planning, and organization, is inherent in this participating approach. The University will provide adequate supervision and consultation in coordination with the cooperating organization to ensure the students gain appropriate experience and produce a credible study.

Within the following disciplines, many of the subjects are listed with variable credits. This is to provide the versatility necessary for the development of individualized plans of study satisfying the student's educational objectives. For example, a student requiring five hours of organic chemistry for entrance into a specific medical school can have his program designed so that he does not need to take two four-hour courses for a total of eight hours. These subdivisions are made possible through the development of self-paced courses of study.

Chemistry

Studies in chemistry offer an opportunity to develop the ability to solve problems and think creatively in a dynamic field of human endeavor. Chemistry provides an area of concentration:

(a) for students interested in extending their knowledge of the methods and content of the science as a part of a liberal education;

(b) for preparation for graduate study in chemistry, biochemistry, medicine, dentistry, medical sciences, and law;

(c) for students interested in careers in industrial or government laboratories as well as industrial positions in technical sales, production, or management;

(d) for students interested in secondary school teaching careers;

(e) for students interested in careers in environmental science.

Normal programs of study leading to a Bachelor of Science degree will consist of a minimum of 32 semester hours in chemistry (upper and lower level). Those students in teacher education and interdisciplinary studies may complete the minimum of 24 credits.

Each plan of study requires one academic year of physics and calculus and includes a minimum of 20 hours in general, organic, and physical chemistry. The remaining 12 hours will be devoted to advanced studies.

Independent study and learning through research-type situations are strongly encouraged. Learning experiences in the classroom and laboratory are reinforced through participation in actual job situations as a part of the authentic involvement program. Interdisciplinary areas of concentration such as chemistry-life science, chemistry-physics-mathematics, etc., are available.

Admission to study in chemistry requires the equivalent of eight semester hours in general chemistry.

Courses in Chemistry

CHEM 300 **Chemical Systems** **1-3,**
An integrated course involving the principles of physical–analytical chemistry.

CHEM 303 **Mathematical Methods in Chemistry**
A survey of some of the mathematical methods important in the study of physical chemistry including calculus, differential equations and vector algebra.

CHEM 311 **Organic Chemistry I** **4**
An introductory course in organic chemistry. Emphasis on reaction pathways, stereochemistry, structure-reactivity relationships, synthesis and spectroscopic methods. Includes laboratory. Prerequisite: one year of general chemistry.

CHEM 312 **Organic Chemistry II** **4**
A continuation of Chemistry 311 including an introduction to molecular biochemistry. Laboratory work involves qualitative organic analysis.

CHEM 324 **Quantitative Analysis** **4**
An introduction to volumetric, gravimetric, and colorimetric quantitative measurements including the use of pH meters and spectrophotometers. Prerequisite: one year of general chemistry.

CHEM 351 **Molecular Biochemistry** **3**
An introductory course in molecular biochemistry. Emphasis on pathways of enzymatic reactions. Prerequisite: CHEM 312.

CHEM 361 **Physical Chemistry I** 3
An introductory course in physical chemistry. Topics include kinetic molecular theory, molecular thermodynamics, and an introduction to molecular energies.

CHEM 362 **Physical Chemistry II** 3
A continuation of Chemistry 361 introducing kinetics, quantum mechanics, and molecular spectroscopy. Prerequisite: CHEM 361.

CHEM 366 **Experimental Physical Chemistry** 1-3
An integrated physical science laboratory course including thermodynamic, kinetic, and spectroscopic measurements. High vacuum techniques and the use of sophisticated equipment are stressed in the measurement of molecular data. May be taken concurrently with CHEM 361.

CHEM 375 **Industrial Chemistry** 3
A survey of commercially important chemical reactions, raw materials, processes, and costs.

CHEM 380 **Polymer Chemistry** 3
An introduction to the theory and methods of polymer chemistry.

CHEM 395 **Introduction to Research** 1-3
An introduction to the research techniques of chemistry including the investigation of an original problem. Prerequisite: permission of the instructor.

CHEM 410 **Physical Organic Chemistry** 3
An introduction to theoretical organic chemistry with emphasis on reaction mechanisms, molecular orbital theory and photochemistry. Prerequisite: CHEM 312, 362.

CHEM 426 **Instrumental Analysis** 4
Theory and practice of modern analytical methods including electroanalytical techniques, quantitative spectrophotometry, and radiochemical methods. Prerequisite: CHEM 361 or consent of instructor.

CHEM 428 **Electronics for Scientists** 3
An experimental course dealing with the use of basic instrumentation in electrochemical, chromatographic, and spectroscopic analysis.

CHEM 460 **Molecular Spectroscopy** 3
Involves the quantum theory and interpretation of the molecular spectra of small molecules. Includes rotational, vibrational, and electronic spectroscopy with an introduction to group theory. Prerequisite: CHEM 362.

CHEM 466 **Statistical Mechanics** 3
An introduction to the fundamentals of statistical thermodynamics and their applications to simple chemical systems.

CHEM 472 **Organic Structure Determination** 3
An experimental course focusing on NMR, IR, UV and mass spec methods for the determination of the structure of organic compounds. Prerequisite: CHEM 312.

CHEM 474 **Inorganic Chemistry** 3
An advanced course in inorganic chemistry including chemical bonding, inorganic reaction pathways, and inorganic synthesis. Prerequisite: CHEM 312, 361.

CHEM 478 **Chemical Synthesis** 3
An experimental course involving the synthetic techniques of organic and inorganic chemistry, including the use of chemical instrumentation and literature. Prerequisite: CHEM 312, 430.

Computer Science

Computer science studies are interdisciplinary, involving computer science, management, and mathematics. These studies are designed for students interested in gaining a broad knowledge of the computer and developing an ability to design and analyze computerized software systems and use them in organizations and businesses that employ computer services in their day-to-day operations.

The plan of study will be tailored to satisfy the career objectives of the student. Two basic plans, each leading to a Bachelor of Science degree, are available—one scientific and one business oriented. The two programs share a basic set of studies providing a foundation for specialization. The scientific program option is oriented toward the inner workings of programming languages and compilers and applications of the computer to the student's choice of program emphasis. The business option is oriented toward the design, specification, and construction of information processing systems.

Admission to the computer science program presumes the student to have the equivalent of an introductory course in computer science and data processing and familiarity with at least one programming language. Before graduating, the student will be required to demonstrate his ability to use both a

scientific and a business oriented programming language.

While the minimum number of credits for a major is 24, the normal program of study will consist of approximately 30 semester credits in computer science and related subjects. Basic studies in computer science will encompass file organization, communication based computer systems, information processing systems, computer operating systems, and basic simulation and model building. Courses in statistics, calculus, and operation research are also recommended. Additional studies contributing to the degree in computer science may be selected from mathematics and management on approval of the faculties involved.

Courses in Computer Science

CPSC 300 **Computer Organization** 3
Functional organization of computer systems and the relationships of software components to their operating systems. Included are such topics as channel controller, interrupts and addressing. Prerequisite: knowledge of a programming language and an introductory course in computers.

CPSC 310 **Information Systems Design** 3
The evaluation of a business system from problem analysis to implementation of the system on an appropriate hardware configuration. Included are such topics as feasibility study, record and file definition, forms design (input and output), establishment of procedures. Testing/conversion, documentation, evaluation and review, and organization.

CPSC 320 **Data Structures** 3
Data structures, concepts and algorithms used in problem solving. Topics include basic representation of data, linear and tree structures, computer storage allocation and ordering techniques.

CPSC 333 **Information Storage and Retrieval** 3
Societal impact of automation, basic number logic, data representations. Flow charting and structure of computer programs for data handling. Overview of the use of computers in business and management of data processing.

CPSC 341 **Intermediate Operations Research** 3
Same as MNGT 341.

CPSC 350 **Simulation** 1-3
Same as SCEN 350.

CPSC 360 **Operating Systems** 1-3
Investigation of batch process systems programs, their components, operating characteristics, user services and limitations. Included are multi-programming systems and parallel processing techniques.

CPSC 410 **Programming Languages** 1-3
Study of characteristics of a variety of programming languages with attention to the way these characteristics affect applications. Formal syntactic definition of language and rules for interpretation. Prerequisite: Working knowledge of one assembly language and one algorithmic language.

CPSC 411 **Management Information Systems** 3
Same as ACCT 411.

CPSC 412 **Systems Analysis and Design** 3
Same as ACCT 412.

CPSC 420 **Numerical Analysis** 1-3
Same as MATH 420.

CPSC 430 **Information Processing Procedures** 3
Aspects of natural language processing on digital computers. The analysis of information content by statistical, syntactic and logical methods. Search and matching techniques. Axiomatic retrieval systems, question-answering systems. Evaluation of retrieval effectiveness and efficiency. Prerequisite: data structures, data storage and retrieval.

CPSC 440 **Minicomputers** 3
Hardware and software design of minicomputer systems. Survey of available systems. Microprogramming techniques.

Earth Science

Studies in earth science, leading to a Bachelor of Science degree, can be tailored to provide preparation for a career in secondary school teaching, graduate work, careers in the petroleum or mining industries, and a variety of interdisciplinary programs. Programs of study leading to a Bachelor of Science consist of 30 or more semester hours in earth science (upper and lower level). Students in teacher education and interdisciplinary studies may complete the minimum of 24 credits. Variations in the student's plan of study allow for the selection of courses pertinent to his individual educational goals. Electives in earth science and related fields can be selected to complement and enhance the student's overall objectives.

It is recommended that students planning to specialize in earth science take courses in geology at the lower level with supporting studies in

mathematics, chemistry, and life science. Students interested in teaching earth science in the secondary schools will be able to design a program specifically to fit that career goal.

Independent study and authentic involvement activities are strongly encouraged. Learning experiences in the classroom are reinforced through participation in actual job situations supplemented by actual field experience. Field studies are used as a laboratory experience to develop models for investigating environmental changes through time which will then be analyzed with the goal of correlating past and present efforts. All earth science majors must complete a field geology course before graduation. This course, not given at UT Permian, may be taken during the summer at various schools within the State.

Interdisciplinary areas of concentration such as earth science-life science, earth science-chemistry or physics are available to students interested in areas such as paleontology, mineralogy, geochemistry, and geophysics. Such programs will be planned in consultation with the appropriate faculties. Supporting clusters of studies for students concentrating in earth science might include work in life science, physics, mathematics, space science, computer science, management, and anthropology and archaeology. These studies are specifically tailored to the individual's career goals.

Admission to study in earth science requires the equivalent of eight semester hours in physical and historical geology.

Courses in Earth Science

ERSC 300 **Structural Geology** **3**
Study of the principles and theories of structural geology. Special attention directed to include descriptions and interpretations of faults, folds and other structural features, and including the mechanics of rock deformation and basic global tectonics.

ERSC 310 **Petrology** **3**
Hand specimen study of the common minerals, and of igneous, metamorphic, and sedimentary rocks.

ERSC 311 **Mineralogy** **1-3**
Introduction to the study of minerals with an emphasis on identification, classification and origin based on physical and chemical properties.

ERSC 312 **Optical Mineralogy** **3**
Includes the theory of optical crystalography and the identification of mineral grains with the polarizing microscope by the determination of optical properties.

ERSC 320 **Sedimentology** 3
Introduction to the study of sedimentary rocks. Emphasis to be placed on the processes of weathering, transportation and deposition, and on the characteristic attributes of the more important types of sedimentary rocks.

ERSC 321 **Physical Stratigraphy** 3
Principles of stratigraphy and correlation problems. Special emphasis on the stratigraphic and paleotectonic development of North America.

ERSC 322 **Oceanography** 3
An introduction to the geological, physical, chemical, and biological aspects of the marine environment. Attention will be directed to the nature of the ocean bottom and processes of marine erosion and deposition.

ERSC 323 **Environmental Geology** 3
The relationships of earth science to human problems and the environment, especially directed to geological problems associated with mass urban growth.

ERSC 330 **Biostratigraphy** 3
A survey of the history and evolution of life based on the evidence of the fossil record.

ERSC 331 **Paleoecology** 3
Principles, concepts, and techniques of environmental analysis and interpretation of marine and terrestrial fossil ecosystems.

ERSC 340 **Mineral Resources** 3
An introduction to the geology, origin and general economics of mineral and fuel deposits.

ERSC 350 **Organic Build-ups Through Time** 3
A study of the principles relative to the origin, morphology, associated rock facies and characteristic biota of representative examples or organic buildups through geologic time.

ERSC 351 **Planetary Geology** 3
Concept and development of our solar system with particular emphasis on the results of recent space probes and manned lunar landings.

ERSC 352 **Geology of Arid Lands** 3
A study of the geomorphology of the world's arid regions. Salient features include climate, landforms, water, soils, natural vegetation, and the various delimiting factors relative to human occupancy.

ERSC 353 **Petroleum Geology** 3
Emphasis on the origin, nature, migration, and accumulation of petroleum. Course will be supplemented with studies of the discovery procedures and techniques, trapping mechanisms, and developmental procedures of previously discovered giant oil and gas fields.

ERSC 361 **Carbonate Petrology** 3
Description and classification of carbonate rocks with consideration of recrystallization, diagenesis, and porosity formation.

ERSC 370 **Micropaleontology** 3
Microscopic study of plant and animal remains and the principles underlying the use of such fossils relative to correlation problems. Emphasis to be placed on those fossil groups commonly recoverable from well drill cuttings.

ERSC 374 **Clastic & Carbonate Depositional Environments** 3
Emphasis on the development of concepts and techniques of paleoenvironmental analysis leading to interpretation of fossil terrestrial and marine ecosystems.

ERSC 376 **Geochemistry** 3
A study of the geologic and chemical processes that produced the observed distribution and abundances of the elements.

ERSC 378 **Geophysics** 3
A consideration of the gravitational, magnetic, thermal, electromagnetic, and seismic properties of the solid earth. Particular emphasis directed toward seismic methods relative to petroleum exploration.

Engineering

The Bachelor of Science degree in engineering is an interdisciplinary program combining basic competencies from all traditional engineering disciplines to prepare students for a versatile career opportunity in all industries. The program emphasizes development of career capabilities in control, systems, and automation along with project management.

The study program in engineering offers many unique opportunities. The program is conducted as an individualized learning management system operating on a continuous year-round basis. Individualized program planning allows each student, in consultation with an adviser, to construct a plan of study best suited to his own career goals. All study areas (courses) in the curriculum

are available for enrollment at any time the student is eligible to begin. In each study area the starting date, the amount of credit, the length of time to complete, and the specific objectives can be varied to meet the needs of each student.

Each study plan will include approximately 18 hours of work in mechanics, thermofluids, and systems analysis. An additional 12 to 15 hours will be devoted to advanced engineering mathematics and advanced engineering science electives. Approximately six hours of study plan may be devoted to experiential learning through team designed activities in authentic involvement projects from industry. Experiential activities may take place on or off campus and teams may include non-engineers. An additional nine hours of study in design, synthesis, management, and related topics may be selected to support the project activity.

Entering students are expected to have the equivalent of one year of study in differential and integral calculus, a year sequence in university physics and a course in chemistry. When necessary, these studies may be completed at a nearby junior college.

Selected courses in engineering can be used to develop a supporting cluster for majors in other fields. The courses available will depend on the student's preparation and should be selected in consultation with a member of the engineering faculty.

Courses in Engineering

ENGR 309 **Engineering Mechanics** **1-4**
Problems of equilibrium and motion in mechanical systems.

ENGR 310 **Mechanics of Materials** **1-4**
Methods of determining the stresses present in structural members under various types of loading.

ENGR 311 **Materials Science** **1-3**
Properties of engineering materials and the selection of materials for specific applications.

ENGR 320 **Systems Analysis I** **3**
A unified treatment of the models, responses and analytical descriptions of electrical, mechanical, thermal and fluid systems.

ENGR 321 **Engineering Systems Analysis II** **1-3**
Extension of the unified treatment of electrical, mechanical, thermal and fluid systems from ENGR 320 to more complex systems and more versatile techniques of analysis.

ENGR 330 **Thermo-fluid Science I** 3
The processes by which substances and mixtures undergo energy transformations to perform useful functions.

ENGR 331 **Thermo-fluid Science II** 1-3
The behavior of fluids both at rest and in motion within natural and man-made systems, emphasizing measurement and control of flow.

ENGR 332 **Thermo-fluid Science III** 1-3
Heat-transfer rate processes, involving the basic modes of thermal energy transfer: conduction, convection, and radiation; emphasizing measurement and control of temperature.

ENGR 333 **Thermo-fluid Science IV** 1-3
Thermodynamic processes extended to include multi-component systems with transformation of both matter and energy or other special applications.

ENGR 349 **Interaction of Technology and Society** 1-3
An exploration of historical and current actions and consequences resulting from the interrelationships of technology and social needs. Meets applied course requirements for arts and sciences majors.

ENGR 350 **Mechanisms** 1-3
Analysis and synthesis of mechanical motion transmission and motion generating systems.

ENGR 351 **Fluid Power Systems** 1-3
Theory and application of fluid systems in automation, control and power equipment.

ENGR 360 **Electronics and Machines** 1-3
Theory and application of electronic equipment and electrical machinery in instrumentation and control.

ENGR 361 **Computer Control Systems** 1-3
A treatment of the use of analog and digital computers as control components including applications in various areas.

ENGR 370 **Separation Processes** 2-3
Rate processes for separating components of mixtures, by the transfer of mass between phases of matter emphasizing equipment operation and control.

ENGR 371 **Chemical Reactor Operations** 2-3
Rate processes for transformation of matter by chemical reaction, emphasizing equipment operation and control.

ENGR 380 **Control System Design** 1-3
A unified treatment of the design of control systems which perform to given specifications and applications to industrial problems.

ENGR 385 **Project Management** 1-3
Manpower and resource allocation, personnel management, scheduling and organizational strategies for engineering projects.

ENGR 390 **Economic Evaluation** 1-3
Theory and application of economic principles in engineering decision processes.

ENGR 395 **Analytical Decision Processes** 1-3
Optimization methods and value theory in analytical decision making.

ENGR 400 **Energy Systems** 3
A quasi-technical seminar treating the effect of energy availability, distribution, and consumption upon the political, social and technical communities.

ENGR 401 **Pollution Control** 3
A quasi-technical seminar surveying the interacting efforts of the political, social, and technical communities in various aspects of environmental degradation and control past, present, and future.

ENGR 407 **Applications of Science and Technology to Law Enforcement** 3
Same as LEMG 407.

ENGR 479 **Advanced Materials Science** 3
Organic and inorganic engineering materials including their structures, mechanical and physical properties, application of materials, fabrication and heat-treating principles and failure mechanisms.

SCEN 301 **Measurements** 2-3
Equipment, methods, and theories for the successful application of experimental techniques in the student's area.

SCEN 350 **Simulation** 1-3
Techniques by which analog and digital computers may be used to simulate physical systems for analysis and design purposes including experience in analog and FORTRAN IV programming.

ENGR 610 **Advanced Strength of Materials** 3
A study of advanced methods for the determination of stresses in complex structures subjected to various types of loading.

ENGR 620 **Control Engineering** 3
Analysis and design of control systems utilizing hydraulic, pneumatic, electronic and chemical process equipment.

ENGR 621 **Process Dynamics** 3
A study of the unsteady-state behavior of systems typically found in the process industries, and methods for measurement and control of pertinent variables.

ENGR 660 **Modern Control Engineering** 3
A treatment of selected topics of modern control engineering including sample data control, state space analysis of control systems, nonlinear systems control, and optimization theory with applications to industrial problems.

ENGR 661 **Reactor Kinetics** 3
A study of the latest models and methods for engineering analysis of chemical reaction systems encountered in process industries.

ENGR 671 **Heat and Mass Transfer** 3
Individualized study of the latest analytical models and methods for solution of engineering heat and mass transfer problems. A general introductory core is followed by specialized study along a track of individual interest.

ENGR 673 **Advanced Thermodynamics** 3
A study of modern applications of engineering practice requiring thermodynamic analysis of inherent energy transformations.

Life Science

Courses in life science may apply to the Bachelor of Science degree with a major in life science, to a minor in life science, or as electives in other degree programs. The life science programs provide preparation for careers in college teaching, research in biology, agriculture, forestry, medicine, veterinary medicine, dentistry, and other health related fields, and for elementary and secondary school teaching.

Students who desire a major in life science should include one year of inorganic (general) chemistry, one year of biology, and one course of college algebra (or equivalent) in the credits transferred to UT Permian. One year of organic chemistry is also strongly recommended prior to coming to UT Permian, except students in elementary education. Students planning to enter professional or graduate schools should include a year of college physics in the credits transferred to UT Permian. Students who desire to use life science as the minor field of study should complete the equivalent of one year of biology prior to enrolling at UT Permian.

The Faculty of Life Science will help each student design a program of study to satisfy specific career objectives. In addition, specific courses such as Contract Study and Selected Topics in Life Science may be individualized to fit specific student needs and interests.

The study plan for life science majors includes approximately 30 semester hours in the major, with at least 12 hours of upper-level courses. The plan must contain study in genetics, organismic biology, and suborganismic biology, independent research, inorganic and organic chemistry.

Courses in Life Science

LFSC 300 **Microbiology** 2-4
The growth, morphology, metabolism, and genetics of bacteria and related organisms. Previous or concurrent enrollment in organic chemistry required.

LFSC 311 **Processes of Science** 1
Competencies that may be used in all areas of science are emphasized: observing and inferring, graphing and interpreting data, defining operationally, controlling variables.

LFSC 321 **Natural and Related Products** 3
The extraction, identification, and location of carbohydrates, lipids, nitrogenous compounds, and related materials in living systems, with emphasis on laboratory procedures. Primarily for elementary education students and non-life science majors. Prerequisite: one year of general chemistry.

LFSC 330 **Plant Morphology** 2
The structure, development, reproduction and relationships of the major plant groups.

LFSC 331 **Plant Physiology** 3
The nutrition, growth, and development of plants with special emphasis on vascular plants. Offered in 1974-75 and alternate years. Prerequisite: one semester of organic chemistry.

LFSC 340 **Genetics** 3
The structure and function of hereditary material with emphasis on recent developments in the field. Previous or concurrent enrollment in organic chemistry required.

LFSC 350 **Human Anatomy and Physiology** 4
Survey of human anatomical systems and their physiological functions with special emphasis on the skeletal, muscular, nervous, circulatory, and respiratory systems. Primarily for physical education majors.

LFSC 351 **Animal Physiology** 4
The development, function and mechanism of action of the major physiological systems in animals.

LFSC 352 **Vertebrate Biology** 4
The classification, phylogeny, anatomy, embryology, and natural history of vertebrates. Special emphasis on the vertebrates of West Texas.

LFSC 388 **Life Science Seminar** 1
Interactive small group discussions of varied topics in life science.

LFSC 400 **Microbial Genetics** 3
The mechanisms of genetic transfer, gene analysis, control mechanisms, and the structure and replication of bacterial viruses. Prerequisites: LFSC 300 and 340 or equivalent. Offered in 1974-75 and alternate years.

LFSC 401 **Virology** 3
The nature, identification, structure, replication, and biological importance of animal, plant, and bacterial viruses. Prerequisites: one semester of biology and organic chemistry.

LFSC 402 **Venereal and Other Diseases of Man** 1-3
A study of the major groups of disease-causing bacteria with special emphasis on organisms pathogenic to man. Open to non-majors.

LFSC 411 **Biostratigraphy** 3
Same as ERSC 330.

LFSC 420 **Cell Biology** 4
The structure, function, and integration of cell components. Prerequisite: one semester of organic chemistry.

LFSC 422 **Cytology-Histology** 3
Techniques in the preparation and interpretation of cytological and histological materials. Offered in 1975-76 and alternate years.

LFSC 423 **Immunology** 3
The techniques, mechanisms, and interpretations of immunological reactions. Offered in 1975-76 and alternate years.

LFSC 442 **Evolution** 3
An examination of population variation and mechanisms of evolution and speciation. Offered in 1974-75 and alternate years.

LFSC 443 **Human Genetics** 3
A survey of the mechanism of inheritance of human traits. Primarily for the non-life science major.

LFSC 444 **Evolutionary Ecology** 3
The evolution of ecological parameters with emphasis on population and community parameters. Offered in 1975-76 and alternate years.

LFSC 450 **Developmental Biology** 4
The embryogeny and development of structural and physiological systems. Offered in 1975-76 and alternate years.

LFSC 451 **Physiological Ecology** 2
The physiological adaptations to environmental conditions such as heat, cold, water stress, and altitude. Special emphasis on vertebrates. Offered in 1974-75 and alternate years.

LFSC 454 **Animal Behavior** 4
A study of the types and mechanisms of behavior in the major groups of animals.

LFSC 470 **Environmental Biology** 3
The principles of population and community ecology and their application to modern environmental problems.

LFSC 471 **Natural History of the Permian Basin** 1-3
The climatography, geography, flora, and fauna of the Permian Basin.

LFSC 475 **Field Biology** 1-6
Field problems in the Permian Basin. Offered in the summers only.

Mathematics

A Bachelor of Science degree is offered in mathematics. The program of study can be tailored to prepare the student for a career in elementary or secondary school teaching, for research in industry or government, or for entering graduate study.

A degree in mathematics requires a minimum of 24 semester hours exclusive of basic calculus and precalculus courses. Although variations in the plan of study will be made in keeping with an individual program, the major courses will include studies in linear and abstract algebra, probability and statistics, and an analysis course with differential and integral calculus prerequisites.

Mathematics electives will be selected in keeping with the educational objectives of the students.

A variety of alternatives for mathematics as a minor is possible. The specific courses recommended will depend upon the major and interests of the student. For those seeking certification in secondary education with a minor in mathematics, 24 semester hours are required including integral and differential calculus, linear algebra and algebraic structures, advanced geometry and probability and statistics. This provides the student with the mathematical background to teach algebra and geometry effectively in middle and secondary schools.

The student planning to complete his studies with a major in mathematics within the normal period of time should be able to demonstrate his proficiency in differential and integral calculus upon admission to the College.

Courses in Mathematics

MATH 300 **Mathematics for Elementary Teachers** 3
Basic set theory, axiomatic structure of the number system, foundations of arithmetic and informal geometry. A course designed for prospective elementary teachers.

MATH 301 **Statistics** 1-3
Basic concepts and applications of statistics, including probability, standard statistical distributions, descriptive statistics, testing of hypotheses, confidence intervals, linear regression and correlation. Same as DSCI 301, PSYC 301.

MATH 310 **Linear Algebra** 1-3
Vectors and vector spaces, matrices and linear transformations, eigenvalues, eigenvectors and canonical forms, and their applications.

MATH 315 **Algebraic Structures** 3
Elements of group, ring and field theories with emphasis on the ring of integers and polynomial domains.

MATH 320 **Calculus of Several Variables** 1-3
Differential and integral calculus of functions of several variables. Prerequisite: differential and integral calculus and permission of instructor.

MATH 330 **Differential Equations** 3
Solution of ordinary differential equations including power series and Laplace transform methods and systems of linear differential equations with applications.

MATH 350 **Topics in Geometry** 3
Cross ratio and other topics of modern geometry, elementary transformations, Euclidean constructions and an introduction to the non-Euclidean geometries of Riemann and Lobachevsky.

MATH 360 **Intermediate Analysis** 3
Rigorous treatment of limits, continuity and uniform continuity, derivatives, integrals and mean value theorems. Prerequisite: calculus.

MATH 401 **Probability and Statistics** 1-3
Mathematical investigation of basic properties of distribution functions and use of probability theory to determine critical regions for selected test hypotheses, including multiple and partial correlation, analysis of variance, and non-parametric procedures. Prerequisite: calculus and MATH 301.

MATH 410, 411 **Modern Algebra I, II** 3,3
Basic properties of groups, rings and fields, including homomorphism theorems. Theory of vector spaces and modules, including linear transformations, matrices and canonical forms. Prerequisite: MATH 310, 315.

MATH 415 **Theory of Numbers** 3
Divisibility of integers, congruence, quadratic residues, Diophantine equations and continued fractions. Prerequisite: MATH 315.

MATH 419 **Applied Mathematics** 1-3
Theory and application of ordinary and partial differential equations, including special functions, transform methods, Fourier series, calculus of variations and vector calculus. Prerequisite: MATH 330.

MATH 420 **Numerical Analysis** 1-3
Survey of numerical methods for solution of initial value problems, transcendental equations and systems of linear equations. Interpolation, averaging and quadrature processes. Error analysis stressed. Prerequisite: MATH 310, 330 and knowledge of a programming language.

MATH 460, 461 **Advanced Calculus I, II** 3,3
Introduction to real analysis, including convergence of sequences and series of real numbers and of functions, Riemann-Stieltjes integrals and elementary theory of the Lebesgue integral. Prerequisite: MATH 360 or permission of the instructor.

MATH 470 **Complex Variables** 1-3
Introduction to complex analysis, including analytic functions, power series, residues and conformal mapping. Prerequisite: calculus.

MATH 480 **Topology** 3
Introduction to general topology, including continuity and compactness, connectedness and separation properties. Emphasis on metric spaces. Prerequisite: MATH 360 or permission of the instructor.

Physics

The program of study in physics leading to a Bachelor of Science degree prepares the student for two options. The research or industrial degree program option is designed to prepare students for graduate study or as a terminal program in preparation for industrial research. The general degree program is designed to prepare students for a career in secondary education and in some cases may be useful for students planning to attend medical school, work in patent law or technical writing, teach the history of science, etc. Individualized program planning and instruction allows each student, in consultation with an adviser, to construct a plan of study best suited to his career goals.

The study plan for physics majors must include 24 semester hours of upper-level physics courses divided approximately equally between courses in intermediate classical physics and contemporary physics. In addition six to nine semester hours will be devoted to studies in advanced techniques.

Interdisciplinary areas of concentration such as geophysics, biophysics, mathematical physics, and engineering physics can be developed from the offerings in physics with the faculties of the College of Science and Engineering. The student is encouraged to consider some of these opportunities. Additional studies applicable to a degree in physics can be selected from chemistry, engineering, and earth science.

Courses in Physics

PHYS 309 **Intermediate Mechanics** 3
A study of dynamics, central force problems, rigid body dynamics, oscillations, systems of particles, moving coordinate systems, and an introduction to Lagrangian Mechanics.

PHYS 310 **Intermediate Electricity and Magnetism** 3
Vector analysis, electrostatics, boundary value problems, the study of dielectric materials, magnetostatics, electromagnetic induction, magnetic properties of matter, electric currents, and Maxwell's equations.

PHYS 320 **Optics** 3

A study of the foundations of geometrical optics, interference, coherence, diffraction, the electromagnetic nature of light, polarization, and holography.

PHYS 330 **Acoustics I** 3

A study of fundamental particle vibration theory, plane waves in air, waves in more than one dimension, interference patterns, diffraction, acoustic impedence, longitudinal waves in different gases and waves in liquids and solids.

PHYS 340 **Thermodynamics** 3

Basic concepts in work, heat, the first and second law of thermodynamics, entropy, enthalpy, free energy with an introduction of the thermodynamic potentials and applications.

PHYS 345 **Advanced Laboratory** 3

This course utilizes the open lab concept in that there may be students simultaneously performing a variety of different experiments, e.g., acoustical measurements, electromagnetic studies, atomic spectra, radioactivity studies, optics, electronics, nuclear magnetic resonance phenomena, etc.

PHYS 358 **Acoustics II** 1-6

A continuation of Acoustics I. An extension from simple harmonic motion through electromagnetic waves to Fourier transforms, nonlinear oscillations, stationary waves, vibrating sources, reflection and absorption of sound waves.

PHYS 360 **Introduction to Quantum Mechanics** 3

Historical development of quantum mechanics, the Schroedinger representation with numerous applications, ordinary and spin angular momentum, the Heisenberg representation, elementary perturbation and scattering theory.

PHYS 362 **Elements of Modern Physics** 3

This course will cover the following areas: special relativity, relativistic kinematics, a review of quantum mechanics, atomic structure, elementary nuclear structure and reactions, and high energy elementary particle physics.

PHYS 398 **Physics Seminar** 3

Topics vary according to the interest of the students. Each student will be expected to select topics of current interest to research groups and present this material to the seminar group at least three times during the semester.

PHYS 400 **Advanced Dynamics** 3

A continuation of Physics 309 beginning with a treatment of more advanced problems using Lagrangian Mechanics, the variational principle, Hamilton's equations of motion with applications and the Hamilton-Jacobi theory.

PHYS 419 **Mathematical Methods of Physics** 3

The topics to be covered will vary and will be selected from the following: Fourier Series and boundary value problems, linear vector spaces, vector and tensor analysis, Green's functions, orthogonal functions, eigenvalue problems, partial differential equations, calculus of variations, complex analysis with application to conformal mapping.

PHYS 420 **Introductory Solid State Physics** 3

A study of crystal structure, crystal diffraction and the reciprocal lattice, crystal binding, phonons and lattice vibrations, energy bands and the Fermi model of a free electron gas.

PHYS 430 **Elements of Nuclear Physics** 3

A study of nuclear sizes and shapes, binding energies, the two-nucleon system, nuclear models, nuclear reactions, scattering, radioactivity, beta and gamma decay and particle accelerators.

Natural Science

This is an integrated course designed to emphasize the contemporary aspects of biology, chemistry and physics while minimizing the distinction between the disciplines. Stressed throughout the course are:

(a) the impact of science on the individual's life.
(b) the interaction of science with social, economic and political forces.
(c) the strengths and limitations of science.
(d) an understanding of science as a human endeavor.

This course is designed as a terminal science course for non-science majors and is recommended as an elective for science majors. It may be used to satisfy the physical and biological requirements for graduation as well as the science requirements for teacher certification.

NTSC 301, 302 **Contemporary Natural Science I, II** **3,3**
Contemporary aspects of science. Topics include ecology, population, environmental problems, atomic energy, space travel, probability, computers, disease, drugs, chemical and biological warfare and genetic engineering. Includes laboratory. Intended for non-science majors.

Pre-Medicine, Pre-Dentistry, and Pre-Veterinary

Professional schools in health sciences seek well-trained, versatile students, who, in addition to displaying leadership, social maturity and human relations skills, possess the physical, emotional and intellectual stamina required for a successful career in medicine. Toward that end, the undergraduate student should feel free to concentrate his studies in his primary area of interest, realizing that the professional school admissions committee is more interested in the quality and scope of the work than in the major field chosen.

Absolute requirements for professional schools are deliberately kept minimal in order to permit wide flexibility for the student to choose an academic program which best fits his individual interests. These requirements normally include at least one year of English, two years of chemistry, and one year each of physics, mathematics and biology.

Some basic concepts and vocabulary common to the sciences, which are basic to the study of medicine, are essential. In addition, a thorough understanding of the fundamentals of chemistry, physics, biology and mathematics is mandatory since many advances in medicine are based on developments from these disciplines.

Since specific requirements may vary slightly among professional schools, it is prudent for the student to identify early in his academic career the specific requirements established by the professional schools of his choice. Because of the extremely competitive nature of school admissions, the student is strongly advised to pursue an undergraduate degree program that will permit him several career alternatives.

Information on the requirements of specific schools, factors involved in the school admissions process, finances, the admissions examination, and other matters of interest to pre-professional students may be obtained from the Health Services Advisory Committee of the University.

Graduate Study

Unlike most universities, The University of Texas of the Permian Basin does not have a separate graduate school; rather, the University's graduate programs are administered by the various college deans under the direction of the Vice President for Academic Affairs. There is no formal or operational distinction between the administration of the graduate and undergraduate programs. A Graduate Council composed of the college deans and selected faculty members and chaired by the Vice President for Academic Affairs is responsible for the development of policies and procedures concerning graduate education.

ADMISSION TO GRADUATE STUDY

Those seeking admission should write to the Director of Admissions for an application form which must be filled out and returned with an official transcript of all prior college or university study to the Director of Admissions.

There are five basic requirements for admission to a graduate program: (1) a bachelor's degree from an accredited institution in the United States or proof of equivalent training at a foreign institution; (2) B average in upper-division (junior and senior level) work and in any graduate work already completed or other evidence that one can succeed in graduate study; (3) a satisfactory score on the Graduate Record Examination's Aptitude Test or the Admission Test for Graduate Study in Business; (4) adequate subject preparation for the proposed graduate program; and (5) acceptance by the dean of the college in which the student expects to pursue graduate study.

Deadlines for Submission of Application. Applications, along with official transcripts of all previous college or university work, should be filed at least 60 days in advance of the beginning of the semester or summer session in which one plans to register. Foreign students should apply much earlier.

Seniors at UT Permian who lack less than 10 semester hours for graduation, but meet other admission requirements may be admitted to graduate

study. They must be registered for all of the final courses required for the bachelor's degree to be able to take graduate courses.

The Graduate Record Examination. The Aptitude Test of the Graduate Record Examination is a measure of one's likelihood of success in graduate study. All applicants for admission to graduate study at The University of Texas of the Permian Basin must take the test. Those applicants with outstanding records may be admitted without the GRE test score, but must complete the test prior to enrolling. The test is administered by the Educational Testing Service of Princeton, New Jersey. The test may be taken at several testing centers (colleges and universities) six times a year, usually October, December, January, February, April, and July. For information about where and when the test may be taken, contact the Admissions Office of The University of Texas of the Permian Basin.

Conditional Admission. A student desiring to work toward an advanced degree in an area in which his undergraduate training is insufficient may be admitted with the understanding that he must undertake course work and other study to make up deficiencies noted by the college dean and that such make-up work will be in addition to the regular degree requirements.

When a student with less than minimum grade-point average or with less than satisfactory Graduate Record Examinations Aptitude Test score is admitted on the recommendation of a college dean with the approval of the Vice President for Academic Affairs, the dean may assign special conditions regarding the number of semester hours to be taken and specific grade-point average to be maintained.

GRADUATE STUDY REGULATIONS

The student is held responsible for knowing degree requirements and enrolling for courses that fit into his degree program. He is likewise held responsible for knowing the University regulations in regard to the standard of work required for continuance in graduate study.

Transfer of Credits. Up to six credits completed at another institution will usually be accepted toward the master's degree if appropriate for the student's planned program of study at UT Permian. In some cases a limited number of additional credits will be accepted by petition. In petitioning, the student or applicant should specify in writing the reasons that the courses should be accepted and applied toward requirements for the degree. No graduate credit with a grade less than B may be transferred to UT Permian. No credits acquired by correspondence study apply toward the minimum requirements for the

master's degree, nor can any credit more than eight years old be applied toward a master's degree completed prior to September 1, 1977. After that date, no credit more than six years old may be applied toward requirements for the degree. Extension course work, whether completed through UT Permian or at another institution, may be applied toward meeting minimum requirements for the master's degree not to exceed a total maximum of six credits.

Course Load. The maximum course load for a graduate student is 15 semester hours or six semester hours in a six-weeks summer term; registration in excess of these will be permitted only under exceptional circumstances. Twelve credits per semester constitute a full-time course load. If the student is employed by the University as a teaching assistant or student assistant, his course load must be correspondingly reduced. A part-time student who is employed full time should normally take only one course per semester but with the approval of the student's adviser he may take two courses providing the individual will have ample time free for study.

The maximum credits for which a student may register in a semester or summer term apply not only to courses taught conventionally but to courses taught on a self-paced basis as well. If a student finishes a self-paced instruction course before the end of the semester or summer term, he may register for another self-paced course immediately or anytime thereafter during that semester.

Grades. Credit is given in graduate programs for the grades A, B, and C. Every semester hour of C, however, must be balanced by one of A, because the degree candidate is required to present an overall average of B at the end of his program of study. At the graduate level, some professors will award pluses and minuses to grades, especially in the case of the grade B, in order to further clarify the meaning of the mark.

Continuation in Graduate School. Continuation in graduate study beyond the first 12 credits is dependent on satisfactory progress in resolving any admission conditions and maintenance of a B average. Failure to earn a B average in the next six credits will result in dismissal.

The graduate student who is dismissed may be readmitted for further graduate study only with the approval of the dean of the college and the Vice President for Academic Affairs.

Courses Counted For Another Degree. No course counted toward another degree may be counted toward a master's degree, either directly or by substitution.

English Requirements. No one may receive the master's degree from UT Permian without demonstrating the ability to write and speak English acceptably. The examining committee will certify that it has examined the candidate's proficiency in writing and speaking English and that it is appropriate for the holder of a master's degree from UT Permian.

Foreign students must submit a satisfactory TOEFL Independent Study Score in order to be admitted to graduate study.

Advisement. Upon admission to graduate study the individual will be assigned a faculty member by the dean of the college to serve as his adviser. Prior to the completion of one-half of the course credits required, the adviser nominates a guidance committee of three members including himself as chairman, a faculty member from the student's cognate field of study, and a third faculty member who may be from the major or cognate field of study or other field for which there is a logical reason. The appointment of the third faculty member may be delayed as explained below. The committee is approved and appointed by the dean of the college.

The committee is responsible for developing the student's program of study, for conducting examinations, and for certifying the student's completion of all requirements for the degree.

The final examination committee shall consist of at least three faculty members; however, prior to the examination the committee may consist of only the adviser and the representative of the student's cognate field, both of whom must be members of the graduate faculty. One member of the student't oral examination committee will be from neither his major nor minor field of study and will usually be from a different college.

Candidacy. In order for the graduate student to achieve the status of candidate for the master's degree he must, with the assistance of his adviser and the representative of his cognate field of study, plan a program of study. This must be done prior to beginning the last half of the course credit requirements for the degree and must be approved by both the college dean and the Graduate Council. Students who fail to submit a program and receive approval shall be

required to complete one-half of the required credits (exclusive of thesis) after approval is received. The planned program should list all the courses, and any special projects and other educational experiences that are to be a part of the master's program; it is not necessary to include the topic if the thesis option is chosen.

Oral Examination. Successful completion of all courses and research requirements does not assure receipt of the master's degree. After all requirements have been fulfilled, each candidate will normally sit for an oral examination by the candidate's committee. The examination will cover the subject matter of the candidate's field or discipline as well as his research. The candidate must demonstrate an appropriate level of knowledge and understanding of his field in the oral examination. One negative vote on a three member committee and two negative votes on a committee of four or more faculty members will result in failure. The candidate who has failed the oral examination may sit for re-examination only twice more within five years of the initial failure. However, any candidate who fails the examination will be given directions for study in order to improve the chances of passing the examination on a second attempt.

PROGRAMS OF STUDY

Master's degrees are offered in four fields: the M.A. in physical education and health, the M.A. in education (early childhood education, elementary education, secondary education, special education, and counseling), the M.B.A. in management, and the M.S. in engineering.

Education

The Master of Arts degree in education is offered in early childhood education, elementary education, secondary education, special education, and counseling. Both the thesis and the non-thesis options are offered in each. Those selecting the thesis option must complete at least 24 semester credits of prescribed study plus a thesis. Those choosing the non-thesis option must complete at least 36 credits of prescribed study, including a three credit research paper.

The thesis must deal with a topic of generalized concern to the profession, be scholarly in its orientation, demonstrate the student's understanding of and ability to use sophisticated research techniques, and show promise of a contribution to knowledge that would be worthy of publication in a scholarly or

professional journal. Students planning to pursue the Ph.D. degree should select the thesis option.

The research paper required for the non-thesis option should deal with a practical problem of concern to the student, preferably one in his present teaching situation if he is engaged in teaching while pursuing graduate study. It should follow recognized research procedures but does not require the level of sophistication of thesis research, and the findings do not necessarily need to be of such import as to merit publication. Frequently the problem and the findings of the study will be of value largely, and perhaps solely, to the school where he or she is teaching.

All candidates for the M.A. in education must have met requirements for certification, except those students enrolled in the community counseling program. Graduate students in education should have had teaching experience before enrolling in graduate study. Those who have not had such experience will, except in unusual cases, be expected to gain teaching experience before completion of the M.A. degree.

The Master of Arts programs in early childhood education, elementary education, secondary education, and special education may be so planned as to prepare one primarily for teaching or for supervisory roles. The M.A. program in counseling is designed primarily for the preparation of counselors in the elementary or secondary schools, but a concentration in community counseling is also available. The community counseling program prepares one for work as a marriage and family counselor, counseling psychologist, rehabilitation counselor, and other non-school counseling positions.

The M.A. requires at least one-half of the course work in the major area of study or in areas directly related to it. One-third of the course work should be taken in a discipline outside education. For those pursuing the teacher concentration in secondary education, elementary education, or early childhood education, it will usually mean course work in the field of one's primary subject interest outside pedagogical studies. Those pursuing the supervisor option will usually take courses in the behavioral sciences. Students majoring in counseling and preparing for community counseling rather than school counseling will usually take more of their course work in psychology and other behavioral sciences.

Programs also are offered leading to certification as reading specialists, mid-management educational administrators (principals or central system administrators) and superintendents.

Physical Education And Health

Graduate courses offered currently by the Faculty of Physical Education and Health are related to physical education only. An attempt is made to be as flexible as possible in designing programs of study. Three areas of emphasis are offered: analysis of movement, psychology of movement, and movement for the handicapped. Students will have an opportunity to examine these areas in depth and apply the course material to instructional programs.

Students studying for the Master of Arts degree in physical education and health may, with the approval of their advisers, select either the thesis or non-thesis option. The student preparing a thesis will complete at least 24 hours of course work plus the thesis. The student pursuing the non-thesis option will complete at least 36 hours including a three credit special research paper. It is expected that students desiring to study beyond the master's degree will take the thesis option, whereas students planning to cease formal study with the master's degree will follow the non-thesis option. The additional course hours required for the non-thesis degree plan should provide a greater breadth of systematic learning experiences for the student.

Students desiring to major in physical education and health for the M.A. degree should possess a bachelor's degree in which the major or minor was physical education. Provision will be made for the non-physical education major or minor student who possesses a bachelor's degree or its equivalent to enter the graduate program in physical education and health. It is not necessary that the student possess teaching experience or a teaching certificate to qualify for the master's degree program.

Prior to completion of the master's degree from UT Permian, students must demonstrate competencies that correspond with their degree objectives. While these competencies will vary, there are several that are considered basic to a student completing a master's degree.

For a list of graduate courses offered, see the listing under the description of requirements for the B.A. degree.

Engineering

The master's degree in engineering will be awarded upon achievement of specific predetermined professional competencies. An individualized program will be formulated by the student in consultation with a faculty adviser.

The student's plan of study will include the overall degree objectives, the necessary activities to reach specified competencies, and the means by which the student will give evidence for certification of achievement. Early in the student's program the degree plan will be documented and submitted to a faculty graduate committee for approval.

The activities will be selected according to the study guidelines presented

above. However, the student will be encouraged to include alternate approaches from the more traditional forms of study, with imaginative means of certifying attainment of professional competency.

A typical program might consist of the following components:

a. Advanced studies in science and engineering –At least 50% of the degree program will be devoted to an integrated core of specialized and in-depth studies from science and engineering.

b. Supporting studies–To provide the necessary background for the core studies and professional objectives, 20 to 40 percent of the program may be selected from supporting disciplines.

c. Authentic involvement 20 percent or more of the program may be devoted to experiential learning or authentic involvement. A student may elect to serve as a team participant on a professionally oriented industrial project or as a consultant to industry on a special problem. A student interested in a research career or more advanced study normally will want to choose a research oriented thesis project.

d. Free electives–To provide additional breadth in the degree program, up to 20 percent of the plan may be devoted to unconstrained, graduate level electives. It is recommended that part of the elective package be devoted to advanced study in art, humanities, or social science.

Management

The M.B.A. program in management is open to all qualified students with baccalaureate degrees from accredited colleges or universities.

Admission depends on the student's academic performance during his last two undergraduate years, or other evidence that he can succeed in graduate study. A satisfactory score on the Admission Test for Graduate Study in Business (ATGSB) or the Graduate Record Examination (GRE) is required of all graduate students.

Acceptance to graduate study is granted by the Dean of the College of Management, subject to approval by the Vice President for Academic Affairs. Applications should be directed to the Office of Admissions.

Students without management backgrounds must demonstrate their knowledge in the basic disciplines by completing up to 15 semester hours of leveling course work based upon experience and/or self study, by passing examinations in the foundation disciplines which include accounting, decision sciences, economics, finance, logistics, marketing, data systems, and basic administration.

The M.B.A. program in management at UT Permian is designed to help develop students for leadership positions in business, education, and

government.

The formal program consists of 33 semester hours of graduate course work (nine of which may be taken in an area of specialization). The program outline is as follows:

Professional Fields of Study (Common Nucleus) — *18 hours*

I. Behavioral Sciences — 3 hours

II. Decision Sciences — 3 hours

III. Environmental Analysis — 3 hours

IV. Organization Functions — 9 hours

Incorporates subject matter from several fields such as marketing, production, finance, logistics, and information systems and combines these data and concepts into relevant, meaningful illustrations of problem solving in organizations.

The Integrative Core — *6 hours*

Study designed to focus on the interrelations of the previous work completed in the professional fields. Work will involve courses in systems analysis and administrative policy as well as simulation gaming and field projects.

The Professional Concentration — *9 hours*

Students may choose plans of study in a particular specialization consistent with personal interests and career objectives.

The common nucleus is required of all students. Some of the courses within the nucleus will be offered in a series of "mini-courses" or modules; when offered on an "individually programmed instruction" basis, they may be taken according to the student's own timing.

The professional concentration core gives a student freedom to design a program to fit his needs and objectives. Areas of specialization include accounting, economics, finance, information systems, logistics, management, marketing, and decision science. Guided electives may be chosen from these areas as well as engineering, mathematics, psychology, political science, etc.

THE FACULTY

B. H. Amstead, *Professor of Engineering, and President of the University.*
B.S., M.S., Ph.D. (1956), The University of Texas at Austin.

Terryl J. Anderson, *Associate Professor of Pedagogical Studies.*
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John M. Burnham, *Associate Professor of Management.*
B.S., U.S. Merchant Marine Academy; B. Mech. Eng., George Washington University; M.S., Florida State University; Ph.D. (1970), The University of Texas at Austin.

V. R. Cardozier, *Professor of Higher Education and Behavioral Science, and Vice President for Academic Affairs.*
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Herbert D. Bryant, *Executive Assistant to the Dean, College of Arts and Education.*
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Core Curricula for Public Junior Colleges in Texas [1]

Subject	*Major Field I* *Bachelor of Arts Degree in Arts and Sciences* *Bachelor of Science in Mathematics & Natural Sciences*	*Major Field II* *Bachelor's Degree in Business Administration (incl. Accounting)*	*Major Field III* *Bachelor's Degree in Engineering*
a. English Language Proficiency (i.e., freshman English)	6 hours	6 hours	9 hours
b. Literature	6 hours	6 hours	
c. Government (to meet state statute requirement)	6 hours	6 hours	6 hours
d. History (to meet state statute requirement)	6 hours	6 hours	6 hours
e. Natural Science A	6-8 hours Biological Science	6-8 hours	8 hours Chemistry*
f. Natural Science B	6-8 hours Physical Science	----	8 hours Physics*
g. Mathematics (Collegiate level)	6 hours	6 hours (college algebra plus sequential course appropriate to a business degree)	9 hours (analytical geometry and calculus)
h. Foreign Language†	for the BA degree: 12-14 hours in a single language for the BS degree: 6-8 hours in a single language		
i. Humanities Electives: excluding courses in literature beyond b. above, also no more than 12–14 hours of foreign language may be used in h. and i. combined	6 hours	9 hours	3 hours (to satisfy ECPD requirements)
j. Special Courses	----	Economics: 6 hours Accounting: 6 hours	Engineering Mechanics 3 hours* Engineering Graphics 2 hours

*The content of these courses and the mathematics prerequisites and corequisites of these must be the same as these same courses in the curricula of ECPD accredited senior colleges.

[1] From Policy Paper 2, Coordinating Board, Texas College and University System, October 23, 1967. (Effective September 1, 1968.)

†Foreign language is not required for a bachelor's degree at UTPB.

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For further information return this form to:

Director of Admissions
The University of Texas of the Permian Basin
Odessa, Texas 79762

Name _____

Address _____

City _____ State _____ Zip _____

Please send me ( ) Application for Admission
( ) Financial Aid information
( ) Housing information

My major field of interest is _____

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