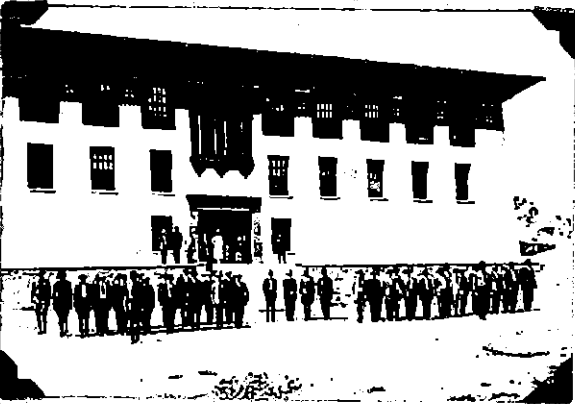
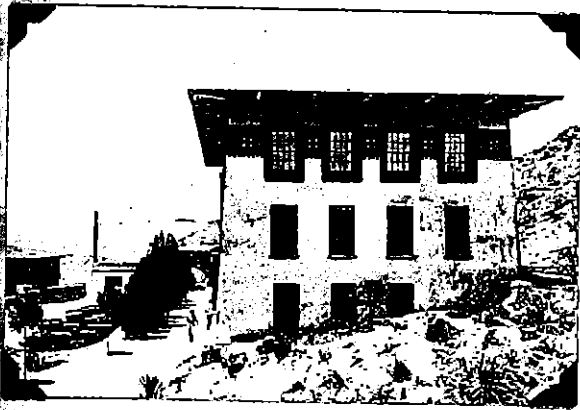
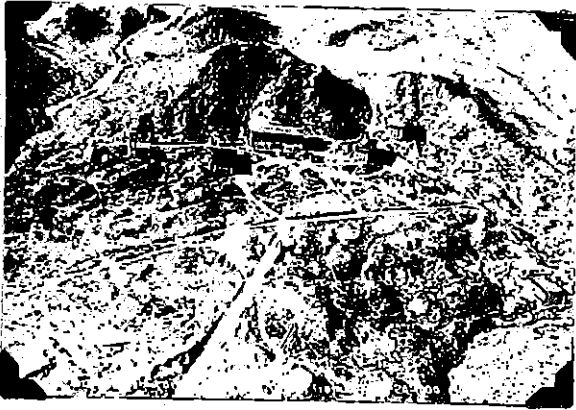
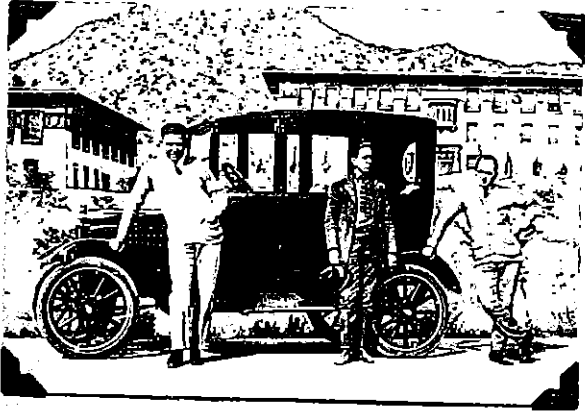


Celebrating **75** Years

THE UNIVERSITY OF TEXAS AT EL PASO



Undergraduate Studies
1989-1991

Statement of Equal Educational Opportunity

No person shall be excluded from participation in, denied the benefits of, or be subject to discrimination under any program or activity sponsored or conducted by The University of Texas System or any of its component institutions, on any basis prohibited by applicable law, including, but not limited to, race, color, national origin, religion, sex, age, veteran status, or *handicap*.

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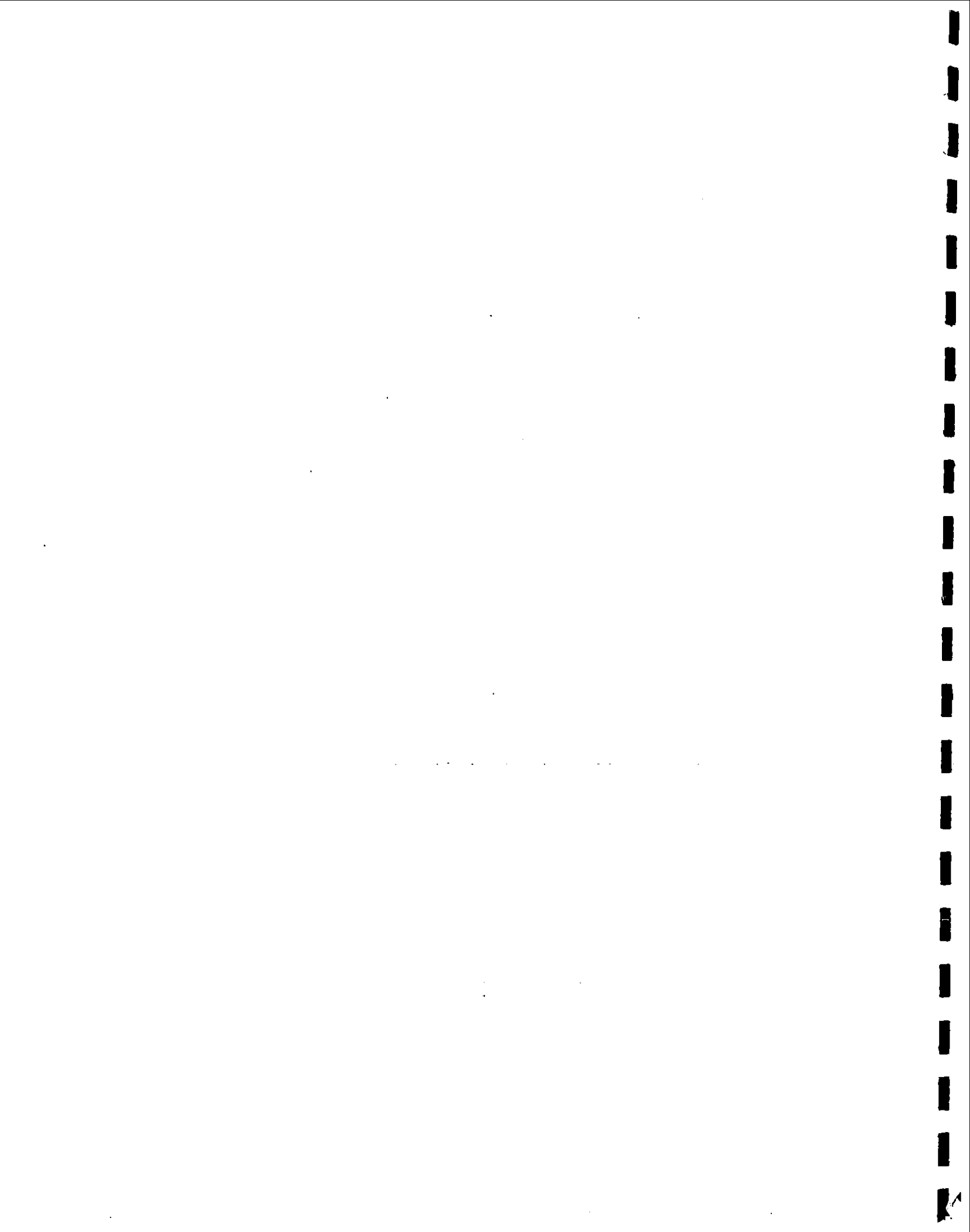


The University of Texas at El Paso

Undergraduate Studies Catalog 1989-1991

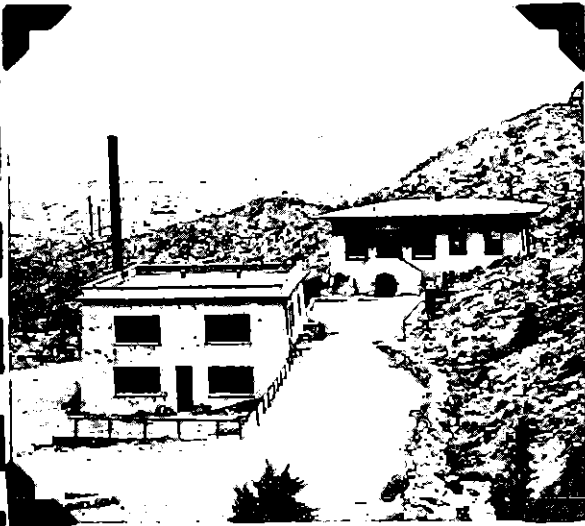
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April, 1989



TEXAS COLLEGE OF MINES AND METALLURGY

(1919-1949)



The Power House at left and Seamon Hall beyond are among the early buildings of the present campus. The school of Mines, moved to the present campus in 1916-17, was renamed Texas College of Mines and Metallurgy in 1919.



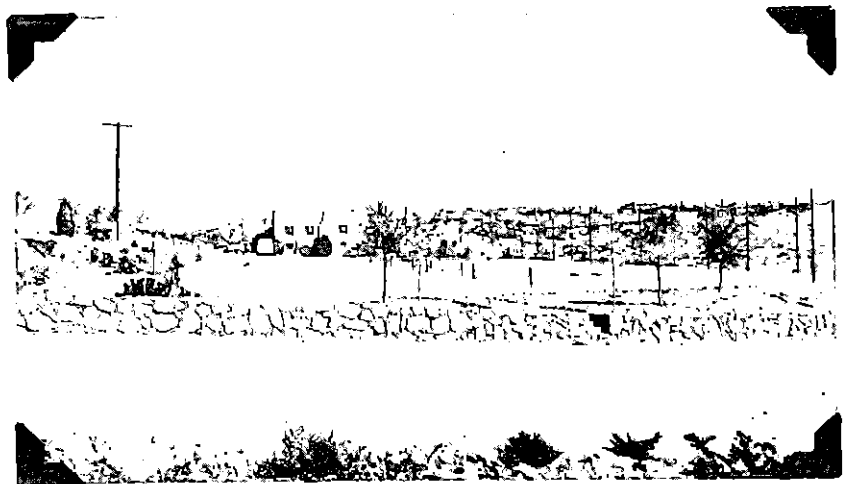
This was the entrance to the Library-Administration Building, completed in 1938. These doors now face a patio formed by a later addition.



A road through the campus and retaining walls--here in front of Main--were built in the early 1930s.



The intersection of Mesa and College (now University Avenue) looked like this in 1944--no curbs, private homes.

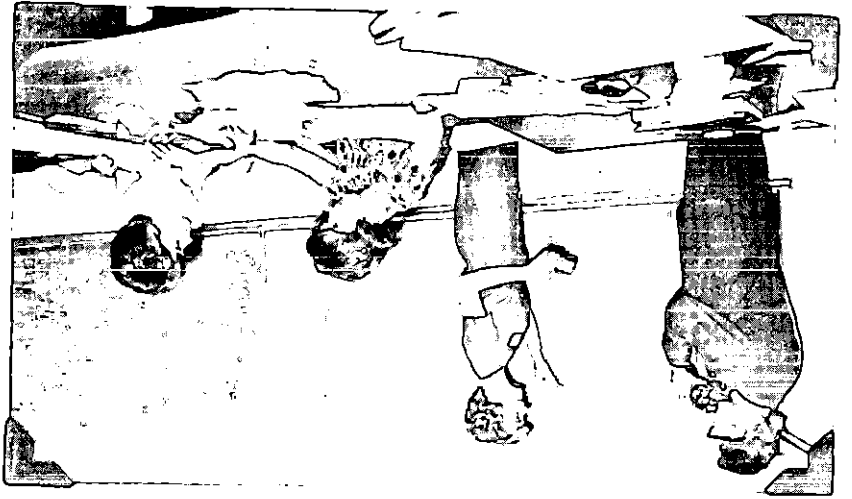


Jerris courts occupied the site of the present Psychology Building during the 1930's and 1940's. Dean and Mrs. S.H. Worell lived in the little house, now the Special Projects Center.

This student were far orange
and white beanie to freshmen
orientation in fall of 1963.



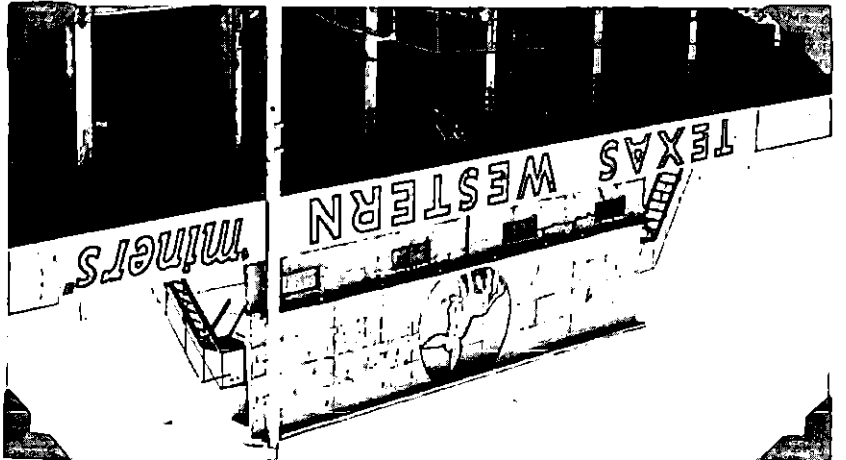
Registration was held in the Oldland Out
Building during the 1960s, with courses
listed on chalkboards and communication
by walkie-talkie.



"N" Day was celebrated from the 1920s
into the 1960s, when freshmen were washed
a huge letter on North Austin.



After the 1949 name change to W&O
Good stands were labeled "Texas Western
Miners" with a burro mascot.



Wide windows adds up
typical of the campus
Brutalist architecture.



(1949-1967)

**TEXAS
WESTERN
COLLEGE**

THE UNIVERSITY OF TEXAS AT EL PASO

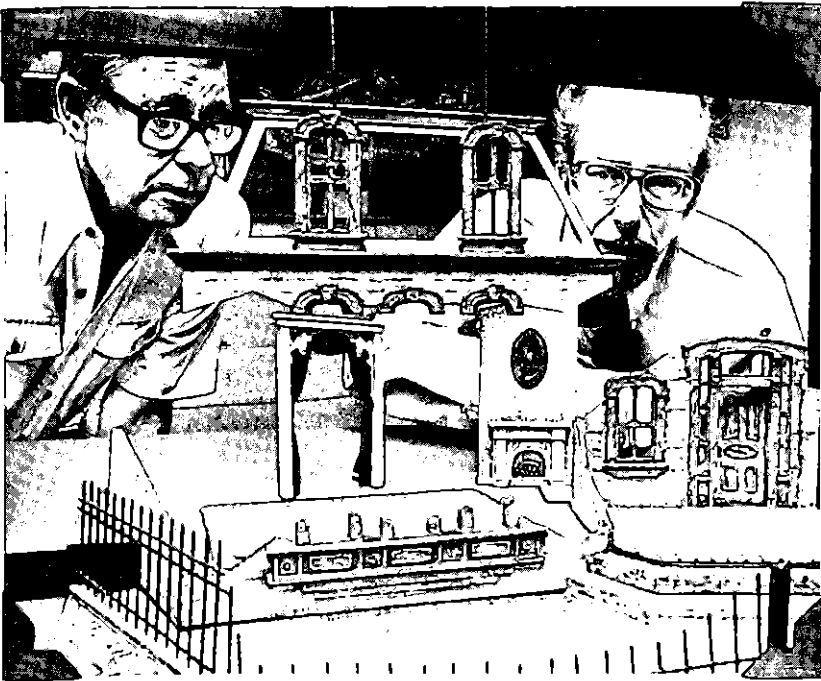
(1967-1988)



A Homecoming display on campus calls for a football victory.



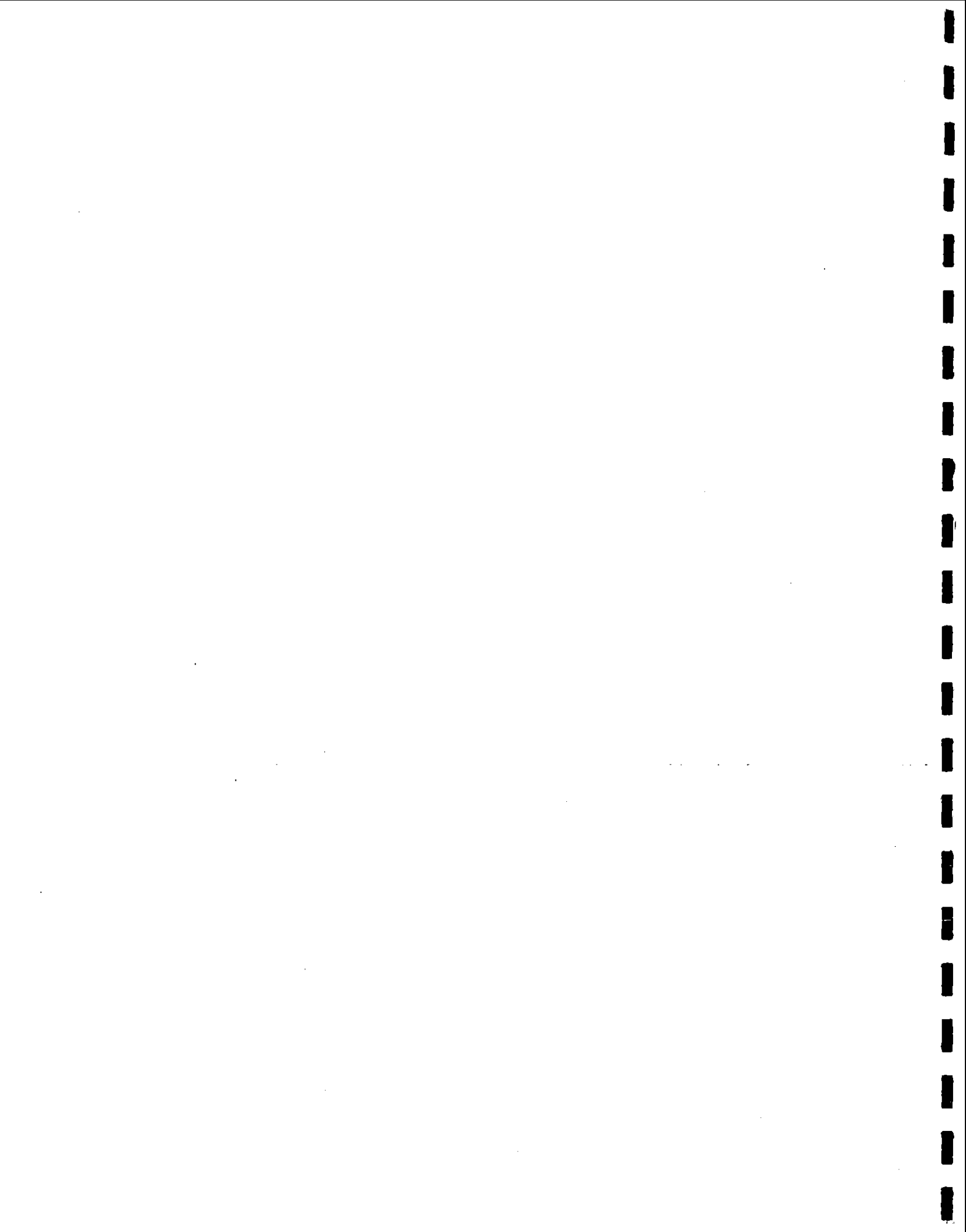
The University Library card catalog and checkout services are computerized.

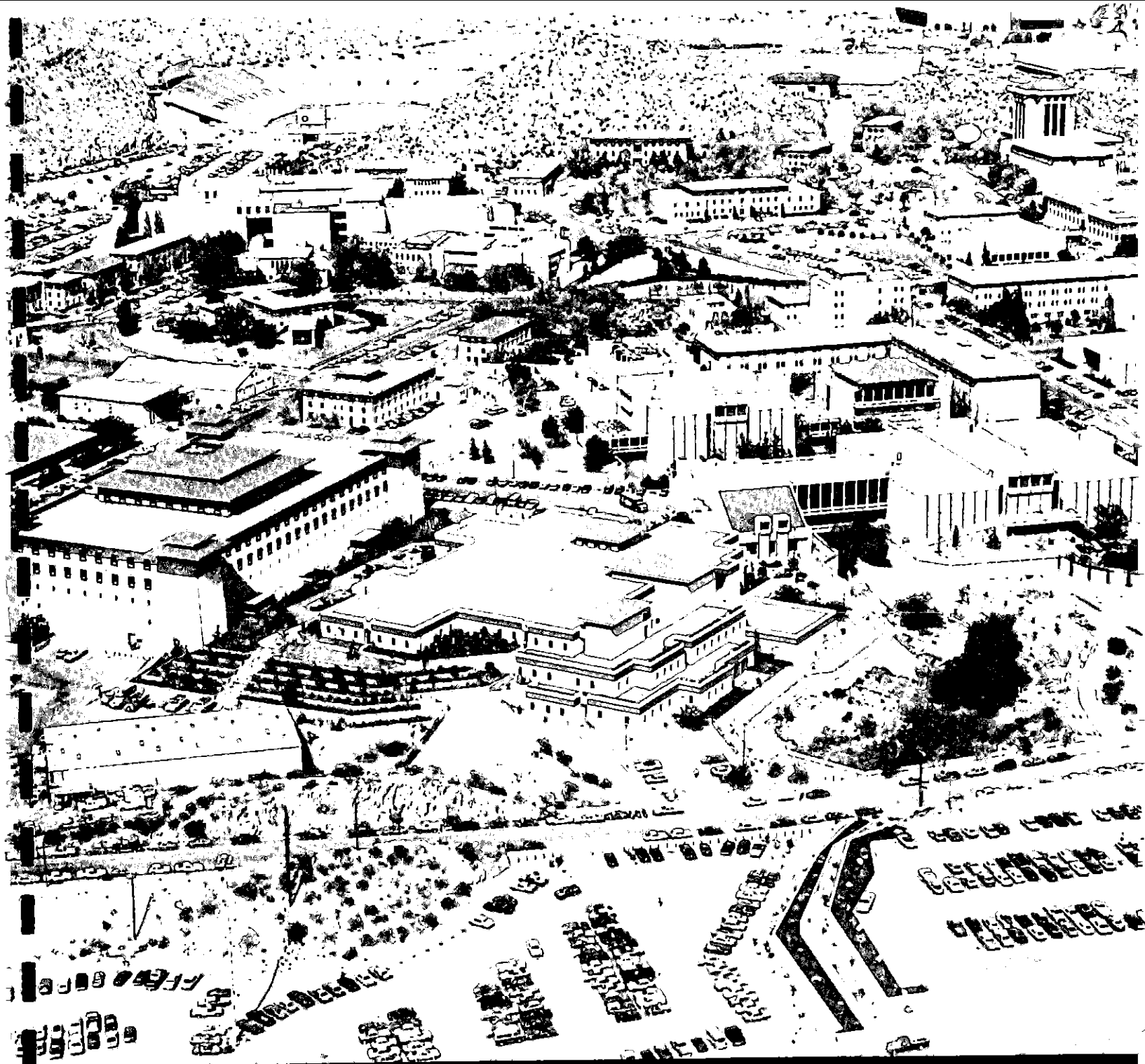


Two drama professors study the scale model for a stage set in preparing for a regular season production in the 1970's.



A student traces a valley on a map in Biological Sciences, the first department to offer a doctoral degree (1974).





University History
Board of Regents
Administrative Officers
Calendar, 1989-91
Endowments, Trusts, Memorial Funds

GENERAL INFORMATION

University History

Founded in 1913 by the Texas Legislature, the institution now known as The University of Texas at El Paso is the second oldest academic component of The University of Texas System. Originally the State School of Mines and Metallurgy, its campus was first located on the present Fort Bliss Military Reservation where an historic monument marks the site. After a damaging fire, the school moved in 1916 to the present campus on the western foothills of the Franklin Mountains overlooking the Rio Grande.

The majestic site of over 300 acres, only a few hundred yards from the United States/Mexico border, is complemented by a characteristic and unusual architecture. The first buildings on the new campus, designed by the noted El Paso architect Henry Trost, began the tradition of Bhutanese style and details, unique in the Western Hemisphere. This motif was inspired by the wife of the first dean, who had seen photographs of Bhutan's distinctive buildings in a rugged mountain setting reminiscent of that of the college. Architects have continued the original theme as new buildings have been added to the campus.

The school experienced steady growth. In 1919 the institution became a branch of The University of Texas System and was renamed The Texas College of Mines and Metallurgy. In 1927 liberal arts courses were added to the curriculum, and in 1940 the Master of Arts became the first graduate degree offered. In 1949 the institution was renamed Texas Western College (enrollment 2,383), and in 1967 the name became The University of Texas at El Paso (enrollment 9,029).

Recent years have seen continuing growth, new facilities, and expansion of programs. Enrollment passed the 10,000 mark for the first time in 1968 and in 1977 reached a record high of 15,386. In Fall 1988 14,999 students were registered. In 1974, the first doctoral-level degree program, the Doctor of Geological Sciences, was approved by the Coordinating Board of the Texas College and University System, with the first degree awarded in 1979.

Structures added in recent years include the nine-story Education Building, Barry and Kelly residence halls, and the Dining Commons, all built in 1970; the Fox Fine Arts Center, opened in 1974; the Engineering-Science Complex, completed in 1976; and the Special Events Center, 1977. A major addition to the Union was completed in 1981. A new building for the College of Business Administration was completed in 1982, and a new University Library opened in 1984.

SEVENTY-FIFTH DIAMOND JUBILEE

The 1989-90 academic year will mark the seventy-fifth anniversary of the University's first year of classes as the State School of Mines and Metallurgy. In celebration of its Diamond Jubilee, the University has planned a diverse program of special events, events which will commemorate the past, celebrate the present, and challenge the future. The University is proud of its years of service to the higher education needs of the community, its beautiful and distinctive physical plant, and its distinguished faculty.

PURPOSES AND GOALS

As an integral component of The University of Texas System in an unusual environment (both culturally and physically), and as a public comprehensive urban institution of higher education, The University of Texas at El Paso has a varied mission. Its goals include providing a wide range of baccalaureate, graduate, continuing education, and professional development opportunities for residents of the West Texas Region, the nation, and the international community. In addition, the University seeks to promote significant faculty creativity, discovery, and publication through research programs and artistic presentations. Finally, the University recognizes service obligations, both regionally and beyond, in such areas as culture, economics, health, sociopolitics, and technology.

As the only state-supported comprehensive university in far West Texas, the University has a major obligation to meet the higher education needs of its border constituency. The cultures that coexist in this region present the institution with significant challenges and unusual opportunities for instruction, research and service. The University of Texas at El Paso experiences in microcosm problems that

characterize two nations that have different languages, cultures, and governments but that share a common physical environment. No other university within Texas or the nation deals with such issues on a comparable scale. The University of Texas at El Paso, therefore, is committed to promoting those disciplines that can capitalize on the strengths of its bicultural region. Its primary responsibility remains, however, to educate students irrespective of their cultural origins and to produce highly qualified graduates who have the intellectual sophistication to meet the challenges — both cultural and technological — of a complex modern world.

DEGREES AND PROGRAMS

The University of Texas at El Paso offers a wide range of degree options and programs, encompassing a comprehensive series of academic concentrations and selected areas of professional study. The six undergraduate Colleges — Business Administration, Education, Engineering, Liberal Arts, Nursing and Allied Health Sciences, and Science — comprise some twenty-nine academic departments and offer over sixty-five baccalaureate degree options. Master's degrees are offered in all six colleges, and since 1974 the doctorate has been offered in Geological Sciences. Graduate work is coordinated through the Graduate School.

The University is accredited through the doctoral level by the Southern Association of Schools and Colleges. Accreditation information relating to the individual colleges is shown in the sections about those colleges.

STUDENT BODY

UT El Paso's student body represents a unique mix of cultures reflective of its location in the largest metropolitan area on the U.S.-Mexico border and in the largest bilingual community on any political border in the world. Hispanic students make up over half the enrollment. In addition, the annual enrollment usually includes more than 1,000 international students from nearly 60 foreign countries. Because of its proximity to the international border, the University has the largest enrollment of Mexican citizens of any comparable university in the United States.

Board of Regents

OFFICERS

LOUIS A. BEECHERL, JR., Chairman
SAM BARSHOP, Vice-Chairman
BILL RODEN, Vice-Chairman
ARTHUR H. DILLY, Executive Secretary

MEMBERS

Terms Expire February 1, 1991:
JACK S. BLANTON, Houston
SHANNON F. RATLIFF, Austin
BILL RODEN, Midland

Terms Expire February 1, 1993:
SAM BARSHOP, San Antonio
LOUIS A. BEECHERL, JR., Dallas
W.A. "TEX" MONCRIEF, JR., Fort Worth

Terms Expire February 1, 1995:
ROBERT J. CRUIKSHANK, Houston
TOM LOEFFLER, San Antonio
MARIO E. RAMIREZ, M.D., Roma

OFFICE OF THE CHANCELLOR

HANS MARK, Chancellor
JAMES P. DUNCAN, Executive Vice-Chancellor for Academic Affairs
CHARLES B. MULLINS, M.D., Executive Vice-Chancellor for Health Affairs
MICHAEL PATRICK, Executive Vice-Chancellor for Asset Management

Administrative Officers

DIANA S. NATALICIO, President, 1971*

B.S., St. Louis University; M.A., Ph.D., The University of Texas at Austin

JOHN RICHARD BRISTOL, Interim Vice President for Academic Affairs, 1970

B.A., Cornell College; M.A., Ph.D., Kent State University

JOSE FERNANDO AVILA, Dean of Students, 1971

B.S., M.Ed., The University of Texas at El Paso

GLEN I. WILLIAMS, Vice President for Administration and Finance, 1988

B.S., University of North Dakota; M.S., University of Minnesota

JOSEPH HENRY PIERLUISSI, P.E., Interim Dean, The Graduate School, 1969

B.S.E.E., University of Puerto Rico; M.S.E.E., Cornell University; Ph.D., Texas A&M University

JAMES VINCENT DEVINE, Dean, The College of Liberal Arts, 1967

B.S., M.S., University of New Mexico; Ph.D., Kansas State University

REYNALDO S. ELIZONDO, Dean, The College of Science, 1987

B.S., Texas A&M University; Ph.D., Tulane School of Medicine

JON MAURICE ENGELHARDT, Dean, The College of Education, 1988

B.A., M.A., Arizona State University; Ph.D., The University of Texas at Austin

ROBERT BELANGER GRIEVES, Dean, The College of Engineering, 1982

B.A., M.S., Ph.D., Northwestern University

RONALD WAYNE HASTY, Dean, The College of Business Administration, 1983

B.B.A., M.B.A., Eastern New Mexico University; D.B.A., University of Colorado

LYNNE BRODIE WELCH, Dean, The College of Nursing and Allied Health, 1986

B.S., University of Connecticut; M.S.N., The Catholic University of America; Ed.D., Teachers College, Columbia University

*First year of appointment at The University of Texas at El Paso

1989-1990

CALENDAR

1990-1991

1989

FALL SEMESTER

Mon	July 3	Admission applications due for Fall Semester (Upon submission of a \$15.00 Late Fee, applications will be accepted after this date with the exception of international applications and supporting documents which must be received by the due date.)
	July *	Fall Pre-registration*
Thur-Fri	Aug 24-25*	Fall Open Registration*
Mon	Aug 28	Classes Begin
Mon-Fri	Aug 28-	Late Registration and Add/Drop. Registration and Add/Drop ends 5:00 pm on last day
	Sept 1	
Mon	Sept 4	Labor Day Holiday
Wed	Sept 13	12th Class Day — Census Day
Fri	Sept 22	Last day to select Pass/Fail Option
Fri	Oct 6	Graduation Application deadline for degrees to be conferred in December
Fri	Oct 6	Last day to drop a class or officially withdraw with an automatic W; after this date, grade of W or F is determined by each instructor
Fri	Nov 17	Deadline for Faculty Initiated Course Drops
Thur-Fri	Nov 23-24	Thanksgiving Holidays
Fri	Dec 1	Deadline for graduate degree candidates for submission of theses, dissertations and research papers, and for certification of graduate degree final examinations to the Graduate Dean
Fri	Dec 8	Last day of classes. Last day for Complete Withdrawal
Mon-Fri	Dec 11-15	Final examinations
Fri	Dec 15	Winter Commencement, 7:00 pm
Dec 18	— Jan 14	Winter holidays for students
Tue	Dec 19	Fall Semester final grades due in Registrar's Office, 12:00 noon
Fri	Dec 29	Grades mailed to students
Tue	Jan 2, 1990	University offices re-open

1990

Mon	July 2
	July *
Fri	Aug 24*
Mon	Aug 27
Mon-Fri	Aug 27-
	Aug 31
Mon	Sept 3
Wed	Sept 12
Fri	Sept 21
Fri	Oct 5
Fri	Oct 5
Fri	Nov 16
Thur-Fri	Nov 22-23
Fri	Nov 30
Fri	Dec 7
Mon-Fri	Dec 10-14
Fri	Dec 14
Dec 17	— Jan 13
Tue	Dec 18
Fri	Dec 28
Wed	Jan 2, 1991

1990

SPRING SEMESTER

Wed	Nov 15, 1989	Admission applications due for Spring Semester (Upon submission of a \$15.00 Late Fee, applications will be accepted after this date with the exception of international applications and supporting documents which must be received by the due date.)
	Nov *	Spring Pre-registration*
Fri	Jan 12*	Spring Open Registration*
Mon	Jan 15	Classes Begin
Mon-Fri	Jan 15-19	Late Registration and Add/Drop. Registration and Add/Drop ends 5:00 p.m. on last day
Tue	Jan 30	12th Class Day — Census Day
Fri	Feb 9	Last day to select Pass/Fail Option
Fri	Feb 23	Graduation Application deadline for degrees to be conferred in December
Fri	Feb 23	Last day to drop a class or officially withdraw with an automatic W; after this date, grade of W or F is determined by each instructor
Mon-Fri	Mar 26-30	Spring Holiday for students, no classes
Fri	Apr 6	Deadline for Faculty Initiated Course Drops
Fri	Apr 27	Deadline for graduate degree candidates for submission of theses, dissertations and research papers, and for certification of graduate degree final examinations to the Graduate Dean
Fri	May 4	Last day of classes. Last day for Complete Withdrawal
Mon-Fri	May 7-11	Final examinations
Sat	May 12	Spring Commencement, 7:00 pm
Tue	May 15	Spring Semester final grades due in Registrar's Office, 12:00 noon
Mon	May 21	Grades mailed to students
Mon	May 28	Memorial Day Holiday

1991

Thur	Nov 15, 1990
	Nov*
Fri	Jan 11*
Mon	Jan 14
Mon-Fri	Jan 14-18
Tue	Jan 29
Fri	Feb 8
Fri	Feb 22
Fri	Feb 22
Mon-Fri	Mar 25-29
Fri	Apr 5
Fri	Apr 26
Fri	May 3
Mon-Fri	May 6-10
Sat	May 11
Tue	May 14
Mon	May 20
Mon	May 27

*Tentative. See term Schedule of Classes for confirmation of Registration dates.

Summer School schedules will be announced at a later date.

Endowments, Trusts & Memorial Funds

The University of Texas at El Paso is indebted to the generosity of private citizens for many fine endowments, trusts and memorial funds. These permanent funds, invested under trusteeship of the Regents of The University of Texas System or held by other trustees, provide scholarships, purchase library books, underwrite important research, and in many ways enrich the educational experience. The University makes grateful acknowledgment for the following permanent funds:

ALUMNI ASSOCIATION OF UTEP SCHOLARSHIP FUND

— Established in 1986 by the Board of Directors of the Alumni Association of The University of Texas at El Paso, Inc. Income earned will be used to award an annual scholarship under the Presidential Scholarship Program.

ANHEUSER-BUSCH CHARITABLE TRUST SCHOLARSHIP FUND

— Established in 1983 on behalf of the Board of Control of the Anheuser-Busch Charitable Trust under Mr. August A. Busch, III. Interest from the fund is to be used for University Endowed Scholarships to any undergraduate student who meets the academic requirements of the Presidential Scholarship Program.

J. S. ARMIJO-STEINMETZ SCHOLARSHIP FUND

— Established in 1984 by the General Electric Foundation to honor Dr. J. S. Armijo, a UT El Paso graduate, for being one of six General Electric employees to win the Charles P. Steinmetz Award for Technical Achievement. Income earned from the endowment will be used to provide a scholarship in Metallurgical Engineering for a junior/senior level student.

DR. THOMAS G. BARNES PHYSICS FUND

— Established in 1986 by alumni and friends of UT El Paso to honor Thomas G. Barnes, who officially retired in 1981 as Professor Emeritus. His distinguished career includes teaching, counseling, and serving as Director of the Schellenger Foundation for Research. Income earned from the endowment will provide undergraduate and graduate scholarships as well as provide equipment and supplies for the Department of Physics.

DR. GRACE ANN BEAL PERMANENT MEMORIAL FUND

— Established in memory of Dr. Grace Ann Beal by her sister, Miss Virginia Beal, and friends, with income from the endowment fund providing scholarship aid to pre-medical and nursing students.

CARL A. BEERS MEMORIAL PRESIDENTIAL SCHOLARSHIP FUND

— Established in 1984 by Carl and Donna Milburn in memory of their great-uncle, long-time El Paso resident and businessman, Mr. Carl A. Beers. Income from this permanent endowment fund will provide a Presidential Scholarship for a worthy and deserving qualified student from the College of Science.

CHARLES AND BETTY BELDING MEMORIAL SCHOLARSHIP FUND

— Established by Mr. and Mrs. C. D. Belding, prominent members of El Paso's real estate and insurance industry, and later changed to a memorial fund in memory of Charles and Betty Belding by family and friends to provide scholarships without restriction as to field of study.

J. B. AND MARGARET BLAUGRUND FOUNDATION LIBRARY FUND

— Established in 1973 in memory of her parents by Mrs. Alvin J. Marks, the income from this endowment fund is used for acquisition of Judaica and related materials.

JANE WEINERT BLUMBERG UNIVERSITY ENDOWED SCHOLARSHIP FUND

— This endowed scholarship fund was established in 1983 to honor Jane Weinert Blumberg. Mrs. Blumberg served on the U.T. System Board of Regents from 1977 to 1983 and assisted this institution in many ways. Income earned from the endowment will be used to provide an undergraduate scholarship under the Presidential Scholarship Program for a student primarily from El Paso high schools, both public and private.

BRUMBELOW-MOORE MEMORIAL SCHOLARSHIP FUND

— Established in memory of Mike Brumbelow and Ross Moore, two prominent figures of the University's athletic history, by their families and friends,

for a sophomore, junior, or senior student athlete or trainer with an outstanding academic record.

MICHAEL P. BURNS MEMORIAL SCHOLARSHIP FUND

— Established in 1979 by an Executive Committee comprised of family, friends and representatives of the Disabled American Veterans, sponsoring organization of the fund, as a memorial to SFC Michael P. Burns (MIA Vietnam), who attended UT El Paso in 1966-67. Income from the endowment provides scholarships for students in special education, speech therapy, physical therapy or related fields working with handicapped children.

ERIC J. BYMARK MEMORIAL FUND

— Established in memory of Eric J. Bymark, former student and prominent El Paso citizen, by his wife and family, with income from this permanent endowment fund providing resources for the Department of Intercollegiate Athletics.

CHARLES R. AND DOROTHY S. CARTER CHAIR IN BUSINESS ADMINISTRATION

— Established in 1985 as a gift from Mrs. Dorothy S. Carter in memory of her husband, a distinguished business leader. The first chair in the College of Business Administration provides income for an outstanding faculty member with superior professional and academic credentials.

CHARLES R. CARTER MEMORIAL ATHLETIC FUND

— Established in 1983 by Dorothy S. Carter in memory of her husband, Charles R. Carter, a prominent El Paso businessman and owner of the Carter Petroleum Company. Income earned from the endowment will be used to provide a full scholarship for Athletics.

CIRCLE K-SUNWORLD FOUNDATION SCHOLARSHIP FUND

— Established in 1982 by the officers and directors of Circle K-Sunworld Foundation under Chairman Fred Hervey, a long-time member of the University's Development Board and primary benefactor. Interest from the fund is to be used for University Endowed Scholarships to undergraduate students who meet the academic requirements.

ANNE AND ROLAND W. CLAUDIUS MEMORIAL SCHOLARSHIP FUND

— Established in memory of Roland W. Claudius, a former foreign service officer with the U.S. State Department, by his wife, Anne Claudius, with income from this permanent endowment fund providing scholarships for international students.

ANDY AND SYD COHEN ENDOWMENT FUND

— Established by the friends of the late Andy and Syd Cohen, brothers, former collegiate and professional athletes, El Paso businessmen, civic leaders and friends of the University, with income from the endowment providing scholarships to student athletes.

JOHN G. AND SUE E. COMER MEMORIAL NURSING SCHOLARSHIP FUND

— Established in memory of John G. and Sue Elizabeth Comer, prominent citizens of El Paso and later Houston, with income from this permanent endowment fund providing scholarships for upper-level nursing students.

DR. C. SHARP COOK PHYSICS PROFESSORSHIP

— Established in 1987 by alumni and friends of UT El Paso to honor C. Sharp Cook, who officially retired in 1985 as Professor Emeritus. A challenge grant of \$50,000 from Dr. and Mrs. Cook was matched by El Paso Electric Company and members of the President's Associates of UT El Paso. Income from the endowment will be used by an outstanding faculty member from the Physics Department.

COORS VETERANS MEMORIAL SCHOLARSHIP FUND

— Established in 1985 by Alan R. Kahn, President, Dickshire Coors Distributing Company through special promotions in the El Paso area. Income earned will provide two or more scholarships under the Coors Veterans Scholarship Program at UT El Paso.

12/GENERAL INFORMATION

FRANK B. COTTON ESTATE FUND

— Established in 1937 at the bequest of Frank B. Cotton, a Massachusetts manufacturer and investor, to the Board of Regents for Texas Western College. The Estate's income has provided the University with the Cotton Memorial Building; the Cotton Visiting Professor; financial aid and scholarships to students and faculty; and support for the Library, for organized research and for the Faculty Teaching Improvement Program. The Cotton Fund continues to contribute vitally to the University's overall academic excellence program.

DR. JOHN K. CREIGHTON HISTORY MEMORIAL FUND

— Established in 1984 by former students, colleagues, friends and the Creighton family in memory of John Kellogg Creighton, former Associate Professor of History at UT El Paso. Income earned from this endowment will be used to award an annual scholarship to an undergraduate History major. Additional scholarships may be awarded as the fund grows each year.

JUDGE AND MRS. ROBERT E. CUNNINGHAM FUND

— Created in 1978 by Judge and Mrs. Robert E. Cunningham, prominent El Paso citizens, with income from this permanent endowment fund providing financial assistance for the annual operation and maintenance of Texas Western Press or its successor.

BRUCE DAVIDSON MEMORIAL GRADUATE STUDENT AWARD FUND

— Established in 1985 by students, friends, and family of the late Bruce Davidson, a Graduate student in the Department of Geological Sciences at UT El Paso.

DAVIDSON FAMILY CHARITABLE FOUNDATION PRESIDENTIAL ENDOWED SCHOLARSHIP FUND

— Established in 1983 by the Davidson Family Charitable Foundation under Chairman H. W. Davidson of Fort Worth, Texas. Income earned from the fund is to be used for a Presidential Endowed Scholarship for a resident of the State of Texas.

LOLA B. DAWKINS FUND FOR EXCELLENCE IN BUSINESS TEACHER EDUCATION

— Established in 1986 by alumni, friends, and faculty honoring Dr. Lola B. Dawkins upon her retirement in May 1984. Income earned from the Endowment will be used to benefit Business Administration students seeking Business Education certification or to aid current Business Education Teachers in Graduate work.

BROOKS DAWSON MEMORIAL SCHOLARSHIP FUND

— Established in 1970 by friends of this former student, who was an outstanding football player and student leader, for a student pursuing a degree in the College of Business Administration.

JAMES D. DeGROAT MEMORIAL PRESIDENTIAL SCHOLARSHIP FUND

— Established in 1985 by Mary Carolyn DeGroat in memory of her husband. James D. DeGroat was President of Carter Petroleum Company and former outstanding athlete at Texas Western College. Income earned from the endowment will be used to award an annual scholarship to qualified athletes under the Presidential Scholarship Program.

ARTEMIO DE LA VEGA MEMORIAL SCHOLARSHIP FUND

— Established in 1983 by Mr. Federico De La Vega, Juarez, Mexico, in memory of his father Artemio De La Vega to provide several endowed scholarships under the Presidential Scholarship Program. Income earned from the endowment fund will be used to provide four-year scholarships for deserving qualified students from Mexico with first preference given to residents of Cd. Juarez.

PATRICK H. De WITT MEMORIAL PRESIDENTIAL SCHOLARSHIP FUND

— Established in 1986 in memory of Patrick H. De Witt, a prominent realtor and partner of De Witt and Rearick, Inc. Income earned from the endowment will be used to provide a Presidential Scholarship in the College of Business Administration for a qualified student majoring in Real Estate.

DIAMOND JUBILEE FUND FOR ACADEMIC RESOURCES

— The Diamond Jubilee Endowed Fund for Academic Resources was established by alumni and friends of UT El Paso during 1983 in celebration of the University's 70th Anniversary year and continues through 1990. Interest earned

from the endowment will provide academic resource funds in 1988 and later years to celebrate the 75th Anniversary of the University. Resource funds can be used for unrestricted purposes designated by the President, the Presidential Scholarship Program, the Junior Scholars Program, the Honors Program, and the Student Recruitment Program.

DICKSHIRE COORS ENDOWED LIBRARY FUND

— Established in 1981 by Richard N. Azar and Cheryl Azar McCown of Dickshire-Coors, Inc. of El Paso to provide a \$25,000 Challenge Grant for the Alumni Fund for Academic Excellence and to buy new books for the Library. During the "Buy-a-Book" year, Dickshire-Coors matched all new gifts and increases made by both alumni and non-alumni donors.

BERNICE DITTMER LIBRARY FUND

— Established in 1981 by Mrs. Bernice Dittmer, outstanding alumna and prominent El Paso citizen, with income from this permanent endowment fund providing books for the University Library.

BERNICE DITTMER PRESIDENTIAL SCHOLARSHIP FUND

— Established in 1981 by Mrs. Bernice Dittmer, outstanding alumna, with income from the permanent endowment fund providing scholarships for superior local area high school students who attend UT El Paso.

EMIL JAY DITTMER MEMORIAL SCHOLARSHIP FUND

— Established in memory of Emil Jay Dittmer, long-time benefactor of the University, by his wife, Bernice Dittmer, with income from this permanent endowment fund providing Presidential Scholarships for qualified students interested in the fields of arts and humanities.

RICHARD M. AND FRANCES M. DUDLEY MEMORIAL PROFESSORSHIP FUND

— Established in 1985 through the last Will and Testament of Marion J. Purdy. Richard M. Dudley served as mayor of El Paso and representative in the Texas Legislature. Mayor and Mrs. Dudley resided at 711 Cincinnati Street, the present home occupied by Presidents of UT El Paso. The endowed Professorship earnings may be assigned to any academic area upon appointment by the UT El Paso President.

RICHARD E. DUNLAP MEMORIAL FUND

— Established in 1987 by Mrs. Gisela E. Dunlap in memory of her husband. Mr. and Mrs. Dunlap have been strong supporters of the UT El Paso History Department for many years. Income earned from the endowment will be used to provide scholarships to worthy and deserving students who are pursuing a Master of Arts degree in History.

EL PASO ADMINISTRATORS ASSOCIATION ENDOWED SCHOLARSHIP FUND

— Established in 1984 by the El Paso Administrators Association to provide scholarships for a graduate or undergraduate student in the College of Education. Income earned from the endowment will be used to provide an annual scholarship to a student pursuing a career in education with the intention of becoming an administrator.

EL PASO CENTENNIAL MUSEUM FUND

— Established in 1986 by alumni and friends of the UT El Paso Centennial Museum to celebrate the 50th Anniversary of the Museum. Income earned from the endowment will be used for operation and acquisition of new materials. The museum sponsors research, teaching and study exhibits.

EL PASO COMMUNITY PROFESSORSHIP IN ACCOUNTING

— Established in 1986 by alumni and friends of the Accounting Department, College of Business Administration, to enhance and continue academic excellence. Income earned from the endowment will support an outstanding faculty member of national reputation.

EL PASO DOWNTOWN LIONS CLUB MEMORIAL FUND

— Created in 1980 by the El Paso Downtown Lions Club for the benefit of the Department of Intercollegiate Athletics. This permanent endowment fund provides support for the athletic program of the University and is a means of honoring and memorializing the Club and its members.

MISS FREDERICK LOUISE ETTER MEMORIAL LIBRARY FUND

— Established in 1988 at the bequest of Miss Frederick Louise Etter, who died on August 2, 1987. Income earned from the endowment will be used for technical books and periodicals, serials on technical subjects, special journals and

abstracts in any field. Each publication is marked in her memory for "appreciation of education" received

MANSOUR AND JAMES FARAH MEMORIAL FUND

— Established by Hana Farah in memory of her husband, Mansour, and her son, James, two prominent figures of El Paso's leading clothing manufacturing firm. Income from this endowment fund provides scholarships for upper-level nursing students.

FESSINGER-SPRINGER SCIENCE LECTURE FUND

— Created by Mr. and Mrs. Moses D. Springer in memory of Mrs. Springer's parents, Rueben and Leona Fessinger, who came to El Paso in 1903 to open the Grand Leader Dry Goods Store, which existed for over 40 years. This fund will be used to bring a nationally recognized lecturer in the field of science to the University each year.

DR. MICHAEL L. FINERTY SCHOLARSHIP FUND

— Created by Dr. Michael L. Finerty, a 1956 graduate of Texas Western College, in the field of biology. This prominent neurologist from California established the university endowed scholarship in 1987 for outstanding students in the field of pre-medicine or biological sciences at UT El Paso.

JOSEPHINE CLARDY FOX FOUNDATION

— Established in 1970 by the bequest of a prominent El Paso woman who left her estate to the University upon her death. Mrs. Fox's estate was extensive, including real estate, valuable antiques, paintings, and books, as well as liquid assets. Mrs. Fox established an endowed scholarship fund with a gift of \$20,000 and she created a student loan fund of \$2,500. An additional \$25,000 is awarded annually for scholarships. Her books went to the University Library, and she bequeathed antiques and other valuable items to the Centennial Museum at the University. The remainder of her estate, in accordance with Mrs. Fox's instructions, is an unrestricted endowment named in her honor. During 1978, in recognition of Mrs. Fox's interest in both the University and the Fine Arts, the building housing the Departments of Art, Music and Theatre Arts was renamed the Josephine Clardy Fox Fine Arts Center.

DR. JOE S. GALATZAN MEMORIAL SCHOLARSHIP FUND

— Established in 1984 by Mrs. Sylvia L. Galatzan in memory of her husband, Dr. Joe S. Galatzan, a well known civic leader, who was the team physician for University athletes for many years. Income earned from the endowment fund will be used to provide an annual scholarship under the Presidential Scholarship Program for an outstanding student who has expressed an interest in pre-medical studies under the College of Science.

KENNETH P. GIFFORD MEMORIAL SCHOLARSHIP FUND

— Established in 1984 by the Kenneth P. Gifford Foundation of El Paso in memory of Kenneth P. Gifford, long-time businessman and bank executive. This scholarship will be awarded under the Presidential Scholarship Program.

C. H. GLADMAN SCHOLARSHIP FUND

— Established in 1986 by alumni, faculty and friends to honor Professor Emeritus Charles Herman Gladman, who was a member of the Mathematics Department faculty from 1948 until his retirement in 1986. He served as the first Chairman of the Department from 1965 to 1968.

DAVIS AND BERTHA GREEN PERMANENT ENDOWMENT

— Established by the generous gift of Davis and Bertha Green, leading El Paso citizens, the income from this endowment provides scholarships for students majoring in the Sciences.

GEORGE FRED AND MABEL HARDY SCHOLARSHIP FUND

— Created in 1982 by George Fred and Mabel Hardy, prominent El Paso citizens, with income from this permanent endowment fund providing financial assistance and scholarships for Rainbow Girls who attend UT El Paso from the Rainbow Girl Assemblies in the El Paso County area.

JULIE DITTMER HART FUND FOR MUSIC

— Created in 1988 by Mrs. Bernice Dittmer to honor her daughter, Julie Dittmer Hart, upon her graduation in May from the College of Liberal Arts. Income from the endowed fund will provide unrestricted financial resources for the Department of Music.

DR. WADE HARTRICK FUND

— The annual income from this permanent endowment provides the College of Business Administration with funds for teaching excellence awards, student

scholarships, business books and academic program materials. Established by contributions from alumni, friends and colleagues, this fund appropriately honors Wade James Hartrick, Professor Emeritus of Business, for his assistance to students during his 34 years as a teacher, advisor and administrator.

PERCIVAL HENDERSON PERMANENT ENDOWMENT

— The income from the bequest of Percival Henderson provides scholarships for students of engineering.

CARL HERTZOG ENDOWMENT FUND

— Established in 1986 by alumni, faculty and friends of UT El Paso in memory of Dr. J. Carl Hertzog, internationally known as "The Printer At The Pass" (1902-1984). Income earned from the endowment will be used to develop the Hertzog Collection in the Special Collections section of the UT El Paso Library. The Hertzog collection of printing and design has considerable research value.

GEORGE HERVEY MEMORIAL SCHOLARSHIP FUND

— Established in 1987 by Bette D. Hervey in memory of her husband. George Hervey was a prominent El Paso businessman and civic leader who founded the El Paso Association of the National Home Builders. Income earned from the endowment will be used to provide a university endowed scholarship for a qualified student in the College of Business Administration.

HAZEL HERVEY MEMORIAL ENDOWED FUND

— Established in 1987 by the late Mrs. Hazel Hervey, prominent El Paso civic leader, with income from this endowed fund providing resources for the History Department and the Department of Biological Sciences. Outstanding speakers on Middle Eastern and Islamic History and special research on migratory bird parasites are supported from this fund on an annual basis.

DANIEL L. HILL SCHOLARSHIP

— A perpetual scholarship endowed by the family and friends of the late Daniel L. Hill. The endowed scholarship is awarded annually to a deserving student of accounting.

LUCY CLAIRE HOARD PERMANENT MEMORIAL FUND

— This endowment fund was established by Kappa Chapter, Delta Kappa Gamma, in memory of Lucy Claire Hoard and provides scholarship aid to a female student majoring in education.

MR. AND MRS. O. B. HOCKER LIBRARY MEMORIAL FUND

— Endowed by the bequest of Mrs. O. B. Hocker of El Paso, who died in 1971. Mrs. Hocker created a trust at the El Paso National Bank (now Texas Commerce Bank) with income to be used by the University to purchase books in her memory and in her husband's memory.

PHILIP C. HOLT MEMORIAL SCHOLARSHIP FUND

— Established in 1982 in memory of Philip C. Holt by his wife, family and student friends. Philip C. Holt was an outstanding senior in the College of Engineering, who lost his life in an automobile accident. Interest earned from the endowment fund is to be expended for a scholarship to an undergraduate engineering student of sophomore standing or above.

HORWITZ ENDOWMENT FUND

— Established in 1979 by Mr. Abe Horwitz, a prominent member of El Paso's business community, and further endowed by bequest in his estate in tribute to the Hispanic-American people who worked in his family enterprises. Income provides for scholarships and grants-in-aid for low income students.

HOUSTON ENDOWMENT, INC. PRESIDENTIAL SCHOLARSHIP FUND

— Established in 1983 by the Trustees of the Houston Endowment, Inc., a philanthropy endowed by Mr. and Mrs. Jesse H. Jones of Houston, Texas. Income earned from the endowment fund will be used to provide a four-year scholarship, renewable annually, to an outstanding undergraduate student in accordance with the Presidential Scholarship Program.

INTERNATIONAL MINING DAYS SCHOLARSHIP

— Established in 1988 by John Shaw and Frank Weidner, Co-Chairmen of International Mining Days Committee from the El Paso Chamber of Commerce. Income will provide a scholarship to a graduate student who intends to enter the Mining/Extractive Metallurgy resource industry.

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DR. W. TURRENTINE JACKSON HISTORY FUND

— Created in 1988 by Dr. W. Turrentine Jackson, a prominent professor of History at the University of California at Davis, and 1935 graduate who received the Gold Nugget Award for Alumni Leadership in the College of Liberal Arts in 1984. Income provides a graduate level scholarship in history.

DR. EILEEN M. JACOBI SCHOLARSHIP FUND

— Established in 1986 upon the retirement of Eileen M. Jacobi, Dean, College of Nursing and Allied Health. Contributions from alumni, friends and colleagues honor her 50 years of service to the Nursing Profession.

C. D. JARVIS TRIBUTE SCHOLARSHIP FUND

— Established in 1987 by El Paso High School alumni and friends of C. D. Jarvis, who retired in 1985 after an outstanding career of 40 years serving as basketball coach and teacher. Income earned from the endowment will be used to provide an annual scholarship for students from El Paso High School who attend UT El Paso.

AGNES T. JIROU MEMORIAL LIBRARY FUND

— Established in 1987 at the bequest of Mrs. Agnes T. Jirou, who died May 16, 1985. She was a member of the Chancellor's Council of the U.T. System. Income earned from the endowment will be used to purchase new library books at UT El Paso.

BEN L. JIROU SCHOLARSHIP IN SCIENTIFIC RESEARCH

— This endowed scholarship was established in 1969 by Mrs. Ben L. Jirou as a memorial to her husband. The income from the endowment will provide an annual scholarship to a deserving student in the College of Science. Mr. Jirou, an official of the International Boundary and Water Commission, was a resident of El Paso from 1920 until his death in 1967.

THE GLADYS JOHNSTON MEMORIAL FUND

— Established by the will of Miss Gladys Johnston of El Paso, who died in 1971. Miss Johnston bequeathed her estate to the University to create a permanent fund to purchase books and equipment for the Library.

CHIP JORDAN LITERARY FESTIVAL FUND

— This special fund was created in 1975 in memory of Chip Jordan, son of Mrs. Winifred T. Jordan, formerly of El Paso. The fund was endowed in 1987 as "The Chip Jordan Literary Festival Fund." Income to the English Department of UT El Paso provides for the sponsorship of an annual festival, summer writers conference, and other programs in the reading and creative literature field.

HELEN O'SHEA KELEHER MEMORIAL PRESIDENTIAL SCHOLARSHIP FUND

— Endowed by the bequest of Mrs. Helen O'Shea Keleher, a permanent endowment fund provides Presidential Scholarships for Texas resident students who attend UT El Paso and study in a field of Business, Education, Engineering, Science, or Nursing. Helen O'Shea Keleher was born in Denver, Colorado, and came to El Paso when she was three years old. Her father, John O'Shea, was the conductor of the first train to pull into El Paso's Union Depot when it opened in 1906.

ROBERT E. KOLLINER MEMORIAL FUND

— Established in 1986 by Border Steel Mills, Inc. in memory of Robert E. Kolliner, former El Paso City Alderman and active Southwestern Sun Carnival member. Kolliner worked for Prudential Life Insurance Company in El Paso for more than 20 years. Income will provide an annual scholarship for track and field athletes at UT El Paso.

DR. EDWIN J. KNAPP MEMORIAL FUND

— Established in memory of Dr. Edwin J. Knapp, Professor Emeritus of Physics, who served the University for 38 years. Alumni, friends, and associates created this permanent fund to provide future income to the Departments of Mathematics, Physics and Athletics.

FELIX LAIDLAW MEMORIAL SCHOLARSHIP FUND

— Established in 1986 at the bequest of Felix Laidlaw, who died June 8, 1986. This non-alumni bequest provides a university endowed scholarship fund under the UT El Paso Presidential Scholarship Program. Laidlaw's love for the University and the city of El Paso is shown through his gift.

C. H. LEAVELL-GEORGE MATKIN SCHOLARSHIP FUND

— Established in 1983 by the Development Board of The University of Texas at El Paso to honor C. H. Leavell and George G. Matkin, two long-time members of the Development Board upon their retirement on August 31, 1983. Income earned from the permanent endowment fund will be used for an undergraduate scholarship to a worthy and deserving student under the Presidential Scholarship Program.

DR. R. MILTON LEECH ENDOWED FUND FOR DRAMA

— Established in 1985 by alumni, friends, and associates, this permanent fund pays tribute to Dr. R. Milton Leech for 35 years of outstanding service to this institution as Costumer, Theatre Director, Professor, Department Chairman, Dean of Administration, Vice President for Academic Affairs, and Acting President. Income earned from the endowment fund will be used to provide scholarships for Theatre Arts majors.

LIBRARY POOLED ENDOWMENT FUND

— This pooled fund was created by friends of the University Library to honor or memorialize alumni, faculty, organizations, and leading citizens. Friends contribute at least \$200 annually to these individual or organizational accounts and provide books on an annual basis for the Library. The major named funds in this endowment are:

Edward Abraham Library Fund
Delbert L. and Louise R. Achuff Library Fund
Mr. and Mrs. Clarence Albrecht Library Fund
Dr. Bylsma L. Allen Library Fund
Alpha Chi Library Endowment Fund
Sahban Al-Tabbah Memorial Library Fund
The Alumni Association of UT El Paso Library Endowment Fund
Charles and Etta Anderson Memorial Library Fund
The Dolores Anderson Memorial Library Fund
The Cheryl A. Anguiano Memorial Library Fund
Victor Apodaca, Sr., Memorial Library Fund
Rogelia G. Arditti Memorial Library Fund
Elsa Arnstein Memorial Library Fund
Mr. and Mrs. Robert K. Banner Memorial Library Fund
Dr. W. Gerald Barber Memorial Library Fund
Alice Pierce Barry Memorial Library Fund
Judge Woodrow Bean Memorial Library Fund
Stanley Bevan Memorial Library Fund
Dr. Anton H. Berkman Memorial Library Fund
General Philip H. Bethune Memorial Library Fund
Lois Foster Blount Memorial Library Fund
Dr. and Mrs. Roland K. Blumberg Library Fund
Jamie Bowen Memorial Library Fund
Dan Boyd Memorial Library Fund
The Dr. Haldeen Braddy Memorial Library Fund
Mrs. Harry Brand Library Fund
Julie North Breck Memorial Library Fund
Altagracia Briones Memorial Library Fund
David and Beatrice Briones Library Fund
Bill Broaddus Memorial Library Fund
Judge Hans Brockmoller Memorial Library Fund
Hughes Butterworth, Sr., Memorial Library Fund
Charles and Nancy Cagle Library Fund
Johnnye Calhoun Memorial Library Fund
Mike Callaghan Memorial Library Fund
The Eddie Caples Memorial Library Fund
Paul H. Carlton Memorial Library Fund
The Ernesto Carrizal, Jr., Library Fund
William H. Carroll Memorial Library Fund
John Francis Carson Memorial Library Fund
Robert Kimbrough Carson Memorial Library Fund
Carlos and Rosa Lee Carter Memorial Library Fund
Charles R. Carter Memorial Library Fund
Dr. and Mrs. Rene O. Casavantes Library Fund
Gaylord B. Castor Memorial Library Fund
Lee Chagra Memorial Library Fund
Joel Chambers Memorial Library Fund
Dr. Lurline H. Coltharp Library Fund
Frank I. Cornwall Memorial Library Fund
Don Lee Cotton Memorial Library Fund
Nanette Creamer Library Fund
John Kellogg Creighton Memorial Library Fund
William and Genet Creighton Library Fund
Frederick J. Crouch Memorial Library Fund
H. E. Crowson Memorial Library Fund
Hal Daugherty Library Fund
James D. DeGroat Memorial Library Fund
Mrs. Dante Del Campo Memorial Library Fund
Jennifer Irene Della Costa Memorial Library Fund

ENDOWMENTS, TRUSTS & MEMORIAL FUNDS/15

Patrick H. De Witt Memorial Library Fund
 James W. Dunn Memorial Library Fund
 James Elliott Memorial Library Fund
 Employees of El Paso Electric Company Memorial Library Fund
 Kenneth C. England Library Fund
 Sylvester Clyde Evans Memorial Library Fund
 Dr. Floyd Farquhar Memorial Library Fund
 Frank Feuille III Memorial Library Fund
 Dr. Floyd Fierman Library Fund
 George W. Finger Library Fund
 Frank Barron and Mildred Sullivan Fletcher Memorial Library Fund
 Wayne Folmer Memorial Library Fund
 Chris P. Fox Memorial Library Fund
 E. Joseph Franczak Memorial Library Fund
 Joe F. and Nell M. Friedkin Library Fund
 Major William D. Fuchlow Memorial Library Fund
 Louise Gaither Mordecai Memorial Library Fund
 Jean Garnsey Memorial Library Fund
 Roy I. Glass, Jr., Memorial Library Fund
 Charles A. "Buddy" Glover Memorial Library Fund
 Ralph Gonzalez, Jr., Memorial Library Fund
 Carl H. Green Library Fund
 Dr. Leighton Green Memorial Library Fund
 Francis P. Greetham, Jr., Library Fund
 Dr. Gladys Gregory Memorial Library Fund
 Berte Haigh Memorial Library Fund
 J. A. Hancock Memorial Library Fund
 Rev. Frederick M. Hanes Memorial Library Fund
 John Kenneth Hardy Memorial Library Fund
 Frances Elen Harrison Memorial Library Fund
 Rosanna E. Hartmann Memorial Library Fund
 Richard L. Hatch Memorial Library Fund
 Rev. and Mrs. A. W. Hedman Memorial Library Fund
 George Hervey Foundation Memorial Library Fund
 Blanca Gomez Hill Memorial Library Fund
 Margaret W. Hilliker Memorial Library Fund
 Dr. Isabell Welsh Hoenes Memorial Library Fund
 Grace B. Hooten Memorial Library Fund
 Dr. Manuel D. Hornedo Memorial Library Fund
 Albert and Florence Horwitz Library Fund
 Herbert Hughes Memorial Library Fund
 Commander Herbert Hunter Memorial Library Fund
 Mozelle Groebie Irons Memorial Library Fund
 Dr. B. F. Jenness Memorial Library Fund
 Steele and Rita Jones Library Endowment Fund
 Dr. and Mrs. Harry Kahl Library Fund
 Mr. and Mrs. Crawford S. Kerr, Sr., Memorial Library Fund
 Emanuel, Charlotte and Julius Klein Memorial Library Fund
 John Edward Lafayette Memorial Library Fund
 Dr. Jody Lawrence Library Fund
 Marjorie P. Lawson Memorial Library Fund
 L. Vere and James L. Leasure Memorial Library Fund
 Dr. and Mrs. Morton Leonard, Sr., Library Fund
 Victoria Gleem Leverett Memorial Library Fund
 Edward S. and Kay Light Library Fund
 Col. P. A. Loiselle Memorial Library Fund
 Mr. and Mrs. James H. Loper, Jr., Library Fund
 Warren and Clara S. Lord Memorial Library Fund
 Robert P. and Margaret J. Love Library Fund
 Gertrude N. Lynde Memorial Library Fund
 Frank K. MacCallum Memorial Library Fund
 Julia Greear MacQueen Memorial Library Fund
 Kirsten Main Memorial Library Fund
 Afifi Malooly Memorial Library Fund
 Michael Malooly Memorial Library Fund
 Father Louis F. Mancini Memorial Library Fund
 Reverend C. G. Manker Memorial Library Fund
 Mrs. Dexter R. Mapel, Sr., Memorial Library Fund
 Melissa Mapula Memorial Library Fund
 Bernard Martin-Williams Memorial Library Fund
 James Maurice Memorial Library Fund
 Richard W. Maxey Library Fund
 Daniel K. McCarthy Library Fund
 Ruth B. McCluney Memorial Library Fund
 Lydia Ruiz McCord Memorial Library Fund
 Mike and Cheryl McCown Library Fund
 Col. Melvin L. McCoy Library Fund
 James P. McDonald Memorial Library Fund
 Hugh James McGovern Memorial Library Fund
 Kelly McWhorter Memorial Library Fund
 Marshall and Sharon Meece Library Fund
 John Cathcart Melby Memorial Library Fund
 Peggy Merrill Memorial Library Fund

Jean H. Miculka Library Fund
 John Judy Middagh Memorial Library Fund
 Harold C. Miller Memorial Library Fund
 L. A. Miller Memorial Library Fund
 Dr. and Mrs. J. H. Miskimins Library Fund
 Rodolfo "Rudy" Montoya Memorial Library Fund
 Richard L. Moore Library Fund
 Ross Moore Memorial Library Fund
 Eric Robert Multhauf Memorial Library Fund
 Louise Murchison Memorial Library Fund
 Marvin Nadler Memorial Library Fund
 Holly Najera Memorial Library Fund
 Dr. and Mrs. C. R. Nelson Memorial Library Fund
 Mark W. Niemann Memorial Library Fund
 Beulah Noland Memorial Library Fund
 Harry E. North Memorial Library Fund
 Charles C. Northrup Library Fund
 John Onick Memorial Library Fund
 The Optimist Club of Westside El Paso Library Fund
 Richard and Maggie Pearson Library Fund
 Shirley Pearson Memorial Library Fund
 Jane Burges Perrenot Memorial Library Fund
 Robert K. Peyton Memorial Library Fund
 Elizabeth Cram Polk Memorial Collection
 Eugene O. Porter Memorial Library Fund
 Minnie B. Price Memorial Library Fund
 Dean C. A. Puckett Memorial Library Fund
 Joseph M. and Jettie H. Ray Library Fund
 Arthur Reardon Memorial Library Fund
 Robert Redman Memorial Library Fund
 Peter J. Rempe Memorial Library Fund
 John Tappan Rice Memorial Library Fund
 Marion Tappan Rice Memorial Library Fund
 Dr. and Mrs. Louis Robbins Library Fund
 Mr. and Mrs. Joe W. Roberts Library Fund
 Nellie Pollard Rodgers Memorial Library Fund
 George N. Rodriguez, Sr., Memorial Library Fund
 Ethel Howe Rogers Memorial Library Fund
 John A. P. Romer Memorial Library Fund
 William Russell Memorial Library Fund
 Carmen Santiesteban Memorial Library Fund
 Mary Schumaker Memorial Library Fund
 Mr. and Mrs. Robert A. Seal Library Fund
 Elizabeth R. Sipes Library Fund
 Mary E. Smiley Memorial Library Fund
 Eugene R. Smith Library Fund
 Madelyn Stern Memorial Library Fund
 Philip and Elisa Stone Library Fund
 LTC Barry L. Strauss Library Fund
 Ruth North Street Memorial Library Fund
 Dr. Rex Strickland Memorial Library Fund
 Ira J. Stuart Library Fund
 Ashley Lynn Swidler Memorial Library Fund
 Dr. Arleigh B. Templeton Library Fund
 Judge R. E. Thomason Memorial Library Fund
 H. Brooks Travis Memorial Library Fund
 Thunderbird Optimist Club Library Fund
 Eugene Thurston Library Fund
 W. H. Timmons Library Fund
 Candelario Trejo, Sr., Library Fund
 UT El Paso Student Association Library Endowment Fund
 Mrs. Filomena Sanchez Urrabazo Memorial Library Fund
 Don and Nancy Vickers Library Fund
 Marie L. Waddell Memorial Library Fund
 David Waggoner Memorial Library Fund
 Dr. Carl Walker Library Fund
 George F. Walker Memorial Library Fund
 William E. Walker Memorial Library Fund
 Amen Wardy Memorial Library Fund
 Eleanor Des Saulles Wareing Memorial Library Fund
 William F. Webb Memorial Library Fund
 Robert Wegstein Memorial Library Fund
 George M. Weidmann Memorial Library Fund
 Walter D. Weidmann Memorial Library Fund
 James C. and James H. White Memorial Library Fund
 Barney Wieland Memorial Library Fund
 Andres Wiley Memorial Library Fund
 Mrs. Rene Rutherford Williams Memorial Library Fund
 Maurice A. Wilson Memorial Library Fund
 Mrs. Ozelle G. Wishard Memorial Library Fund
 LTC Bertram C. Wright Memorial Library Fund
 Paul and Patricia Yetter Library Fund

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LIBRARY EXCELLENCE ENDOWMENT FUND

— Established in 1985 as a result of \$25,000 contributed by alumni and friends of the University during 1984 in reply to a challenge grant from Burlington Northern Foundation for the celebration of the new Library Building. During the "Campaign for Library Excellence" donors designated their gift for the purchase of new library books. Interest earned from the endowment fund will be expended for the purchase of books and library materials.

EVELYN LINCOLN SCHOLARSHIP FUND

— This fund was established through the bequest of Mrs. Evelyn Lincoln Archer, a 1934 graduate, who died in 1972. The fund will provide an annual scholarship for a female student majoring in Theatre Arts or Speech.

ANNA M. LITTLETON MEMORIAL SCHOLARSHIP FUND

— Established in 1984 by Burton F. Littleton and friends in memory of his wife, with income from this permanent endowment fund providing an undergraduate scholarship under the Presidential Scholarship Program.

E. RAY LOCKHART LIBRARY MEMORIAL FUND

— Created in 1971 in memory of Mr. Lockhart, a distinguished alumnus who attended the University from 1929 to 1932. The endowment was created by alumni and friends and will purchase engineering books for the Library.

BETTY M. MacGUIRE PROFESSORSHIP IN BUSINESS ADMINISTRATION

— Established in 1985 by Betty M. MacGuire, a 1948 graduate and leading El Paso citizen, to enhance the teaching and research activities of the College of Business Administration and provide salary support for a distinguished Business Professor.

JOHN T. MacGUIRE PROFESSORSHIP IN MECHANICAL AND INDUSTRIAL ENGINEERING

— Established in 1985 by John T. MacGuire, a UT Austin graduate and prominent El Paso civic leader, to enhance the teaching activities of a distinguished Professor in Engineering as support for a Doctoral Program.

REVEREND DR. CHARLES C. G. MANKER MEMORIAL MUSIC FUND

— Established in 1973 by the congregation of the First Unitarian Church of El Paso to honor their late minister, Dr. Manker. The earnings of this endowment fund will be used to provide scholarships in music.

DEXTER R. MAPEL, JR., AND GRACE MILLER MAPEL MEMORIAL SCHOLARSHIP FUND

— Established in 1984 in memory of Dexter R. Mapel, Jr., and Grace Miller Mapel by their daughter, sons, and friends to pay tribute to these long-time El Pasoans. Income from this permanent endowment fund will provide undergraduate scholarships for Department of Art students.

ALVIN J. MARKS MEMORIAL SCHOLARSHIP

— Established by the Blaugrund Foundation and the family of Alvin J. Marks, El Paso civic leader and businessman. The income from the endowment is used to provide one or more scholarships to deserving students each year.

GEORGE G. MATKIN SCHOLARSHIP FUND

— Established in 1981 by George G. Matkin, Chairman Emeritus, State National Bank of El Paso and long-time member of the University Development Board, with income from this permanent endowment fund providing scholarships for superior local area high school students who attend UT El Paso.

JAMES MAURICE MEMORIAL ENGINEERING FUND

— Established in 1985 by the late James Maurice, U.S. Bureau of Mines executive, and a 1940 Metallurgical Engineering graduate, with income used to provide unrestricted funds to improve the quality of the academic programs under the College of Engineering.

JAMES M. MAURICE MEMORIAL METALLURGICAL ENGINEERING SCHOLARSHIP FUND

— Established in 1988 upon the death of James M. Maurice, Class of 1940, to provide outstanding scholarships to Metallurgical Engineering students under the Presidential Scholarship Program. Graduate students are also eligible.

ELLIS MAYFIELD FAMILY PRESIDENTIAL SCHOLARSHIP FUND

— Established in 1984 by Ellis O. Mayfield, prominent El Paso attorney, and his wife, Susan, with income from this permanent endowment fund providing a Presidential Scholarship for superior local area high school students who attend UT El Paso. Worthy and deserving qualified students must meet the criteria of the Presidential Endowed Scholarship Program.

ELLIS AND SUSAN MAYFIELD PROFESSORSHIP FUND

— Established in 1986 by Mr. and Mrs. Ellis O. Mayfield as a "Challenge Grant" for the Alumni Fund for Excellence Campaign. Income from the endowment will be used by a faculty member in the College of Business Administration to carry out a dynamic research program or undertake scholarly pursuits to advance the body of knowledge and to ensure outstanding teaching in that college.

MARTHA M. McDONALD/RAINBO BAKING SCHOLARSHIP

— This scholarship was created in 1973 by Mr. Kenneth McDonald of Hampton, Virginia, in memory of his wife Martha, a 1959 graduate of the University. Rainbo Baking Company of El Paso completed the endowed fund in 1988. Income provides for scholarships to music students.

DR. WILLIAM McANULTY MEMORIAL FUND

— Established in 1979 by alumni, friends, and associates, this permanent fund pays tribute to the memory of Dr. McAnulty for his 15 years as Chairman and Professor Emeritus of the Geology Department. Income is used for cash grants to graduate students in geological sciences and for equipment and supplies.

J. W. MILLER MEMORIAL GEOPHYSICS FUND

— Established in 1980 by R. O. Anderson from the Atlantic Richfield Company Foundation in memory of J. W. Miller, founder and former president of Gus Manufacturing Company. Income will be used for the unrestricted support of research in geophysics and related earth sciences.

DR. HASKELL M. MONROE, JR., LIBRARY FUND

— Established in 1987 in honor of Dr. Haskell M. Monroe's seven years of service to UT El Paso by Southwestern Bell Foundation, alumni, students and friends. Income earned from the endowment fund will be used for yearly purchases of books which will be marked in Dr. Monroe's honor, so that future readers will know of his influence and love for the University Library.

DR. & MRS. HASKELL MONROE PRESIDENTIAL ENDOWED SCHOLARSHIP FUND

— Created in 1984 by the President's Associates of The University of Texas at El Paso in honor of Dr. and Mrs. Haskell Monroe for establishing the Presidential Scholarship Program at this institution. Income earned from the permanent endowment fund will provide Presidential Scholarships.

RUBEN MONTIEL, JR., MEMORIAL SCHOLARSHIP FUND

— Established in 1986 by Mrs. M. Lorraine Montiel and friends, in memory of her husband, who died of leukemia on April 9, 1986. Montiel graduated from UT El Paso in 1980 and received a Master of Science degree in Civil Engineering in 1986. Income will provide an annual scholarship for civil engineers under the UT El Paso Presidential Scholarship Program.

R. C. MORGAN SCHOLARSHIP FUND

— One of the pioneers in the national credit union movement is honored by this endowed fund. Established in 1988 upon the retirement of R. C. Morgan, Government Employees Credit Union of El Paso, income is provided to outstanding students from the El Paso metropolitan area who attend UT El Paso and major in Business Administration.

FRANK AND POLLY ANN MORROW OUTSTANDING INTERNATIONAL STUDENT AWARD FUND

— Established in 1985 by Frank and Polly Ann Morrow, Chancellor's Council members, with income from this permanent endowment fund providing resources for a cash award and plaque to the most outstanding international student on a yearly basis.

MR. AND MRS. MacINTOSH MURCHISON CHAIR (I) IN ENGINEERING

— Established in 1985 by Mrs. Louise B. Murchison to recruit to the faculty an outstanding researcher in the field of Manufacturing Engineering or Materials Science.

MR. AND MRS. MacINTOSH MURCHISON CHAIR (II) IN ENGINEERING

— Established in 1986 by Mrs. Louise B. Murchison to support an outstanding faculty member whose work will contribute to the economic development and progress of the El Paso region and be involved in the teaching of undergraduate students.

MR. AND MRS. MacINTOSH MURCHISON CHAIR (III) IN ENGINEERING

— Established in 1987 after the death of Mrs. Louise B. Murchison in November 1986 to support outstanding faculty members whose work will contribute to the economic development and progress of the region.

MR. AND MRS. MacINTOSH MURCHISON CHAIR (IV) IN ENGINEERING

— Established in 1987 after the death of Mrs. Louise B. Murchison to provide resources for the development and implementation of the proposed doctoral program in Engineering at UT El Paso, thereby ensuring the integration of the two principal functions at UT El Paso, mainly teaching and research.

W. P. NASH SCHOLARSHIP FUND

— This endowment was created by W. P. Nash, Chairman and Chief Executive Officer of GeoSurveys, Inc., and a 1958 geology graduate, with income used to provide scholarships for upper-level undergraduate Geology majors.

LLOYD A NELSON MEMORIAL PROFESSORSHIP IN GEOLOGY

— Friends and associates of the late Dr. Lloyd A. Nelson, a distinguished alumnus and a member of the faculty from 1920 to 1964, have established a professorship in his honor. The professorship required an endowment of \$100,000.

BULAH L. PATTERSON MEMORIAL PRESIDENTIAL SCHOLARSHIP FUND

— Established in 1987 with the last Will and Testament of Bulah Liles Patterson, who died in 1986 at the age of 90 and was a former faculty member of UT El Paso from 1927 to 1967. Income from the endowment fund provides scholarships for students majoring in mathematics, engineering, nursing and allied health who qualify under the Presidential Scholarship Program. Mrs. Patterson taught mathematics to thousands of undergraduate students at Texas College of Mines and Texas Western College prior to her retirement in 1967.

D. L. AND LUCILLE PILLOW LIBRARY MEMORIAL FUND

— Established at the bequest of a prominent El Paso woman who left her estate to the University upon her death in 1986. Her husband organized the D. L. Pillow Company, which he operated for 30 years as one of the community's important businesses. D. L. and Lucille Pillow, both civic leaders, shared their love for the University and endowed a Library Fund for the purchase of new books and Library materials.

GORDON PONDER PERMANENT LIBRARY MEMORIAL FUND

— This fund was established by Mr. and Mrs. Jack Ponder in memory of their son who died while a student at The University of Texas at El Paso. Income is used to purchase books for the University Library.

THE PRESIDENT'S ASSOCIATES ENDOWMENT FUND

— This fund was created by the President's Associates, a group of friends of the University who contribute \$500 or more annually to academic programs. Each year one-half of the unrestricted gifts from members is transferred to the endowment fund. Income from the endowment is used for academic improvements as determined by the President of the University, with approval of the President's Associates Executive Committee.

PRESIDENTIAL SCHOLARSHIP PROGRAM

— Alumni, friends and associates established the Presidential Scholarship Program during the 1982 Presidential Scholarship Program year. Interest earned from the endowment is to be expended for one or more academic scholarships under the new Presidential Scholarship Program.

DR. HOWARD E. QUINN MEMORIAL FUND

— Established in 1987 by alumni, friends, colleagues, and corporations in memory of Howard E. Quinn for his dedicated service to the University. Income earned from the endowment will be used to promote the Department of Geological Sciences and to encourage additional funding for endowing a professorship.

DR. HOWARD E. QUINN GEOLOGY LIBRARY MEMORIAL FUND

— Alumni, friends and associates established this tribute in memory of this long-time chairman of the Geology Department to honor his 40 years of service to the University and its students. Income is used for the purchase of geology books for the Library.

VINCENT M. RAVEL COLLECTION OF JUDAICA

— A memorial to a prominent El Paso physician who made many contributions to the Library during his lifetime. After his death in 1969, his widow gave to the University their collection of books on Jewish history, culture, and customs. A permanent fund to finance additional purchases for the collection was established by Dr. Ravel's friends.

MARY HANNER REDFORD MEMORIAL FUND

— Established in 1981 by Mr. Tyler H. Haynes, Jr., in memory of his aunt, Mary Hanner Redford. Income to be used solely by Texas Western Press for publishing works dealing with the history of the Southwestern United States.

RINTELEN/EHRLINGER METALLURGICAL ENGINEERING SCHOLARSHIP

— Established by Donald and Ann McGehee, former students, in honor of Dr. Joseph Rintelen and the late Dr. Henry Ehrlinger, professors of Metallurgical Engineering, for an outstanding senior majoring in Metallurgical Engineering.

RODERICK MEMORIAL SCHOLARSHIP FUND

— Established under the will of Dorrance D. Roderick, long-time benefactor of the University, and prominent El Paso business leader, to provide scholarships for music majors selected by the University and the Musical Director of the El Paso Symphony Orchestra.

THE PATRICK ROMANELL LIBRARY FUND

— Established in 1974 by Dr. Patrick Romanell, an H. Y. Benedict Professor of Philosophy, to be used for purchase of books in the history and philosophy of medicine.

DR. WALTER R. ROSER MEMORIAL SCHOLARSHIP

— Established in 1987 by alumni, friends, relatives, colleagues, and corporations in memory of Walter R. Roser, who died in 1984 after serving in the Department of Metallurgical Engineering at UT El Paso for 18 years. Income from the endowment will provide an annual scholarship to an outstanding junior in metallurgical engineering.

JULIA ANN ROSS MEMORIAL SCHOLARSHIP

— Created by Mrs. Ross, an El Paso school teacher and alumna, who bequeathed a portion of her teacher's requirement fund to establish a permanent scholarship endowment to aid qualified students.

J. M. ROTH PERMANENT MEMORIAL FUND

— Established by contributions from the friends of the late educator, memorializing this former Chairman of the Departments of Philosophy and Psychology, by providing scholarships to students of Philosophy and Psychology.

EMMA H. SCHELLENGER TRUST

— Established under the will of Mrs. Emma H. Schellenger as a memorial to her husband, Newton C. Schellenger. The income from this trust held by Texas Commerce Bank is used for support of the Schellenger Research Laboratories.

SCHELLENGER PROFESSORSHIP IN ELECTRICAL RESEARCH

— Established in 1982 from the Schellenger Foundation Trust and the will of Emma H. Schellenger to provide a professorship in electrical research in the Department of Electrical Engineering. Income from the endowment will be used by a faculty member occupying the professorship to stimulate and promote funded research by providing seed money, travel, wages and salaries for support staff.

DAVID WADDELL SCHILLINGER SCHOLARSHIP

— A memorial to the son of Mr. and Mrs. William C. Schillinger, this scholarship was established in 1970. The endowment will provide funds each year for one or more students. The donors have permitted the University almost full discretion in selecting the recipient, requiring only that highest priority be given to financial need.

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MICHAEL J. SHEA MEMORIAL SCHOLARSHIP

— Established in 1975 by the family and friends of Lt. Michael J. Shea, USMC, a 1972 graduate of the University, who lost his life in the final evacuation of Americans and refugees from Saigon, South Vietnam. Income will provide a scholarship for a student majoring in physics or mathematics.

PATRICIA HEWITT SILENCE MEMORIAL TRUST

— This fund was established by the will of Miss Patricia Hewitt Silence of El Paso, who died in 1970. Her heirs created a trust at Texas Commerce Bank, the income of which will be used by the University in the furtherance of music and art, particularly art of the Southwest.

D. B. SMITH MEMORIAL SCHOLARSHIP

— Established in 1975 in memory of Mr. David B. Smith, a 1952 graduate of the University, by his family, friends and business associates. The scholarship is awarded to a student majoring in Geology.

C. L. SONNICHSEN SOUTHWEST PUBLICATIONS FUND

— The annual income from this endowment provides a unique award to the best writer of non-fiction in Southwestern history, art, or culture as determined by the Texas Western Press Editorial Board. Established by contributions from friends, former students, and colleagues, under the leadership of Lady Margaret Brand, this fund appropriately honors Dr. Sonnichsen, Professor Emeritus of English and noted Southwestern author, who introduced thousands of students to the literary heritage of the Southwest.

HARRY SPITZ MEMORIAL SCHOLARSHIP

— A permanent fund established in memory of Harry Spitz, prominent businessman and El Paso resident for 52 years, by his widow, Mildred Lelkowitz Spitz, and his daughter Leona Spitz Lakehomer. The scholarship will be awarded to a student majoring in pre-medical studies.

SOUTHWESTERN BELL TELEPHONE SCHOLARSHIP FUND

— Established in 1985 by Southwestern Bell Telephone Company and Southwestern Bell Foundation to provide qualified students academic scholarships in accordance with the UT El Paso Presidential Endowed Scholarship Program.

WILLIAM L. STALEY STUDENT RESEARCH FUND

— Established by Dr. E. W. Rheinheimer, a prominent El Paso physician and trustee for the estate of William L. Staley, this fund is used for annual grants to competitively-selected undergraduate students for research in human life sciences, with preference for pre-medical majors, and to provide research support to these selected students.

LYDIA STARK MEMORIAL SCHOLARSHIP FUND

— Established in 1970 in memory of a distinguished El Paso civic leader and teacher, with income from this endowment fund providing a scholarship to assist students who plan a career in Speech Therapy.

STATE NATIONAL BANK OF EL PASO PRESIDENTIAL SCHOLARSHIP FUND

— Established in 1982 by the State National Bank of El Paso (MBANK) during the Presidential Scholarship year as a challenge grant matching all new and increased gifts from alumni and friends of the University. Income from this permanent endowment fund provides a Presidential Scholarship.

STATE NATIONAL BANK OF EL PASO (MBANK) UNIVERSITY ENDOWED SCHOLARSHIP FUND

— Created in 1982 as a part of the Presidential Scholarship Fund "Challenge Grant" to provide a university endowed academic merit scholarship to worthy and deserving students from the El Paso school area.

EDWARD AND HELEN STERN FUND

— Created in 1986 by Drs. J. Edward and Helen M. C. Stern of El Paso to support the University. The fund is currently undesignated and use of the interest income will be selected by the Sterns in their will.

LUCILLE T. STEVENS ESTATE FUND

— Created in 1945 by the generous bequest of Mrs. Lucille T. Stevens, the estate fund provides income for one of the University's most valuable scholarship awards directed to male students with outstanding academic records. Mrs. Stevens in her last will and testament expressed her desire that these scholarship gifts funded by property and numerous assets assist those students who are striving to elevate themselves to become leaders of their country.

THE UNIVERSITY OF TEXAS AT EL PASO

WILLIAM S. STRAIN MEMORIAL GEOLOGY FUND

— Established in 1974 by alumni and friends, this fund honors former Professor Emeritus William S. Strain. The income is used by the Department of Geological Sciences to improve its teaching program and to provide undergraduate scholarships in tribute to Dr. Strain's 37 years as an outstanding teacher of the Earth Sciences.

STUDENT LOAN FUNDS

— Financial assistance to students in the form of emergency loans is available through loan funds established by friends of the University, both individual and organizational. The major named funds are:

The Alumni Association of UT El Paso, Inc. Loan Fund
Joaquin A. Boadella Memorial Loan Fund
Antoinette Cardona Loan Fund
Dr. Marion and Betty Cline Memorial Loan Fund
College of Nursing and Allied Health Emergency Loan Fund
El Paso Community Loan Fund
Foreign Students Loan Fund
Josephine Clardy Fox Student Loan Fund
Reynolds-Friedman Memorial Loan Fund
Bill Goodman Memorial Loan Fund
Hogg Foundation Loan Fund
W. W. Lake Loan Fund
LULAC Council #8 Student Loan Fund
Frank Meador Memorial Loan Fund
Nursing Student Loan Fund
Pilot Club of El Paso International Student Emergency Loan Fund
Evelyn Porterfield Loan Fund
Ralston Memorial Nursing Student Loan Fund
Student Association Emergency Loan Fund
Jennie B. Templeton Memorial Student Loan Fund
Woman's Auxiliary of UTEP Emergency Loan Fund

SUNTURIANS ENDOWED SCHOLARSHIP FUND

— Established in 1984 by the Sunturians of El Paso, a young businessman's organization, as a result of a successful Barbara Mandrell concert held in the Special Events Center of UT El Paso. Income earned from the permanent endowment fund will be used to provide undergraduate scholarships under the Presidential Scholarship Program.

DR. ARLEIGH B. TEMPLETON PROFESSORSHIP FUND

— Alumni, friends, foundations, and associates of former University President Dr. A. B. Templeton established a professorship in his honor upon his retirement in 1980. The professorship required an endowment of \$100,000 and is used to support the Financial Management and Banking Program in the College of Business Administration.

LEE TREVINO ENDOWMENT FUND

— This endowment was created by professional golfer Lee Trevino, with income from the endowment providing a scholarship for a deserving student golfer from the United States or Canada.

RICHARD E. VANREET M.D. MEMORIAL SCHOLARSHIP

— Established in 1987 by wife, Dr. Patricia Strickbine-VanReet, son, Alan R. VanReet, and parents Mr. and Mrs. Leo M. VanReet in memory of Richard E. VanReet, a 1973 UT El Paso graduate. Income earned from the endowment will be used to provide an annual scholarship in the College of Science for students classified as pre-medical or doing research in the sciences.

CAPTAIN JAMES R. VALTR MEMORIAL FUND

— An endowed scholarship established by Robert and the late Ollie Valtr, in memory of their son, a 1968 graduate, who was killed in action in Vietnam, June 16, 1971. A scholarship is awarded to an advanced ROTC student from the Department of Military Science.

WECHTER FUND FOR BUSINESS ADMINISTRATION

— Created in 1987 by Mr. and Mrs. Aaron Wechter of El Paso for the College of Business Administration to improve the overall academic programs. Wechter is a 1949 graduate of UT El Paso and a prominent businessman in the development and construction of apartment and commercial buildings.

THE JOHN AND VIDA WHITE ENDOWMENT FUND

— Created in 1982 by John S. White, former Registrar and Director of Admissions at Texas Western College, 1948-54, and his wife, Vida L. White, an El Paso school teacher and alumna, to establish a permanent endowment fund to create an awards program for the English Department (Creative Writing) on travel-related subjects and the Geography Department award on related

ENDOWMENTS, TRUSTS & MEMORIAL FUNDS/19

composition, with additional academic merit scholarships to senior-level students in each of these respective areas.

KATHERINE H. WHITE MEMORIAL LIBRARY AND SCHOLARSHIP FUND

— Established by U.S. Congressman Richard C. White of El Paso in memory of his wife, the late Katherine Hope Huffman White, who was an active, popular and respected social and civic leader, and an alumna of the University. The income from this fund is used to purchase books for the Library and provide scholarship assistance.

SISTER ALOYSIUS WILLIAMS LECTURESHIP FUND

— Established in 1986 upon the retirement of Sister Aloysius Williams, former *Director of Hotel Dieu School of Nursing and Director of Continuing Nursing Education, College of Nursing and Allied Health, UT El Paso.* Contributions from alumni, friends and colleagues honor her many years of service.

B. MARSHALL WILLIS LIBRARY MEMORIAL

— This permanent endowment was created in 1968 by friends of B. Marshall Willis, a distinguished alumnus, El Paso businessman and civic leader. Income from the endowment will purchase books in his memory each year in perpetuity.

ABRAHAM WINTERS — B'NAI B'RITH WOMEN SCHOLARSHIP

— Awarded annually, through a trust fund in memory of her husband, by Mrs. Judith Winters in conjunction with the B'nai B'rith women, to a deserving student.

JUDITH WINTERS SCHOLARSHIP

— This endowed scholarship was established by the generous gift of Mrs. Judith Winters of El Paso and is awarded annually to a qualified and deserving female student.

WOMAN'S AUXILIARY OF UTEP ATHLETIC SCHOLARSHIP FUND

— Established in 1985 by members of the Woman's Auxiliary of UTEP. Income earned is to be used to provide athletic scholarships in accordance with the National Collegiate Athletic Association rules and regulations.

WOMAN'S AUXILIARY OF UTEP ENDOWED SCHOLARSHIP FUND

— Established in 1985 by the Woman's Auxiliary of UTEP. Income earned is to be used to provide annual scholarships to qualified students in accordance with the Presidential Endowed Scholarship Program.

WOMAN'S AUXILIARY OF UT EL PASO LIBRARY ENDOWMENT

— This perpetual fund for the purchase of library books was established in 1969 by the Woman's Auxiliary of the University. The Auxiliary contributes each year to the *growth of the fund.*

MR. AND MRS. WILLIAM HENRY WOOLDRIDGE LIBRARY FUND

— Established in 1971 by Mr. and Mrs. Emil Jay Diltmer in honor of Mr. and Mrs. W. Henry Wooldridge of El Paso. The income from this endowment is used annually to purchase numerous books for the University Library in their honor.

YSLETA VOLUNTEER FIRE DEPARTMENT SCHOLARSHIP FUND

— Maintained for many years by the trustees of this organization and transferred to the University in 1970. The University will continue the trustees' policy of awarding one or more annual scholarships to graduates of Ysleta High School.





Admission to the University
Financial Aid
Undergraduate Scholarships

ADMISSION & FINANCIAL AID

Admission to the University

General Information

The University of Texas at El Paso is pleased to offer admission to any individual who meets University admission standards. This institution offers a comprehensive array of programs in both liberal arts and professional areas from the baccalaureate to the doctoral level. The UT El Paso community—students, faculty, alumni, administration, and friends—invites interested individuals to review the programs described in this catalog.

The Office of Undergraduate Recruitment and Scholarships serves as a source of university information for prospective students and high school counselors and administers the University's undergraduate scholarship program. New students and their parents desiring pre-enrollment counseling, information or a campus tour are asked to contact:

The University of Texas at El Paso
Office of Undergraduate Recruitment and Scholarships
El Paso, TX 79968-0504
(915) 747-5896

The Office of Admission and Evaluation is responsible for evaluating applicants for admission according to standards set by Texas law, the Board of Regents of The University of Texas System, and faculty of UT El Paso. For further information about admission to the University or about the evaluation of transfer credit, contact:

The University of Texas at El Paso
Office of Admission and Evaluation
El Paso, TX 79968-0510
(915) 747-5576

Admission applications are available at either of the above offices and in the counseling offices of most El Paso area high schools.

New Student Orientation

All new freshmen, transfer and readmitted students are invited to attend a New Student Orientation Program conducted by the Academic Advising Center staff. The program provides new students with opportunities to acquaint themselves with the campus and programs, take placement tests, attend information sessions and be advised for their classes. Students attending the two-day programs are given priority registration. Orientations are held prior to the beginning of each semester. The program is strongly recommended for all new freshmen and transfer students. New Provisional Admission students are required to attend orientation in partial fulfillment of their admission requirements. All new or readmitted undergraduates will receive information about New Student Orientation with their admission acceptance letters.

Admission Dates and Fees

Applications for admission are due by the following dates:

Summer I: April 1 Fall: July 1
Summer II: May 1 Spring: November 15

Applications from individuals who are not citizens or permanent residents of the United States must be accompanied by a non-refundable \$50 check or money order (U.S. dollars) made payable to The University of Texas at El Paso. ALL admission documents for international students must be received before the above deadline dates.

A non-refundable \$15 late fee is required of U.S. citizens and permanent residents who submit undergraduate applications after the dates noted above. NO APPLICATIONS FOR ADMISSION FOR A SPECIFIC SEMESTER WILL BE PROCESSED ONCE REGISTRATION FOR THAT SEMESTER HAS BEGUN.

Admission Policies and Procedures

The documents that must be submitted for admission to the University are determined by an individual's academic background, and all regularly admitted students must demonstrate adequate English ability that will enable them to successfully pursue university level work. All non-residents of the United States should consult the INTERNATIONAL STUDENT ADMISSION section to determine which documents are required for admission.

The file of an applicant whose academic background does not fall into one of the categories below will be carefully reviewed by the Office of Admission and Evaluation and the applicant will be notified of the appropriate documents required.

All documents must be submitted directly to the Office of Admission and Evaluation; official transcripts should be sent directly from the schools involved; official test scores should be sent directly from the appropriate testing agency. All documents submitted to the University become part of the official files of the University and cannot be returned.

Admission to the University does not assure admission to any of the professional colleges (Business Administration, Education, Engineering, or Nursing) or to any program with additional admission requirements.

RECOMMENDED HIGH SCHOOL PREPARATION

The high school curriculum listed below constitutes the recommended academic preparation for University work.

English	4 years
Mathematics	3-3½ years (Algebra — 2 years; Geometry — 1 year; Trigonometry — ½ year for science and engineering majors)
Natural Science	3 years (Biology, Chemistry and/or Physics)
Social Studies	3 years (U.S. History — 1 year; World History, World Geography, or History of Civilization — 1 year; American Government — ½ year; other social studies — ½ year)
Foreign Language	2 years of one

Freshman Admission: Applicants With No Previous College Work

CITIZENS OR PERMANENT RESIDENTS OF THE UNITED STATES WHO GRADUATED FROM AN ACCREDITED U.S. HIGH SCHOOL WITHIN THE PAST 5 YEARS.

Documents required: Application, official SAT or ACT scores; final, official high school transcript; immunization record.

The Scholastic Aptitude Test (SAT) or American College Test (ACT) is required for admission to the University. Any SAT or ACT score is acceptable from applicants in the first quarter of their high school graduating class. Students graduating in the second quarter of their class must score a minimum of 700 on the SAT or 15 on the ACT. Students graduating in the third or fourth quarter of their class must score a minimum of 800 on the SAT or 18 on the ACT.

For early notification of acceptance, verification of test scores, approximate class rank, and expected date of graduation should be sent directly from the high school to the Office of Admission and Evaluation. After graduation, a final, official transcript indicating final rank and graduation date must be submitted.

Students in their last semester of high school who meet the requirements for admission described above may, with the recommendation of their high school, be allowed to enroll concurrently in courses for which they have the appropriate background prior to graduation from high school. Contact the Office of Admission and Evaluation for additional information.

PROVISIONAL ADMISSION

Residents of Texas who graduated from an accredited high school within the past five years but whose test scores do not meet the requirements described above are eligible for admission to the University on a trial basis under the Provisional Admission Program. Provisional students must take prescribed courses, must attend New Student Orientation, must be advised by a faculty member in the Academic Advising Center, and must take a free, non-credit Study Skills course.

To clear provisional status, a provisional student must complete at least 9 hours with grades of "C" or better in each course selected from at least two of the following areas: English; Mathematics; Natural Science; Foreign Language; Political Science, History, Sociology,

Psychology, Anthropology, or Speech. An overall "C" (2.0) average must also be maintained.

If the student does not earn the overall 2.0 grade point average in the appropriate courses during the first semester of enrollment but has at least a 1.5 GPA, an additional semester in which to remove provisional status will be allowed. At the end of the second semester, the cumulative GPA must be a 2.0 in all courses taken, there must be a "C" in each required course, and all course criteria must have been met.

Students who have not satisfied these conditions must pursue one of two options if they wish to re-enroll at UT El Paso.

- (1) Apply for readmission after at least two years have elapsed since the last semester of attendance.
- (2) Apply for readmission after attending another college or university and accumulating a minimum of 12 semester hours with grades of "C" or better and an overall "C" average.

CITIZENS OR PERMANENT RESIDENTS OF THE UNITED STATES WHO GRADUATED FROM NON-U.S. HIGH SCHOOLS WITHIN THE PAST 5 YEARS

Documents required: Application; complete, official high school transcript; complete, official transcripts from each college or university attended, if applicable; official SAT, ACT, TOEFL, or PAA scores; immunization record.

The SAT or ACT must be taken by applicants whose post-elementary education was in English. An SAT total of 800 or higher, with a minimum of 400 on the Verbal or 40 on the TSWE (Test of Standard Written English) is required; or an ACT composite of 18 or higher with a minimum of 19 on the English section.

The TOEFL (Test of English as a Foreign Language) must be taken by applicants whose post-elementary education was not in English; a score of 500 is required.

The PAA (Prueba de Aptitud Academica) should be taken by applicants whose post-elementary education was in Spanish and who are not proficient enough in English to take the TOEFL; a total score of 1,000 is required. Applicants accepted with PAA scores are admitted into the bilingual Inter-American Science and Humanities Program in the College of Liberal Arts and are advised by the Department of Languages and Linguistics. Students admitted into the program are limited to regular University courses taught in Spanish and to ESOL (English for Speakers of Other Languages) courses. Once ESOL 3112 has been completed with a grade of "C" or better, the student may request a change of major.

After being admitted to the University, students whose post-elementary education was not in English must take a placement examination through the Department of Languages and Linguistics to determine proper course placement.

JUNIOR SCHOLARS PROGRAM

The Junior Scholars Program is a cooperative effort of The University of Texas at El Paso and El Paso area public and private schools, which allows qualified students to enroll in regular university courses while attending high school. Hours earned in this way will count as university credit and may also be approved to apply toward high school graduation requirements. Persons interested in this program should contact

The University of Texas at El Paso
 Junior Scholars Program
 309 Miners' Hall
 El Paso, TX 79968-0607
 (915) 747-5858

CITIZENS OR PERMANENT RESIDENTS OF THE UNITED STATES WHO GRADUATED FROM HIGH SCHOOL 5 OR MORE YEARS AGO

Documents required: Application; final, official high school transcript; immunization record.

The academic preparation described under RECOMMENDED HIGH SCHOOL PREPARATION is suggested. Students who lack adequate preparation will be considered for admission on an individual basis. After being admitted to the University, students whose post-elementary education was not in English must take a placement examination through the Department of Languages and Linguistics to determine proper course placement.

APPLICANTS WHO DID NOT GRADUATE FROM HIGH SCHOOL

Documents required: Application; official GED scores (English or Spanish); SAT, ACT, or PAA scores (as applicable); immunization record.

Individuals who did not finish high school are eligible for admission on the basis of an average standard score of 45 or higher on the Test of General Educational Development (GED). This test is administered to qualified residents of Texas by the University Counseling Service and other local test centers. A minimum SAT score of 800 or a minimum ACT score of 18 is required of applicants whose high school class would have graduated within the past five years and who pass the English version of the GED. Residents of Texas who meet the GED requirement but do not meet the SAT or ACT requirement will be considered for provisional admission. Applicants passing the English version of the GED whose high school class would have graduated five or more years ago are not required to submit test scores. All applicants passing the Spanish version of the GED must submit scores of 1000 or higher on the PAA (Prueba de Aptitud Academica). Applicants who meet the Spanish GED and PAA requirements are admitted into the bilingual Inter-American Science and Humanities Program.

Transfer Admission

CITIZENS OR PERMANENT RESIDENTS OF THE UNITED STATES WHO HAVE PREVIOUSLY ENROLLED AT ANOTHER COLLEGE OR UNIVERSITY (International students who have attended another college or university should refer to the section on International Student Admission.)

Documents required: Application; complete, official transcript from each college or university attended; immunization record. Applicants who graduated from high school within the past five years and who have earned fewer than 30 semester hours must also submit an official high school transcript and SAT or ACT scores.

An applicant from an accredited college or university who has completed at least 30 semester hours with a cumulative "C" average and who is eligible to return to all previous institutions attended will be considered for admission to UT El Paso. A student who does not have an overall "C" average but who meets the SAT or ACT score requirement described in the section on Freshman Admission will be considered for admission on academic probation.

A transfer applicant who graduated from high school within the past five years and whose SAT or ACT scores are below the requirement for freshman admission must have earned at least 12 hours with grades of "C" or better in each course completed and an overall "C" average to be considered for admission to UT El Paso.

A transfer applicant who is on academic suspension/dismissal and who must wait out a specific length of time before returning to the institution last attended must wait until that suspension period is over before registering at UT El Paso. A student who is ineligible to return to any of the schools previously attended or whose records will not be released by any of those institutions will not be admitted to the University.

Transfer applicants are required to indicate on the application for admission all previous colleges attended and to submit a complete, official transcript from each institution attended, regardless of the amount of work completed or the intent to have the credit transferred. Failure to provide complete information and documentation will be considered grounds for denial of admission, denial of transfer credit, cancellation of registration, or appropriate disciplinary action.

After being admitted to the University, students whose post-elementary education was not in English must take a placement examination through the Department of Languages and Linguistics to determine proper course placement.

TRANSIENT STUDENTS

Documents required: Application; Letter of Good Standing or official transcript; immunization record.

A transient student is a full-time student at another college or university who has earned at least 12 hours of "C" or better with an overall "C" average, who does not plan to pursue a degree at UT El Paso, and who wishes to attend school here for the summer only. A tran-

sient student may submit a Letter of Good Standing in place of an official transcript from the registrar of the school attended on a regular basis. A transient student who later decides to attend UT El Paso during a long semester must provide all documents required for transfer admission.

International Student Admission: Freshman and Transfer

For the purpose of evaluating admission credentials, all non-residents of the United States must meet the requirements described below. (International students who have attended other colleges or universities should also refer to the TRANSFER ADMISSION section for additional information concerning the acceptance of transfer credit.)

The University welcomes the application of qualified international students. Applicants must present documentation indicating, to the complete satisfaction of University officials, that there is high probability for successful completion of the desired program. The student must present evidence of academic ability and must complete the preparatory school work or its equivalent that would qualify for admission to recognized universities in the home country. Complete official transcripts showing classes taken and grades earned in all secondary schools and college must be provided. The scholastic average in the subject areas appropriate to the desired major field of study should be equivalent to at least a 3.0 on a 4.0 scale.

The University will accept only complete, official, or school-certified transcripts of high school and college work sent directly from each institution involved. If the original documents are in the student's possession, certified copies may initially be submitted and the originals presented to the Office of Admission and Evaluation upon arrival at the University.

A transfer applicant attending another institution on a student visa (I-20) will be considered for admission to UT El Paso if the requirements for transfer admission have been met and if the applicant has completed a minimum of 12 semester hours or its equivalent each long semester while in the United States. Failure to maintain this student status will result in denial of admission to UT El Paso.

Financial assistance for international students is extremely limited. Each student must furnish a statement of financial support from a parent or sponsor stating that they are able to finance the student's education while in this country. This must be done before the student's admission can be cleared. Further questions concerning finances should be sent to the Director of International Student Services, 301 Union West, El Paso, Tx 79968-0619.

GRADUATES OF FOREIGN HIGH SCHOOLS

Documents required: Application, accompanied by \$50 admission evaluation fee; satisfactory SAT, ACT, PAA or TOEFL scores; complete, official high school transcript; complete, official college or university transcript from each school attended, if applicable; acceptable statement of financial support; immunization record. All documents must be received by the University at least 60 days before the beginning of the semester for which the student is applying.

The SAT or ACT must be taken by applicants whose post-elementary education was in English. An SAT total of 800 or higher, with a minimum of 400 on the Verbal or 40 on the TSWE (Test of Standard Written English) is required; or an ACT composite of 18 or higher with a minimum of 19 on the English section. The TOEFL may be submitted by applicants whose post-elementary education was in English but for whom the SAT or ACT is unavailable in their home country.

The TOEFL (Test of English as a Foreign Language) must be taken by applicants whose post-elementary education was not in English; a score of 500 is required.

The PAA (Prueba de Aptitud Academica) should be taken by applicants whose primary language is Spanish and who are not proficient enough in English to take the TOEFL; a total score of 1,000 is required. Applicants accepted with PAA scores are admitted into the bilingual *Inter-American Science and Humanities Program in the College of Liberal Arts* and are advised by the Department of Languages and Linguistics. Students admitted into the program are limited to regular University courses taught in Spanish and to ESOL (English for Speakers of Other Languages) courses. Once ESOL 3112 has been

completed with a grade of "C" or better, the student may request a change of major.

After being admitted to the University, students whose post-elementary education was not in English must take a placement examination through the Department of Languages and Linguistics to determine proper course placement.

GRADUATES OF ACCREDITED UNITED STATES HIGH SCHOOLS

Documents required: Application, accompanied by \$50 admission evaluation fee; satisfactory SAT OR ACT scores; complete, official high school transcript; complete, official college or university transcript from each school attended, if applicable; acceptable statement of financial support; immunization record. All documents must be received by the University at least 60 days before the beginning of the semester for which the student is applying.

The SAT or ACT must be taken by applicants who graduated from accredited U.S. high schools. An SAT total of 800 or higher, with a minimum of 400 on the Verbal or 40 on the TSWE (Test of Standard Written English) is required; or an ACT composite of 18 or higher with a minimum of 19 on the English section.

Readmission

Documents Required: Application; college transcript(s), and immunization record (if applicable).

Former UT El Paso students who last attended the University prior to January 1, 1983, must submit an application for readmission. Students who have been enrolled at the University since January 1, 1983, but who have not been enrolled within the past twelve months do not need to complete an application, but must contact the Office of Admission and Evaluation to have their enrollment material reactivated. Students who have attended another college or university since last attending UT El Paso must submit an official transcript of that work so that it can be evaluated and added to the UT El Paso academic record.

Flexible Admission Program

The Flexible Admission (Flex-Ad) Program is designed for non-traditional students who have had little exposure to a university environment and who do not intend to pursue a degree at the time of their admission. Flex students are interested in attending the University to take selected basic undergraduate courses, to achieve personal educational objectives or to complete courses in a particular field for professional reasons.

To qualify for the Flex-Ad Program, an individual must be at least 23 years of age, a permanent resident of the United States, and eligible to return to any institutions previously attended; the program is not designed for transfer or continuing UT El Paso students. Individuals admitted under this option are subject to the same tuition, fees and regulations as degree-seeking students. A student who changes from Flex-Ad to degree-seeking status is required to meet all the requirements for regular admission to the University. Should an individual seek this change, a maximum of 30 semester hours accumulated under Flex-Ad can be counted toward an undergraduate degree. Individuals who have completed 30 semester hours will need approval from the Director of Admission to enroll in, or to continue to enroll under, the provisions of the Flex-Ad Program.

The Flex-Ad application form is available from the Office of Admission and Evaluation, and the late application fee does not apply to Flex-Ad applicants. Applicants should note that admission into a non-degree program like Flex-Ad will preclude their participation in federally funded financial aid programs.

Non-Accredited Schools

Documents required: Application; complete, official high school transcript, if applicable; complete, official college transcript, if applicable; SAT or ACT scores, if applicable; immunization record.

Individuals who graduated from a non-accredited high school or who attended a non-accredited college or university may be considered for admission to the University on a conditional basis if they meet the requirements for regular freshman or transfer admission. Students who graduated from a non-accredited high school must score a mini-

mum total of 800 on the SAT or 18 on the ACT. Conditions may be placed on the student's enrollment as determined by the Director of Admission and Evaluation.

Individual Approval

Documents required: Application; academic documents; letter of petition; immunization record.

Students whose individual circumstances are highly unusual with respect to their admission credentials may submit a written request to the Director of Admission petitioning admission on an individual basis.

Financial Aid

The Office of Financial Aid at The University of Texas at El Paso assists qualified students to meet the costs of a college education. No person is excluded from participating on the basis of race, color, national origin, religion, sex, age, veteran status, or handicap.

The office welcomes inquiries by mail or telephone but recommends that applicants visit the office personally so that availability and conditions of programs can be fully explained. Appropriate forms are available from counselors' offices at El Paso area high schools, and

The University of Texas at El Paso
Office of Financial Aid
202 Union West Bldg.
El Paso, TX 79968
(915) 747-5204

Financial Aid Policy

The amount and type of financial assistance provided will be by means of educational loans, grants, and college work-study in keeping with existing laws and regulations governing financial aid programs. Priority is given to undergraduate students with documented need, who meet academic eligibility criteria, who are enrolled on a full-time basis (12 hours or more), and whose applications are received by the deadline of April 1.

Financial aid awards are based on financial need and academic merit and are operated within existing federal, state and local regulations and policies. The difference between the cost of attending the University (student budget) and the student's/family resources (family and/or student contribution) determines financial need. For a detailed breakdown of direct and indirect educational costs, contact the above office for written material.

All financial aid applicants are required to submit a Need Analysis document to determine their financial need for the aid period. The University of Texas at El Paso prefers the use of the Family Financial Statement (FFS) of the American College Testing Program (ACT) to determine the parent and/or individual contribution; however, the results of the Financial Aid Form (FAF) of the College Scholarship Service (CSS) are also acceptable.

The Application Process

To be considered for financial assistance, a student must file a need analysis document each year, no later than April 1, in addition to a UTEP General Application. As soon as the need analysis document is processed, a notification copy will be mailed to the applicant and a similar report, giving a detailed analysis of the family's contribution, will be forwarded to the Financial Aid Office. This process usually takes four to six weeks.

Information obtained from the need analysis is used to determine the student's financial need and the types of awards for which the student qualifies. Awards made through this office fall into two categories: (1) gift aid, which includes grants and (2) self-help funds which include the College Work Study Program, and long term educational loans. The amount offered as a financial aid award plus the student's resources and those of the parents, if the student is dependent on parents for support, cannot exceed the student's budget.

Once documented need is established, the Financial Aid Office will make every effort to meet this need. The financial aid award will be packaged from a variety of sources and will be based on the financial need and program eligibility of the student and the available funds.

In some instances, due to fund limitation, program eligibility requirements, etc., the total award may be less than the documented need.

Transfer students and/or students applying for financial assistance for the spring semester, upon submission of all financial aid documents, will be considered for assistance based on the availability of funds.

For the Need Analysis to be sent to The University of Texas at El Paso, use code No. 4223 when using the ACT Family Financial Statement, or use code No. 6829 when using the CSS Financial Aid Form.

For non-need emergency loan fund programs, see Tuition and Fees Emergency Loans, elsewhere in this section.

Satisfactory Academic Progress Criteria

Definitions — These definitions are used in the academic eligibility criteria which follow:

ACADEMIC YEAR — two long semesters plus the Summer Session.

FULL-TIME ENROLLMENT — Undergraduate students who enroll for at least twelve credit hours during a long semester or for appropriately fewer credit hours during a summer term.

PART-TIME ENROLLMENT — Undergraduate students who enroll for fewer than twelve hours in a long semester or proportionately fewer hours during a summer term.

MEASURABLE PROGRESS — Completion of twelve credit hours per long semester for undergraduate students enrolled full-time. Students enrolled part-time must complete the hours for which they originally enrolled.

SATISFACTORY PROGRESS CRITERIA — The University of Texas at El Paso, in accord with federal regulations, requires that to be eligible for financial aid, a student must be maintaining satisfactory academic progress in a course of study. This requirement applies to the student's entire academic history at this University, whether financial aid was received or not; and to all types of aid, grants, loans and work study. The University has defined satisfactory progress as follows:

UNDERGRADUATE STUDENTS must maintain a 2.0 or higher GPA and complete their bachelor's degree within five academic years of full-time study or ten academic years of part-time study, according to the following schedule:

ACADEMIC YEAR	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
FULL-TIME STUDENT	24	48	72	96	balance required to complete degree					
PART-TIME STUDENT	12	24	36	48	60	72	84	96	108	balance required

Special Considerations

1. Transfer students who begin their academic career at another school, and then transfer to UT El Paso, must have their transcript evaluated by our Office of Admission and Evaluation. For these students, financial aid eligibility is identical to that of UT El Paso students with comparable credit hours; e.g., students who transfer 48 hours will be considered to be in their third academic year.
2. Students who have a degree and are enrolled in a second degree/certificate program at the same or lower level as their first degree/certificate (for example, second bachelor's degree, second master's degree, teacher's certificate) will be eligible for assistance from the Guaranteed Student Loan, or Nursing Loan Program, provided that financial need is demonstrated and they maintain satisfactory academic progress, and that the hours attempted for the second degree or certificate do not exceed the number of hours required for that degree or certificate.

Enforcement of Standards

1. Enrollment status (full or part-time) will be determined at the time of registration and confirmed on the University's official census date.

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2. Verifying grades and hours completed at the end of each long semester and the end of the summer session, the Office of Student Financial Aid will determine whether the student has made measurable progress with the required grade point average.
3. The following grades and notations will NOT be considered as credit hours completed: F, I, W, P, U, N, and X.
4. It is the student's responsibility to inform this office of any changes that might affect the determination of whether satisfactory academic progress is being made; to insure that the hours completed are applicable to the degree plan; and to determine the number of hours required for the degree and how many hours (above the minimum required) must be completed each academic year in order to complete the degree within the required time.

Failure to Meet Standards

1. The first time that a student fails to make measurable progress or fails to earn the required GPA, he or she will be placed on financial aid probation for the balance of the academic year. During that time, the student will be allowed to continue receiving awarded financial aid. A letter explaining this status will be given to the student.
2. During the time of financial aid probation, the student must meet the stated minimum grade requirement and complete enough work to meet the cumulative amount of work for the academic year as defined in the credit completion chart. If this is accomplished, financial aid probationary status will be removed and the student may continue to receive financial aid. It is the student's responsibility to insure that the Office of Student Financial Aid has received the necessary information to clear this status.
3. If at the end of the probationary period the student fails to meet the requirements, all financial aid will be terminated.
4. A student whose financial aid has been terminated can become eligible for financial aid again by attending one long semester (Fall or Spring) or Summer Session for no less than half-time at The University of Texas at El Paso, without financial aid, during which time satisfactory academic progress must be re-established. It is the student's obligation to inform the Office of Student Financial Aid when this has been achieved.

Appeals Process. Any student who has been determined to be ineligible for continued aid may appeal the termination under the following provisions:

1. The student obtains from the Office of Student Financial Aid an appeal form on which this office states the reason for the student's ineligibility. The student must attach to this form the following: a current transcript, a degree plan for students who have completed sixty hours or more, and the student's own written explanation of the circumstances which brought about the ineligibility.
2. All items are forwarded to the Financial Aid Internal Review (FAIR) Committee through the Office of Student Financial Aid. The committee meets monthly and makes its recommendations to the Director of the Office of Student Financial Aid, who makes the final decision.
3. Any student anticipating the necessity of making an appeal should be prepared to pay his or her own registration fees and all other related expenses in the event that the appeal is not approved or is approved after the deadline for paying registration fees. The Office of Student Financial Aid will not recommend any extension of the fee payment deadlines for such students.
4. Results of an Appeal must be picked up by the student from the Office of Student Financial Aid.

Types of Financial Assistance

The following summaries of financial aid programs are provided for information only. Complete details of the programs are available through the Office of Student Financial Aid.

GRANTS

Pell Grant

The Pell Grant Program is a federal student aid program designed

to assist students in pursuing their first undergraduate degree. The purpose of the Pell Grant is to provide eligible students with a foundation of aid to help pay the cost of attending school. Students who have applied for the Pell Grant will receive a "Student Aid Report" (SAR) within six weeks after submitting the application. The SAR should be forwarded to The University of Texas at El Paso Student Financial Aid Office so that the calculation of the Pell Grant award can be made. The amount of the grant award will be based on the "eligibility index" assigned to the student, the cost of attending UT El Paso, and a Payment Schedule provided by the Pell Grant Program. Undergraduate students must apply each year for the Pell Grant. Students must maintain satisfactory progress in order to remain eligible for the program.

Supplemental Educational Opportunity Grant (SEOG)

The SEOG is available for students who are enrolled and in good academic standing, making satisfactory academic progress, and demonstrating exceptional financial need. Priority will be given to students enrolling full-time and observing the application submission deadlines.

Texas Public Education-State Student Incentive Grant (TPE-SSIG)

This is a state-matched grant to be awarded based on financial need. Applicants may be graduate or undergraduate students and must be enrolled part-time or more. It is necessary to file a separate application for this grant.

Texas Public Education Grant (TPEG)

This grant provides financial assistance to students with financial need attending public institutions of higher education in Texas. Applicants must be undergraduates enrolled full-time. This grant may not be given simultaneously with any other grant.

STUDENT EMPLOYMENT (COLLEGE WORK-STUDY PROGRAM)

The College Work-Study Program provides jobs for students who have documented financial need and who wish to earn part of their educational expenses while going to school. Jobs cannot exceed fifteen hours per week at both on-campus and off-campus worksites and range from clerical worker to research assistant. The student will be paid at the prevailing minimum wage rate, as prescribed by federal law. Graduate and undergraduate students demonstrating financial need are eligible for participation in this program as long as they are enrolled on a full time basis.

LOANS

The Office of Student Financial Aid offers assistance to students through various long-term loan programs. Effective April 1, 1988 all recipients of a long-term loan are required to attend a Pre-loan Counseling Session, at the Office of Student Financial Aid prior to receipt of the loan funds. Loan repayment begins at the end of the grace period, six (6) months after the student ceases being at least a half-time student. If payment is not made at the end of the grace period, the student's loan is in default. The lending agency can then take necessary action to obtain payment to include use of a collection agency or court action. If this type of action is taken, the individual is required to repay the entire loan plus costs of collection. Specific descriptions of the various loan programs are listed below.

Hinson-Hazlewood College Student Loan

The Hinson-Hazlewood Student Loan Program for Texas residents requires evidence of financial need. This loan requires a separate application mailed by the Financial Aid Office to the Coordinating Board located in Austin, Texas, after determination of eligibility.

Interest does not accrue while the student is enrolled at least half-time.

Perkins Loan (formerly known as the National Direct Student Loan)

This loan requires evidence of financial need for eligibility. The interest is 5% and does not accrue while the student is enrolled at least half-time. There are provisions for partial cancellation and deferral for designated public service.

Robert T. Stafford Student Loan (formerly known as the Guaranteed Student Loan)

This loan requires evidence of financial need for eligibility. This program is offered through participating lending institutions. Under this plan, the student is responsible for locating a bank or lending institution that participates in the Guaranteed Student Loan Program. Although the Financial Aid Office is involved in certifying the student's enrollment and recommending action, the lending institution makes the final decision. This program is available for both undergraduate and graduate students.

Long-Term Loan Repayment Information

The long-term educational loans available through the Office of Financial Aid have many repayment benefits of which the prospective borrower should be aware. All of these loans defer payment while the borrower is enrolled in a course of study at least half-time. Repayment is made on a monthly basis, over a period not exceeding ten (10) years. Please refer to the most current Financial Aid brochure for repayment information.

Nursing Student Loan

Nursing loans provide funds for undergraduates in nursing. The interest rate is 6% and repayment begins immediately if the student changes to another major. The major criterion for this program is exceptional need.

Emergency Loans

Student emergency loan funds are maintained to assist students who are temporarily in need of funds. All regularly enrolled students who do not have an outstanding emergency loan are eligible. Freshman students need a co-signer. Loans must be repaid during the semester in which the loan is obtained. Interest charged on these loans is \$.50 or 10% per loan, whichever is greater.

Student Book Loan Program

A Student Book Loan Program is maintained to assist students in meeting their book costs. A book loan may not exceed one hundred (\$100.00) dollars and must be repaid during the semester in which the loan is obtained. Interest on this loan is 10% a year with a minimum service charge of fifty (\$.50) cents. Any student enrolled at this institution who does not already have an outstanding book loan is eligible to apply for this loan.

Future Teacher Loan Program

The purpose of this program is to encourage students to seek cer-

tification in, and to teach subjects designated by the State Board of Education as in critical need of teachers. A student must show financial need to be considered for this program.

Tuition and Fees Emergency Loans

These loans are available to students who need assistance in meeting the costs of tuition and fees. They are available to resident, non-resident, and international students, and documentation of need as described elsewhere in this section is not required for these loans. A special application form is available from the Office of Student Financial Aid, and applicants will be considered on a first-come, first-served basis.

EXEMPTIONS

Tuition Waiver

A Texas resident who can prove financial hardship may be awarded a waiver in the amount of the tuition portion of the tuition and fees. It is required that a student be enrolled full-time in order to secure this type of waiver. All Texas residents who file an application for financial assistance will be considered for this award based on financial need.

Military Service Veterans Waiver

Persons who have resided in Texas for at least twelve months prior to the date of registration, and who were citizens of Texas at the time of entry into military service, and who served in the Armed Forces or in certain of the auxiliary services in World War II (except those who were discharged because of being over the age of 38 or because of a personal request), the Korean War, and for more than 180 days during the Cold War, and were honorably discharged therefrom, and who are not eligible to receive benefits provided for veterans by the United States government, are exempt from the payment of tuition and certain required fees, but not from the payment of deposits. To obtain this exemption, the veteran must make application on the form prescribed by and obtained from the Office of Student Financial Aid. A certified copy of the veteran's service record (usually DD Form 214) must be submitted with the application. Exemption from fees described above also extends to the children of members of the Armed Forces who were killed in action or who died while in the service during the above-named conflicts, and to orphans of members of the Texas National Guard who were killed while on active duty since January 1, 1946.

While this program is not a need based program, a need analysis form must be submitted to determine if the veteran is eligible for other federally funded grant programs.

Undergraduate Scholarships

The University of Texas at El Paso has an excellent scholarship program designed to attract and retain bright scholars to the University. The majority of the scholarships are awarded for merit and are intended to recognize students for their outstanding academic accomplishments and future potential. These awards are made possible through the generosity of business firms, civic organizations, professional groups, individuals and University Endowed Funds. Please see the section titled "Endowments, Trusts and Memorial Funds" in the General Information section of this catalog.

Scholarship awards are given primarily to entering freshmen and are usually renewable for four years or eight long semesters, when the scholarship requirements are met. Some scholarships require documented financial need and a few awards are available for international students. Non-resident students awarded a competitive academic scholarship are eligible for resident tuition rates. Scholastically successful high school and community college students are encouraged to apply well in advance of registering for classes.

The University awards six types of scholarships, under the conditions indicated below:

Presidential and Presidential Excellence Scholarships

- (1) Amount awarded to be \$1,500 or \$2,000 annually, renewable for four years.
- (2) Qualifications:
 - *a. 1100+ SAT or 26+ ACT
 - *b. Top 3% of high school graduating class
 - *c. High School GPA of 3.7 or 96 or better
 - d. Three letters of recommendation
 - e. Personal statement of leadership responsibilities in high school and the community.
- (3) Recipient must maintain a cumulative GPA of 3.5 and complete 30 credit hours during the two long semesters each year.
- (4) Completed application should be received by February 28.

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- (5) Final determination for the awarding of the Presidential and Presidential Excellence Scholarship will be made by the Scholarship Committee. Public announcement of the recipients normally is made about the first of April.

Clardy Fox Scholarship (Women) Stevens Scholarship (Men)

- (1) Amount awarded to be \$1,000 annually, renewable for four years.
- (2) Qualifications: *a. 1000+ SAT or 24+ ACT
*b. Top 5% of high school graduating class
*c. High school GPA of 3.5 or 93 or better
- (3) Recipient must maintain a cumulative GPA of 3.2 and complete 30 credit hours during the two long semesters each year.

University Endowed Scholarship Guaranteed University Scholarship

- (1) Amount awarded to be \$750 annually, renewable for four years.
- (2) Qualifications: *a. 900+ SAT or 21+ ACT
*b. Top 10% of high school graduating class
*c. High school GPA of 3.3 or 90 or better
- (3) Recipient must maintain a cumulative GPA of 3.0 and complete 30 credit hours during the two long semesters each year.

*If one of these eligibility criteria is not met, a candidate may still be considered for a scholarship if a letter of explanation and recommendation is received from the high school counselor or principal. If all three are met, candidates will be considered for a \$2,000 Presidential Excellence Scholarship.

General Scholarships

- (1) Amount awarded will vary from \$200 to \$1,500 annually.
- (2) Qualifications: Must have a high school GPA of 3.0 or 85 or better.
- (3) Recipient must maintain a cumulative GPA of 3.0 and complete 30 credit hours during the calendar year.

National Merit Award

National Merit Finalists will automatically receive a \$250 award, in addition to any scholarship they might receive, if they enroll at UT El Paso as an entering freshman. The award will be renewable for four years, upon maintaining the requirements of the Undergraduate Scholarship Office. Simply provide the Scholarship Office with a copy of your notification of becoming a National Merit Finalist.

Scholarship Application Procedures

Persons wishing to apply for an undergraduate scholarship should follow these procedures.

1. Secure an Undergraduate Scholarship Application from the Office of Undergraduate Recruitment and Scholarships and return the completed application to the same office. Students need to submit only the University Scholarship Application to be considered for all scholarships offered by the University. Note: An application should be made as early as possible in the student's senior year of high school or for University students, at least one semester prior to the desired date of enrollment.
2. Complete the application process for University admission outlined earlier in this section of the catalog. High school students must submit a copy of their official high school transcript including the following: grade point average, current rank in class and SAT or ACT scores. College students need to submit a copy of their college transcript(s). A 3.0 grade point average is the minimum requirement for consideration.

Students interested in music service award scholarships or drama and forensic service award scholarships should contact the appropriate University department chairperson.

For information regarding undergraduate scholarships, write the Scholarship Officer, Office of Undergraduate Recruitment and Scholarships, UT El Paso 79968, or call (915) 747-5890.



Tuition and Fees
Housing Expenses
Residency Regulations

FINANCIAL INFORMATION

Tuition and Fees

The charges shown in these schedules must be paid by all students registering for credit. The amounts include the following:

Tuition

TEXAS RESIDENTS — \$18 per semester hour with a minimum assessment of \$100 for up to 5 semester hours. Effective Fall 1991, \$20 per semester with a minimum assessment of \$100 for up to 5 semester hours.

NON-RESIDENT/INTERNATIONAL STUDENTS — \$120 per semester hour. Effective Fall 1988 through Summer 1989. Non-resident/international students will be assessed the actual cost of education per semester hour as determined by the Texas Higher Education Coordinating Board.

CONCURRENT ENROLLMENT — Section 54.062 of the Texas Education Code provides for the following tuition procedure:

1. The student shall pay the full tuition charge to the first institution at which he or she is registered.
2. Generally, only the hourly rate is paid at the second institution. However, if the minimum amount is less at the first institution, then the student must pay the difference of the two minimums to the second institution but not less than the hourly rate. General fees, student service fees, union fees and optional fees are billed by each institution at its regularly authorized rate.

Mandatory Fees

GENERAL FEE — \$6 per semester hour

STUDENT SERVICES FEE — \$7.50 per semester hour, to a maximum of \$90 (12 semester hours).

STUDENT GENERAL PROPERTY DEPOSIT — \$10 fee assessed at the time of the student's initial registration at the University. This fee is refundable to the student at the end of his or her University enrollment. A property deposit which remains without call for refund for a period of four years from the date of last attendance at the University will be forfeited and will become the property of the Student General Property Deposit Endowment Fund. Such funds will be invested and the income will be used for scholarship purposes.

STUDENT UNION FEE — \$15 per long semester. The Student Union Fee is compulsory. The Union Fee entitles the student free use of facilities, which includes meeting rooms and lounge areas. The purpose of this fee is for the maintenance and operation of the Union Building.

COURSE-RELATED FEES — assessment of varying amounts, based on courses for which the student is enrolled.

Tuition and Mandatory Fees Schedules

Long Semesters (Fall and Spring), per semester:

Semester Hours	Resident/ Students (thru 1990-91 academic year)	Non Resident/ International Students (thru Summer, 1989*)
1	\$128.50	\$ 148.50
2	142.00	282.00
3	155.50	415.50
4	169.00	549.00
5	182.50	682.50
6	204.00	816.00
7	235.50	949.50
8	267.00	1,083.00
9	298.50	1,216.50
10	330.00	1,350.00
11	361.50	1,483.50
12	393.00	1,617.00
13	417.00	1,743.00

14	441.00	1,869.00
15	465.00	1,995.00
16	489.00	2,121.00
17	513.00	2,247.00
18	537.00	2,373.00
19	561.00	2,499.00
20	585.00	2,625.00
21	609.00	2,751.00

*Tuition rates for International/Non Resident students have not been determined for the 1989-90 and 1990-91 academic years.

Thesis/Dissertation — Students enrolling for courses 3598, 3599, 3620 or 3621 will be assessed as follows for tuition and mandatory fees:

Resident Students: \$109.50

Non-Resident/International Students: \$415.50

Summer Sessions:

The term lengths of Summer Session 1989 and 1990-91 have not been determined at this time. The following rates are based on a 9-week term.

Semester Hours	Resident Students (thru 1990-91 academic year)	Non Resident/ International Students (thru Summer, 1989*)
1	\$128.50	\$148.50
2	142.00	282.00
3	155.50	415.50
4	169.00	549.00
5	182.50	682.50
6	204.00	816.00
7	235.50	949.50
8	267.00	1,083.00
9	298.50	1,216.50
10	330.00	1,350.00
11	361.50	1,483.50
12	393.00	1,617.00

*Tuition rates for International/Non Resident students have not been determined for the 1989-90 and 1990-91 academic years.

Thesis/Dissertation — Students enrolling for courses 3598, 3599, 3620, 3621 will be assessed as follows for tuition and mandatory fees:

Resident Students: \$109.50

Non-Resident/International Students: \$415.50

LAB AND FINE ARTS FEES

	LAB FEE	FINE ARTS FEE
AHS 3401, 3402	\$4.00	
ART 3502, 3593		\$10.00
ARTE 3311, 3312, 3321	\$4.00	
ARTE 3501, 3511, 3522, 3597, 3598, 3599		\$10.00
ARTF 3101, 3102, 3103, 3104	\$4.00	
ARTG 3206, 3216, 3316, 3326, 3336, 3406, 3416, 3426	\$4.00	
ARTG 3550		\$10.00
ASTR 1107, 1108	\$8.00	
BIOL 1107, 1108, 1212, 1498, 2498, 3426, 3505, 3514, 3518, 3520, 3521, 3524, 5502	\$8.00	
BIOL 1215, 1217, 1319, 2423, 3498, 3502	\$30.00	
BOT 2338	\$8.00	
CE 1336, 1453, 2396, 3313, 3314, 4390, 4448, 4509, 4537, 4539	\$8.00	
CERM 3204, 3214, 3304, 3314, 3324	\$8.00	
CERM 3404, 3414, 3424, 3550		\$10.00
CHEM 1261, 1310, 1324, 1325, 1326, 1351, 1352, 1465, 1476, 1501, 2106, 2214, 2321, 2322, 2412, 3476, 4107, 4108	\$8.00	
DRAW 3208, 3218, 3308, 3318	\$8.00	

DRAW 3410, 3420, 3430, 3550	\$10.00
EE 3385	\$4.00
EE 1205, 1251, 2310, 2411, 2412, 4360, 4377	\$8.00
ESOL 2111, 2112	\$2.00
FREN 4101, 4102	\$2.00
GEOG 1106	\$4.00
GEOG 3208, 3308, 3310	\$8.00
GEOL 1101, 1102, 3542, 3545, 4320	\$4.00
GEOL 3380, 3533, 4505	\$5.00
GEOL 1455, 1457, 3103, 3104, 3213, 3214, 3304, 3305, 3315, 3321, 3325, 3424, 3462, 3520, 3525, 3530, 3535, 3541, 3566, 3567, 3568, 3573, 3575, 3578, 3579, 3580, 3594, 3595, 4111, 4112, 4323, 4458, 4591	\$8.00
GEOG 3432, 3434, 3558	\$8.00
GERM 4101, 4102	\$2.00
IE 3216, 3236, 3377	\$6.00
LATN 4101, 4102	\$2.00
LING 4103, 4104	\$2.00
MC 3201, 3302, 3305, 3406	\$5.00
MC 3304, 3330, 3351, 3353, 3407	\$7.00
MC 3307, 3421, 3454	\$10.00
MECH 3305, 3501, 4354, 4451	\$6.00
MET 4305	\$6.00
MET 4304, 4306, 4307, 4405, 4413, 4417	\$10.00
MICR 1241, 1328, 1346, 1350, 1452, 1454, 2348	\$8.00
MICR 1344, 1456	\$30.00
MTLS 3203, 3213, 3303, 3313, 3323	\$8.00
MTLS 3403, 3413, 3423, 3550	\$10.00
MUSA 2181, 2191, 2391, 2581	\$20.00
MUSA 3181, 3191, 3391, 3581, 3591, 4191, 4391	\$35.00
NURS 3302, 6306, 7371, 7410, 7411, 7471, 7472	\$10.00
NURS 7303	\$20.00
NURS 7302, 7370	\$30.00
PE 1101 (Swimming)	\$8.00
PE 1101 (All Other Activities)	\$4.00
PHYS 1120, 1121, 1217, 1218, 2217, 2343, 4103, 4104	\$8.00
PNTG 3201, 3231, 3301, 3331, 3341	\$4.00
PNTG 3401	\$6.00
PNTG 3431, 3441, 3550	\$10.00
PRNT 3205, 3225, 3305, 3325, 3335	\$8.00
PRNT 3405, 3425, 3435, 3550	\$10.00
PSCI 3101	\$8.00
PSYC 1321, 1322	\$10.00
PSYC 3523	\$20.00
RUSS 4101, 4102	\$2.00
SCUL 3202, 3232, 3302, 3332, 3342	\$8.00
SCUL 3402, 3432, 3442, 3550	\$10.00
SPAN 4101, 4102, 4103, 4104	\$2.00
ZOOL 1365, 1455, 1457, 1471, 1477, 1479, 1481, 4366	\$8.00

INCIDENTAL FEES

TRANSPORTATION FEES will vary according to the destination of the trip involved in the course.

GEOLOGY TRANSPORTATION FEE of \$200 will be assessed to students enrolled in Geology courses requiring extensive field trips during a semester.

COMPUTER USER CHARGE — A \$10 assessment is made when a student enrolls for certain classes which include substantial use of University computing facilities. Such classes are identified in the semester class schedule.

LATE REGISTRATION FEE — Any student who, with proper permission, registers after the appointed days for registering will be required to pay a special charge of \$5.00 for the first late day and \$2.50 for each additional late day to a maximum of \$15.00 to defray

the cost of the extra services required to effect the late registration.

ADD/DROP FEE — A fee of \$5.00 is assessed each time a student makes a change in the initial registration.

INTERNATIONAL STUDENT APPLICATION FEE — A fee of \$50.00 is assessed of all applicants for admission who are citizens of countries other than Mexico and who are not permanent residents of the United States. Applications not accompanied by a \$50 check or money order, payable in U.S. funds, will not be considered. An individual who has applied, paid the fee, and been accepted but who does not enroll, will be considered for later admission only upon reapplication including payment of this fee again.

SPECIAL EXAMINATION FEE — A fee of \$1.00 is required of persons who wish to take an advanced standing examination, an examination to remove a condition, or an examination to be given at a time other than that for which it is regularly scheduled. Permission of the academic dean must be secured before payment is made.

GRADUATION FEE — A fee of \$15.00 is required of candidates for graduation. This fee must be paid each time an application for degree is filed and under no circumstances is subject to refund. Veterans attending the University under an exemption as defined elsewhere in this section are not exempt from payment of this fee.

IN ABSENTIA REGISTRATION FEE — A fee of \$15.00 will be assessed to graduate students who have completed the degree requirements, including submission of the thesis or dissertation, after the semester deadline, but prior to registration for the following semester to register for the sole purpose of receiving the degree.

LATE UNDERGRADUATE ADMISSION APPLICATION FEE — A fee of \$15 will be assessed to undergraduate applicants that file after the scheduled deadlines to submit applications for admission to the University.

NEW STUDENT ORIENTATION FEE — A \$15.00 fee will be assessed to all students that participate in the University's orientation program that is offered to all incoming Freshmen and new transfer students.

LIBRARY FEES — A fee of \$.20 per day to a maximum of \$6.00 per book will be assessed to students that fail to return library books when due. A student will be charged the replacement value for a lost book.

TRANSCRIPT FEE — A fee of \$1.00 will be assessed to students for an unofficial copy of their transcript. A fee of \$2.00 will be assessed for an official copy.

RETURNED CHECK FEE — A fee of \$15.00 will be assessed to students that issue payment to the University with a check that is returned to the University for insufficient funds.

INSTRUMENT USERS FEE — A fee of \$15 will be assessed to students per semester that wish to use musical instruments that are available through the Music Department.

STUDENT IDENTIFICATION CARD REPLACEMENT FEE — A fee of \$10 will be assessed to students that need to replace their I.D. cards.

CATALOG FEE — A fee of \$1 will be assessed to students that pick up the University catalog. A fee of \$2.00 will be assessed to students that request a University catalog to be mailed.

PARKING FEE

The Board of Regents has approved a parking fee as follows for those students desiring to park cars on the campus:

Fall Semester	\$10.00
Spring Semester	6.50
Summer Session	4.00

Note: The fee is payable only once during the school year and is in effect from the date paid to the end of the school year in which paid. There will be no refund of the parking fee.

Methods of Payment

Master Card and Visa will be accepted for payment of tuition and fees. Students using Master Card or Visa must pay their total charges at registration.

The University offers the following three payment options during long semesters only.

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1. Full payment of tuition and all fees at the time of registration.
2. One half payment of tuition, mandatory and course-related fees at the time of registration, with the remaining one-half due by the end of the seventh week of classes. All other fees and charges, including an Installment Payment Service Charge of \$12, are to be paid at the time of registration.
3. One-fourth payment of tuition, mandatory and course-related fees at the time of registration, with the remaining three-fourths due in equal installments by the end of the third, seventh and eleventh weeks of classes. All other fees and charges, including an Installment Payment Service Charge of \$12, are to be paid at the time of registration.

Assessments for which payment can be deferred under options 2 or 3 above include the following:

- Tuition
- Mandatory Fees (General Fee, Student Services Fee)
- Course-related Fees (Laboratory, Fine Arts, Transportation Fees; Computer User Fees)

Items for which payment MAY NOT be deferred include the following:

- Student General Property Deposit
- Service Fees/Incidental Fees (Late registration, Add/Drop, etc.)
- Discretionary Fees (Parking decals, liability insurance, health insurance)
- Installment Payment Service Charge
- Amounts due for financial holds or from prior periods

The following additional policies will apply to deferral of payments:

1. All student account balances due from prior semesters, including items associated with payment deferred, must be paid in full before a student may begin registration for a subsequent semester.
2. A payment plan selected at the time of registration will be binding and will be applied in any subsequent add/drop activities; however, pre-payment of outstanding balances will be accepted. The University shall assess the Installment Payment Service Charge of \$12.00 for those students choosing payment options 2 or 3; this charge is payable at the time of registration. A Late Installment Payment Charge of \$10.00 will be assessed at the end of the third, seventh, and eleventh class weeks if the payment due for that period is not paid in full.
3. The Bursar's Office of the University will send bills during the second, sixth, and tenth class weeks to students paying tuition and fees under Options 2 and 3.
4. Section 54.007 of the Texas Education Code provides for the following penalties for non-payment:

A student who fails to provide full payment of tuition and fees, including any late fees assessed, to the University when the payments are due is subject to one or more of the following actions at the University's option:

- a. Bar against readmission at the institution;
- b. Withholding of grades, degree and official transcript; and
- c. All penalties and actions authorized by law.

Refund of Tuition and Fees

Refund policies are established by, and are subject to change by, the Legislature of the State of Texas and are applicable to withdrawals and dropped courses. Refunds of tuition, laboratory fees, general fees and student services fees will be made under the following conditions.

WITHDRAWALS — Students withdrawing during a long semester will be refunded applicable tuition and fees as follows:

Prior to first class day	100% less \$15.00
During first five class days	80%
During second five class days	70%
During third five class days	50%
During fourth five class days	25%
After fourth five class days	No Refund

Students withdrawing during a short Summer Session term will be refunded applicable tuition and fees as follows:

Prior to first class day	100% less \$15.00
During first three class days	80%
During second three class days	50%
After sixth class day	No Refund

DROPPED COURSES — Refunds of applicable tuition and fees will be made for courses from which students drop within the first twelve class days of a Long Session semester or an appropriately shorter period for a Summer Session term, provided the student remains enrolled for that semester or term. Refund of tuition for dropped courses will be made only if the original payment exceeds the established minimum amount.

Refunds of tuition and fees paid in the student's behalf by a sponsor, donor or scholarship will be made to the source rather than directly to the student who has withdrawn or dropped courses if the funds were made available through the University. Students who withdraw or drop courses must, in order to qualify for a refund, surrender all applicable privileges, including identification cards and athletic and cultural entertainment tickets. Refunds provided for above will be granted if applied for by the end of the semester in which the withdrawal or drop was appropriately completed. Refunds for students who owe balances in deferred payment of tuition/fees will be credited to the student's account.

Housing Expenses

Residence Hall room rates for 1988-89 are as follows:

Room Only

ONE SEMESTER CONTRACT — 4-1/2 months	
Double Room	\$1,005
Suite (double occupancy)	1,155
Private Room (when available)	1,305
LONG SESSION CONTRACT — 9 months	
Double Room	1,750
Suite (double occupancy)	2,050
Private Room (when available)	2,350

* A \$75 per semester rate reduction will be offered to students who pay the entire semester charge for a long session in advance as opposed to the normal four (4) payments per semester plan.

Meal Plans

Optional meal plans and resident meal plans are available throughout the long session and Summer Session.

Student Family Apartments

Monthly rent (includes utilities) \$ 300

Rates are subject to change by action of the Board of Regents, The University of Texas System. Further information about the UT El Paso student housing facilities, as well as application forms, can be obtained from:

Housing Business Office
Kelly Hall #105
UT El Paso
El Paso, TX 79968

Residency Regulations

An individual seeking information or advice on determining residence status should contact the Office of Admission and Evaluation.

Under state statutes and Coordinating Board rules and regulations interpreting those statutes, a prospective student will be classified as a resident, non-resident, or foreign student.

A person who has resided in the state under circumstances specified in these rules will be eligible for classification as a resident. A U.S. citizen or permanent resident of the United States who is not eligible to be classified as resident will be classified as a non-resident. An alien who is not a permanent resident of the United States and who has not been permitted by Congress to adopt the United States as his or her domicile while in this country will be classified as a foreign student.

An individual classified as a non-resident or as a foreign student may qualify, under certain exceptions specified in these rules, for resident tuition while continuing to be classified as a non-resident or foreign student.

A student entering The University of Texas at El Paso for the first time or after an absence of more than one year should carefully read the rules governing the determination of residence as stated below in order to be prepared to pay the required tuition.

STATE STATUTES

Chapter 54 of the *Texas Education Code* authorizes the Texas Higher Education Coordinating Board to promulgate regulations governing residency status for tuition purposes in public institutions of higher education. Portions of the current regulations are reprinted below as a convenience to the student. The regulations are subject to change. More specific information can be obtained from the Office of Admission and Evaluation.

MINORS AND DEPENDENTS

SECTION 54.052(c) An individual who is under 18 years of age or is a dependent and who is living away from his family and whose family resides in another state or has not resided in Texas for the 12-month period immediately preceding the date of registration shall be classified as a non-resident student.

SECTION 54.052(d) An individual who is 18 years of age or under or is a dependent and whose family has not resided in Texas for the 12-month period immediately preceding the date of registration shall be classified as a non-resident student regardless of whether he has become the legal ward of residents of Texas or has been adopted by residents of Texas while he is attending an educational institution in Texas, or within a 12-month period before his attendance, or under circumstances indicating that the guardianship or adoption was for the purpose of obtaining status as a resident student.

SECTION 54.055 An individual who is 18 years of age or under or is a dependent and whose parents were formerly residents of Texas is entitled to pay the resident tuition fee following the parents' change of legal residence to another state, as long as the individual remains continuously enrolled in a regular session in a state-supported institution of higher education.

RESIDENCE OF A MINOR OR A DEPENDENT; DIVORCE OF PARENTS. The legal residence of minors or dependent children is usually that of the parent with whom the individual spends the principal amount of time. Upon divorce of parents, residency of a minor is based on the residence of the parent who has legal custody or has claimed the minor for federal income tax purposes both at the time of enrollment and for the tax year preceding enrollment. For dependents over 18, residency is determined by the residence of the parent who claims the student for federal income tax purposes both at the time of enrollment and for the tax year preceding enrollment.

CUSTODY BY COURT ORDER. If the custody of a minor has been granted by court order (e.g., divorce decree, child custody action, guardianship or adoption proceedings) to some person other than the parent, the residence of the person shall control; provided, however, that such grant of custody was not ordered during or within a year prior to the minor's enrollment in a public institution of higher education and was granted under circumstances indicating that such guardianship was not for the purpose of obtaining status as a resident student.

If the minor is not residing with either parent, and there is no court-appointed guardian, the residence of the parent with whom the minor last resided shall be presumed to control. If, however, the minor resided with and has been dependent upon a grandparent for more than a year prior to enrollment in a public institution of higher education, the residence of that natural guardian will be regarded as the minor's residence. The residence of a person other than a parent or a natural or legal guardian who may furnish funds for payment of tuition, fees, or living expenses will in no way affect the residence classification of a minor.

INDIVIDUALS OVER 18

SECTION 54.052(e) An individual who is 18 years of age or over who has come from outside Texas and who is gainfully employed in Texas

for a 12-month period immediately preceding registration in an educational institution shall be classified as a resident student as long as he continues to maintain a legal residence in Texas.

SECTION 54.052(f) An individual who is 18 years of age or over who resides out of the state or who has come from outside Texas and who registers in an educational institution before having resided in Texas for a 12-month period shall be classified as a non-resident student.

SECTION 54.052(g) An individual who would have been classified as a resident for the first five of the six years immediately preceding registration, but who resided in another state for all or part of the year immediately preceding registration, shall be classified as a resident student.

SECTION 54.054 A non-resident student classification is presumed to be correct as long as the residence of the individual in the state is primarily for the purpose of attending an educational institution. After residing in Texas for at least 12 months, a non-resident student may be reclassified as a resident student as provided in the rules and regulations adopted by the Texas Higher Education Coordinating Board. Any individual reclassified as a resident student is entitled to pay the tuition fee for a resident of Texas at any subsequent registration as long as he continues to maintain his legal residence in Texas.

ESTABLISHMENT OF RESIDENCE. Individuals 18 years of age or older who move into the state and who are gainfully employed within the state for a period of 12 months prior to enrolling in a public institution of higher education are entitled to classification as residents. If such 12 months residence, however, can be shown not to have been for the purpose of establishing legal residence in the state but to have been for some other purpose, the individuals are not entitled to be classified as residents. Students enrolling in an institution of higher education prior to having resided in the state for 12 months immediately preceding time of enrollment will be classified as non-residents for tuition purposes.

DEPENDENTS OVER 18. For dependents over 18, residency is determined by the parent who claims the student for federal income tax purposes both at the time of enrollment and for the tax year prior to enrollment.

RE-ESTABLISHMENT OF RESIDENCE. Persons who resided in Texas for at least 5 years prior to moving from the state, and who have returned to the state for residence purposes before having resided out of the state for a year, will be classified as residents. The parent(s) of dependents must return to the state to live in order for the minor or the dependent to be considered a resident.

RECLASSIFICATION. Persons classified as non-resident students upon first enrollment in a public institution of higher education are presumed to be non-residents for the period during which they continue as students. If such non-resident students withdraw from school and reside in the state while gainfully employed for a period of 12 months, upon re-entry into an institution of higher education they will be entitled to be reclassified as residents for tuition purposes. Accumulations of summer and other vacation periods do not satisfy this requirement. Reclassification to resident status after residing in the state for 12 months cannot be based solely upon the student's or the student's spouse's employment, registration to vote, registration of a motor vehicle and payment of personal property taxes thereon, or the securing of a Texas driver's license. The presumption of "non-resident" is not a conclusive presumption, however, and other facts may be considered to determine if the presumption has been overcome. Material to this determination are business or personal facts or actions unequivocally indicative of a fixed intention to reside permanently in the state. Such facts may include, but are not limited to, the length of residence and full-time employment prior to enrolling in the institution, the fact of full-time employment and the nature of such employment while a student, purchase of a homestead with substantial down payment, or dependency upon a parent or guardian who has resided in Texas for at least 12 months immediately preceding the student's enrollment. All of these facts are weighed in the light of the fact that a student's residence while in school is primarily for the purpose of education and not to establish residence, and that decisions of an individual as to residence are generally made after the completion of an education and not before.

Students classified as non-resident students shall be considered

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to retain that status until they submit the Residence Questionnaire and it is approved in writing by the Office of Admission and Evaluation. Application for reclassification should be submitted before registration for the semester for which the change is sought.

LOSS OF RESIDENCE. Persons who have been attending Texas public institutions of higher education as residents and who move out of state will be classified as non-residents immediately upon leaving the state, unless their move is temporary (generally less than 5 years) and residence has not been established elsewhere. Conclusive evidence must be provided by the individuals supporting their present intent to return to the state. Among other things, a certificate from the employer that the move outside the state is temporary and that a definite future date has been determined for return to Texas may qualify as proof of the temporary nature of the time spent out of the state. Internship programs as part of the academic curriculum that require the student to return to school may qualify as proof of the temporary nature of the time spent out of state.

MARRIED STUDENTS

SECTION 54.056 A student who is a resident of Texas who marries a non-resident is entitled to pay the resident tuition fee as long as the student does not adopt the legal residence of the spouse in another state.

FOREIGN STUDENTS

SECTION 54.057 An alien who is living in this country under a visa permitting permanent residence or who has filed with the proper federal immigration authorities a declaration of intention to become a citizen has the same privilege of qualifying for resident status for fee purposes under this Act as has a citizen of the United States.

Note: Only a permanent resident may file with the federal immigration authorities a declaration of intention to become a citizen. Generally, individuals who enter the state under a student or tourist visa and who obtain permanent resident status while in Texas must wait a minimum of 12 months from the date of issue to request resident status for tuition purposes.

EXCEPTIONS

MILITARY PERSONNEL AND VETERANS

SECTION 54.058(a) Military personnel are classified as provided by this section in the following manner.

- (b) A person who is an officer, enlisted person, selectee, or draftee of the Army, Army Reserve, Army National Guard, Air National Guard, Air Force, Air Force Reserve, Navy, Navy Reserve, Marine Corps, Marine Corps Reserve, Coast Guard, or Coast Guard Reserve of the United States, who is assigned to duty in Texas and the spouse and children of such an officer, enlisted person, selectee, or draftee, are entitled to register in a state institution of higher education by paying the tuition fee and other fees or charges required of Texas residents, without regard to the length of time the officer, enlisted person, selectee, or draftee has been assigned to duty or resided in the state. However, out-of-state Army National Guard or Air National Guard members attending training with Texas Army or Air National Guard units under National Guard Bureau regulations may not be exempted from non-resident tuition by virtue of that training status nor may out-of-state Army, Air Force, Navy, Marine Corps, or Coast Guard Reserves training with units in Texas under similar regulations be exempted from non-resident tuition by virtue of such training status. It is the intent of the legislature that those members of the Army or Air National Guard or other reserve forces mentioned above be exempted from the non-resident tuition fee and other fees and charges only when they become members of Texas units of the military organizations mentioned above.
- (c) As long as they reside continuously in Texas, the spouse and children of a member of the Armed Forces of the United States who has been assigned to duty elsewhere immediately following assignment to duty in Texas are entitled to pay the tuition fees and other fees or charges provided for Texas residents.
- (e) A Texas institution of higher education may charge to the United States Government the non-resident tuition fee for a veteran enrolled under the provisions of a federal law or regulation authorizing education or training benefits for veterans.

- (f) The spouse and children of a member of the Armed Forces of the United States who dies or is killed are entitled to pay the resident tuition fee if the wife and children become residents of Texas within 60 days of the date of death.
- (g) If a member of the Armed Forces of the United States is stationed outside Texas and his spouse and children establish residence in Texas by residing in Texas and by filing with the Texas institution of higher education at which they plan to register a letter of intent to establish residence in Texas, the institution of higher education shall permit the spouse and children to pay the tuition, fees, and other charges provided for Texas residents without regard to length of time that they have resided within the State.

STUDENTS ENROLLED IN ROTC PROGRAMS. A non-resident student who is a member of an ROTC unit will be required to pay non-resident tuition rates until such time as the student has signed a contract which cannot be terminated by the student and which obligates the student to serve a period of active military duty.

LEGAL RESIDENCE OF PERSONS IN MILITARY SERVICE. Persons in military service are presumed to maintain during their entire period of active service the same legal residence which was in effect at the time of entering military service. Persons stationed in a state on military service are presumed not to establish a legal residence in the state because their presence is not voluntary but under military orders. It is possible for members of the military service to abandon the domicile of original entry into the service and to select another, but to show establishment of a new domicile during the term of active service there must be clear and unequivocal proof of such intent. An extended period of service alone is not sufficient. The purchase of residential property is not conclusive evidence unless coupled with other facts indicating an intent to put down roots in the community and to reside there after termination of military service.

Evidence which will be considered in determining this requisite intent includes, but is not limited to, a substantial investment in a residence and the claiming of a homestead exemption thereon, registration to vote and voting in local elections, registration of an automobile in Texas and payment of personal property taxes thereon, obtaining a Texas driver's license, maintaining checking accounts, savings accounts, and safety deposit boxes in Texas banks, existence of wills or other legal documents indicating residence in Texas, change of permanent address with the military and designation of Texas as the place of legal residence for income tax purposes on military personnel records, business transactions or activities not normally engaged in by military personnel, and membership in professional and other state organizations. Purchase of property during terminal years of military service preceding retirement generally is given greater weight than a similar purchase made prior to such terminal period. Additionally, a terminal duty assignment in Texas in which an individual has engaged in personal, business and/or professional activities indicative of intent to remain in the state will be given more consideration than most other evidence presented.

RESIDENCE CLASSIFICATION OF VETERANS UPON SEPARATION FROM MILITARY SERVICE. Persons who enroll in a public institution of higher education following separation from military service must be classified as non-resident students unless (1) they were legal residents of Texas at the time of entry into military service and have not relinquished that residence, (2) they can prove that during military service they have, in fact, established bona fide, legal residence in Texas at least 12 months prior to enrollment, or (3) they have resided in Texas other than as students for 12 months prior to enrollment and subsequent to discharge from service. The non-resident classification is a presumption, however, that can be overcome pursuant to the guidelines and standards for establishing Texas residence (see INDIVIDUALS OVER 18).

TEACHERS AND PROFESSORS

SECTION 54.059 A teacher or professor of an institution of higher education, and the spouse and children of such a teacher or professor, are entitled to register in an institution of higher education by paying the tuition fee and other fees or charges required for Texas residents without regard to the length of time the teacher or professor has resided in Texas. A teacher or professor of an institution of higher education and the teacher's or professor's family are entitled to the ben-

enefit of this section if the teacher or professor is employed at least one-half time on a regular monthly salary basis by an institution of higher education.

TEACHING OR RESEARCH ASSISTANTS

SECTION 54.063 A teaching or research assistant of any institution of higher education and the spouse and children of such a teaching or research assistant are entitled to register in a state institution of higher education by paying the tuition and fees and other fees or charges required for Texas residents under SECTION 54.051 of this code, without regard to the length of time the assistant has resided in Texas, if the assistant is employed at least one-half time in a teaching or research position which relates to the assistant's degree program under rules and regulations established by the employer institution.

SCHOLARSHIP RECIPIENTS

SECTION 54.064 A student who holds a competitive academic scholarship of at least \$200 for the academic year or summer for which the student is enrolled and who is either a non-resident or a citizen of a country other than the United States of America is entitled to pay the fees and charges required of Texas residents without regard to the length of time the student has resided in Texas. The student must compete with other students, including Texas residents, for the academic scholarship and the scholarship must be awarded by a scholarship committee officially recognized by the administration and be approved by the Texas Higher Education Coordinating Board under criteria developed by the Board.

RESPONSIBILITIES

STUDENTS

SECTION 54.0521 Oath of Residency. (a) Before an individual may register at an institution of higher education paying tuition at the rate provided for residents, the individual must affirm under oath to the appropriate official at the institution that the individual is entitled to be classified as a resident for purposes of tuition.

(b) If the institution later determines that the individual was not entitled to be classified as a resident at the time of the individual's registration, the individual shall, not later than 30 days after the date the individual is notified of the determination, pay to the institution the amount the individual should have paid as a non-resident.

(c) If the individual fails to make a timely payment as required by this section, the individual is not entitled to receive a transcript or to receive credit for courses taken during the time the individual was falsely registered as a resident student.

OATH OF RESIDENCY. The student is responsible for registering under the proper residence classification and for providing documentation as required by the public institution of higher education. If there is any question about the right to classification as a resident of Texas, it is the student's obligation, prior to the time of enrollment, to raise the question for official determination by the Director of Admission and Evaluation. Students classified as Texas residents must affirm the correctness of that classification as a part of the admissions procedure. If the student's classification as a resident becomes inappropriate for

any reason, it is the responsibility of the student to notify the Office of Admission and Evaluation. Failure to notify the institution constitutes a violation of the oath of residency and will result in disciplinary action.

RECLASSIFICATION

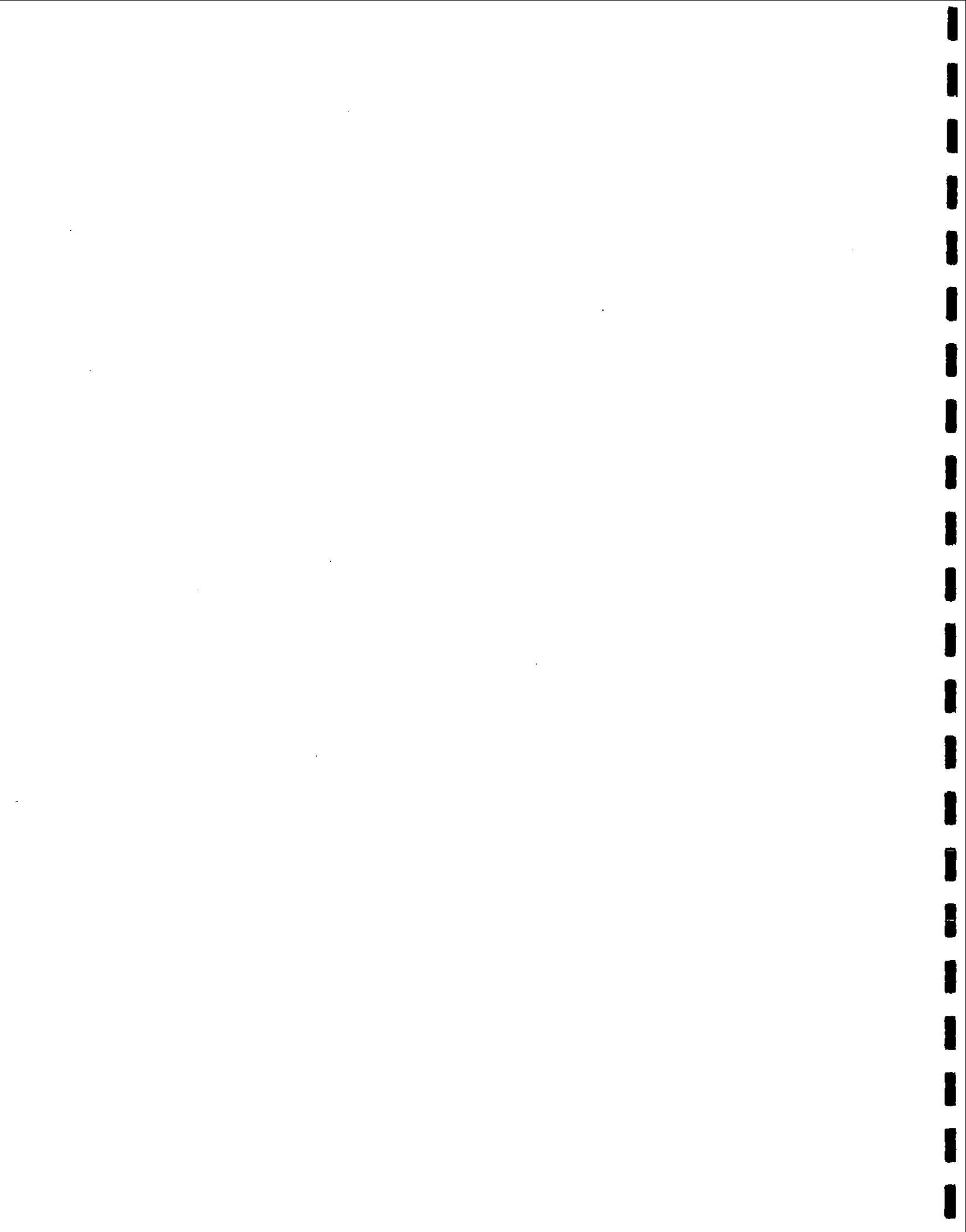
All students are expected to pay the tuition assessed on or before the payment date for each semester as established by the University. All Residence Questionnaires and forms verifying non-resident exemption status must be submitted to the Office of Admission and Evaluation prior to the official census date of the term for which the change is sought. To prevent any delays in registration, students are encouraged to submit all forms at least two weeks prior to registration. Residence Questionnaires are available from the Office of Admission and Evaluation. Teaching Assistantship and Research Assistantship verifications originate in the academic departments and must be submitted through the Graduate School. Scholarship verifications are submitted from the Office of Undergraduate Recruitment and Scholarships. Military duty status verifications must be obtained from the military member's commanding or personnel officer. Faculty letters of employment must be obtained from the Personnel Office. Tuition exemption forms must be submitted each semester.

APPLICATION FOR RECLASSIFICATION. Students classified as non-resident students shall be considered to retain that status until they make written application for reclassification in the form of the Residence Questionnaire furnished by the Office of Admission and Evaluation and are officially reclassified in writing as residents of Texas by that office.

RECLASSIFICATION AS A NON-RESIDENT. Persons who have been classified as residents of Texas shall be reclassified as non-resident students whenever they shall report, or there is found to exist, circumstances indicating a change in legal residence to another state. If students who have been classified as residents of Texas are found to have been erroneously classified, those students shall be reclassified as non-residents and will be required to pay the difference between the resident and non-resident fees for those semesters in which they were so erroneously classified. In addition, the students shall be required to pay back all monies borrowed from the Hinson-Hazlewood College Student Loan Program.

RECLASSIFICATION AS A RESIDENT. If students have been erroneously classified as non-resident students and subsequently prove to the satisfaction of the Director of Admission and Evaluation that they should have been classified as resident students, they will be reclassified as residents of Texas and may be entitled to a refund of the difference between the resident and non-resident fees for the semesters in which they were so erroneously classified. Normally the refunds must be requested and substantiated during the current term.

STUDENT COMPLIANCE WITH INSTITUTIONAL RULES AND REGULATIONS. If students have obtained residence classification by virtue of deliberate concealment of facts or misrepresentation of fact, they may be subject to appropriate disciplinary action, in accordance with the rules and regulations of The University of Texas at El Paso.





Facilities and Services
Student Life

FACILITIES, SERVICES & STUDENT LIFE

Facilities and Services

The University of Texas at El Paso provides facilities and services in support of instruction and research, in support of cultural activities, and in support of the community at large.

The Library provides faculty, students, and community users with research and recreational materials, information services, and facilities for studying and meetings. As of August 31, 1988, Library holdings included 633,685 books; 112,623 bound volumes of periodicals; 146,183 documents; 82,271 maps; 866,227 microforms; and over 2,000 audiovisual titles. The Reference collection includes indexes on CD-ROM and librarians offer on-line database searching. Instruction in library use is available for both groups and individuals. Guides to the collection and shelving arrangements are available throughout the building.

The six-level central Library opened in October of 1984. In keeping with campus tradition, the building is Bhutanese in architectural style, and its 275,000 square feet will seat 2,305 users and can house 1.2 million volumes. Seventy-four individual study rooms provide private space for faculty engaged in library-related research, and a graduate student working on a thesis may reserve one of the 192 carrels available. Twenty-nine rooms of various sizes provide accommodations for meetings and group study. The building is designed to meet the needs of the handicapped, and specialized equipment, assistance, and materials are available to aid studying and projects.

The University Library, in addition to maintaining efforts to develop collections which strongly support the programs of the University, is an active participant in cooperative networks. Memberships in AMIGOS Bibliographic Network and OCLC provide additional materials and services through the sharing of bibliographic information and library resources. These memberships also facilitate inter-library loan transactions with libraries throughout the United States for the borrowing of items not in the collection. The Interlibrary Loan Department has acquired a telefaxsimile machine to speed the acquisition of articles and other research information.

The Library is fortunate to have several outstanding special collections of books and other materials, housed on the sixth floor. The Southwest Collection, established with materials donated by Professor John H. McNeely, contains materials on Texas, New Mexico, Arizona, and Mexico. The J. Carl Hertzog Collection of materials on print, books, and book design is located in the room named for Dr. Hertzog. Other special collections include the Judaica Collection, the S.L.A. Marshall Military History Collection, Chicano Studies, rare books, and archival and other manuscript collections.

The NOTIS integrated library computer system was installed in 1986. The on-line catalog, LUIS (Library User Information Service), became available in 1988 and allows users to search for materials by author, title, and subject. Computer access to the Library's collections has contributed to greater use of materials. In addition to the terminals in the Library, users have dial-in capability from personal computers on campus and in homes.

The Library staff includes 23 professional positions, 46 classified positions and approximately 100 student assistants. The building is open 98 hours per week, with some variations during holidays and intermissions. The fifth floor has been designated as a quiet study area. Departmental hours and schedule changes are posted for patron convenience.

The Computer Center was established in 1974 and functions as a service agency for all academic and administrative units of the University. The Center provides on-line support for the administrative and student records applications, batch computing for administrative and academic applications, interactive computing support, administrative programming support, network access through BITNET, access to the U.T. System Cray XMP/24 and limited maintenance support. The Computer Center also operates on behalf of the Library the library automation system.

The Center operates three processors in a loosely coupled network. The batch computing and on-line administrative applications are supported through MVS/JES2 on an IBM 4381-p2 with 15 gigabytes of on-line storage. Interactive computing and access to BITNET are

handled by the MUSIC/SP system on an IBM 4341-m2 with 1.5 gigabytes of on-line storage. The library automation is handled by the NOTIS software system on an IBM 4361-m5. There are about 100 IBM-3270 type terminals of which 55 are available for student and faculty use. In addition to the IBM-3270 terminals, any ASCII terminal or personal computer can be attached through the data PBX and protocol converters. Dial-up access is also available to students and faculty. Access to the U.T. System CHPC Cray XMP-24 is provided either through BITNET or through the network interface processor at UTEP.

Software installed for academic support includes various plotting packages; statistical software including SAS, SPSS, BMDP and statpak; script text processing; mathematical software; and various language compilers.

The Computer Center is housed in three buildings. The administrative offices and programming support group are in the ground floor of Benedict Hall. Computer operations, systems programming, production control, data entry and academic users services are in the North end of Bell Hall. There is a satellite terminal area with a remote printer in Biol.-113.

The Institute for Manufacturing and Materials Management has as its mission the joining of the resources of the University with those of the community to foster socioeconomic development within the U.S./Mexico Border Region. This mission is addressed by the Institute's efforts to initiate, coordinate and facilitate University outreach programs. These programs include providing technical assistance to businesses, data base management for the border and research into border economic development issues. Projects in these areas have involved faculty and students in Mexico's maquiladora industry including its economic impacts, materials sourcing practices and productivities; in border infrastructure issues such as ports of entry, communications, water and waste treatment, U.S./Mexican Customs operations and transportation; in bi-national economic development programs and seminars; and in technology transfer among defense, maquiladora and other indigenous industries. Finally, the Institute has cooperated with government and business leaders to develop an economic plan which focuses on capturing regional competitive advantage within the global economy. Through projects like these, the University's goal of excellence in research, service and teaching has been enhanced.

The Bureau of Business and Economic Research was established on the campus in September 1963. The Bureau has the primary objective of supporting economic and industrial development of the El Paso and West Texas area, and the northern area of the State of Chihuahua, Mexico. The Bureau conducts extensive research and maintains a comprehensive data bank on the economic and industrial growth of the areas.

The Bureau is a State of Texas Census Data Affiliate. As such, it maintains census data on the Upper Rio Grande area of Texas.

The Bureau publishes *The El Paso Economic Review* and the *Southwest Journal of Business and Economics*. The *Review* is published bi-monthly, and contains articles of interest on the local area economy, as well as business barometers. The *Journal* is published quarterly and contains articles of interest to the academic and business community throughout the United States. The *Journal* is a refereed publication. The Bureau publishes several special reports each year based on research conducted by the staff of the Bureau or the faculty of the College of Business Administration.

Texas Western Press is an internationally known book publisher and university press. It issues hardback books as well as paperbacks (including the Southwestern Studies monographs) which are sold nationally. TW Press specializes in the history and culture of the Southwest, although some titles are broader in scope. Manuscripts may be submitted to the director for consideration by the Editorial Board. Offices are located at 1825 Hawthorne, in the News Service building, phone 747-5688.

Four special facilities offer support for research in engineering and science. The Schellenger Research Laboratories (SRL), created in 1953 under the will of Mrs. Emma L. Schellenger, as a memorial to her husband, Newton C. Schellenger, were founded to promote and encourage research in electricity.

Although administered by the Department of Electrical Engineering, the programs of SRL are interdisciplinary in nature and regularly

involve faculty and students throughout the University. Funds from the trust are also used to support the Schellenger Research Professorship in Electrical Engineering.

SRL has specialized in atmospheric and acoustic research and instrumentation, and has investigated virtually every parameter of the atmosphere and has developed instruments for measuring and testing these parameters. SRL has also conducted studies in the life sciences including cardiac, dental, and orthopedic research. Recent activities include research in applications of artificial intelligence, computer vision and optical fiber communications.

The Laboratory for Environmental Biology was established as the major research and teaching support unit for the field-oriented biological sciences. The Resource Collections division is a major regional center for collections of plants, modern vertebrates, modern mollusks, and late Cenozoic fossil vertebrates and mollusks of the Southwest and Mexico. These collections, initiated in 1965, form an internationally recognized base for teaching and research in systematics, ecology, biogeography, and paleontology, with some 80,000 curated specimens. Other laboratory facilities include specialized equipment and collections of research literature in selected fields. The university is a member of the Association of Systematics Collections and the mammal collection meets the criteria of the American Society of Mammalogists.

The J. W. Miller Memorial Geophysical Laboratory is a major research arm of the Department of Geological Sciences. This facility includes computer interfaced laboratory apparatus and a well-equipped computer graphics laboratory.

The John W. Kidd Memorial Seismic Observatory is in continuous year-round operation and is part of the World-Wide Standardized Seismograph Network. The station is equipped with seismographs and recorders for study of both short and long-period seismic waves. The records are used for research on earthquakes and related phenomena and are made available to the scientific community through an international data center.

The location of UT El Paso on the border between the United States and Mexico provides a unique opportunity for research and outreach across cultures. The **Cross-Cultural Southwest Ethnic Study Center** was established at the UT El Paso campus in September 1971 under a Spencer Foundation Grant. The Center is devoted to investigating Southwest ethnic group relationships and conflicts. It aims at helping to prepare courses and self-contained units on the Southwest ethnic heritage for inclusion and integration in the regional liberal arts curricula. The Center is also coordinating activities aimed at creating a cultural data bank for illuminating various aspects of interethnic relationships.

The NEH Border Studies Program courses, developed during 1974-78, provide an informal area of concentration for students desiring a deeper understanding of cultural tradition and processes in the Southwestern United States and Northern Mexico. Eight courses developed and taught within the departments of Art, History, Music, Philosophy, Political Science, English, and Languages and Linguistics, give special attention to value orientations, the dynamics and consequences of cultures in contact, and the effect of the international boundary on regional life. For additional information concerning these and other courses related to the Borderlands, consult the appropriate departments or the Cross Cultural Southwest Ethnic Study Center.

The Center's Research Associates conducting projects in Humanities and Social Sciences represent a broad interdepartmental spectrum from various departments of the Colleges of Liberal Arts and Education, and from the Center for Inter-American Studies at UT El Paso. They utilize a variety of research techniques to collect, analyze, and interpret basic cultural data on ethnic groups.

The Center's projects have included: (1) research on socio-linguistics and communication problems funded by the Gulf Oil Foundation, (2) a four-year project funded by the National Endowment for the Humanities to develop courses for the Humanities Border Studies Program, (3) the Inter-Institutional Bicentennial Project of the El Paso Community College/UT El Paso, funded by the Texas Colleges Bicentennial Program, Inc., and (4) Bilingual/Bicultural Education Symposia project funded by the Excellence Fund.

Recently the Center has undertaken a project on international com-

parative ethnic studies, as well as regional and national attitudes toward Hispanics and Hispanic immigration.

The Center for Inter-American and Border Studies promotes teaching, research and outreach programs that are designed to further the understanding of Latin America and its importance to the United States. Its particular interest is in Mexico and the nature of the special cultural, institutional, social, environmental, commercial and economic relationships that apply to the Mexico-U.S. border region.

The Center coordinates the BA degree major in Latin American Studies and the minors in Latin American Studies and Border Studies. These academic programs are described elsewhere in this catalog.

The Center promotes and supports research by faculty and graduate students and sponsors the publication of scholarly material in its areas of special interest. Many academicians, scholars, artists and public personalities from Latin America are brought to the University each year by the Center to present lectures to students, faculty and the community at large.

The Center represents the University in a number of inter-institutional organizations that deal with inter-American and border issues. It also plays a prominent role in the special relationship between UT El Paso and Mexican educational institutions.

The Inter-American Sciences and Humanities Program (PROGRAMA INTER-AMERICANO DE CIENCIAS Y HUMANIDADES) is an initial entry program for students from Spanish-speaking countries who wish to attend an American university but whose English is less than adequate to do so. The I-ASHP coordinates many first level courses taught in Spanish which the student may take while receiving instruction designed to rapidly enhance English language skills. The Program provides academic advising for all students entering the University under its auspices. It is administered as part of the Department of Languages and Linguistics and coordinates its efforts closely with the English Language Institute. For further information contact The Inter-American Science and Humanities Program, UT El Paso, El Paso, Texas 79968.

The University of Texas at El Paso recognizes its responsibility to serve the educational and cultural needs of the community of which it is a part. The University provides special facilities to enhance the cultural life of the El Paso area.

The Fox Fine Arts Center and Magoffin Auditorium are the University's two primary facilities for the visual and performing arts. Plays are produced in the University Playhouse and the flexible Studio Theatre and include selections from theatre classics, contemporary plays, children's theatre, bilingual theatre, experimental theatre, and original playscripts. In addition, the Fox Fine Arts Center has over 30 art studios, a lecture room, and two art galleries making it one of the finest facilities in the Southwest. Music activities include over 100 recitals and concerts per year, most of which are free to the public. The Fox Fine Arts Center is the home of the University Symphony, the University Wind Ensemble, the Percussion Ensemble, the Jazz Lab Band, the University Jazz Singers, the Paso del Norte Woodwind Quintet, and the Fox Trio. The University Opera and the Ballet of the Americas perform in Magoffin Auditorium.

The El Paso Centennial Museum, the University Museum, opened in 1936 with funds allocated by the Commission for the Texas Centennial Celebration. It is devoted to the preservation, documentation, and exhibition of objects and ideas pertaining to the cultural and natural history of the El Paso del Norte region. Noteworthy collections include pottery, stone tools and shell jewelry from the prehistoric Mexican ruins of Casas Grandes, Chihuahua; mineral and rock specimens from regional and extraregional mines and localities; dinosaur bones from the Texas Big Bend area; and fossil elephant and other remains from local Ice Age deposits.

Traveling exhibits and additional educational programs, such as lectures and tours, are included as part of the museum experiences for visitors. The Museum is open to the public from 10 a.m. to 4:30 p.m. Tuesdays through Fridays, and Saturdays from 10 a.m. to 4:30 p.m., except on National holidays.

Station KTEP-FM is owned and operated by the University. KTEP broadcasts in stereo with 100,000 watts of power providing daily service to the El Paso metropolitan area. Qualified advanced students may serve operator shifts on KTEP.

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The educational needs of the community are served by the Division of Adult and Continuing Education, the English Language Institute, and the Center for Professional Development. The **Division of Adult and Continuing Education** has a two-fold function:

1. Presents courses or programs to answer community needs for education or training outside the regular channels of instruction. Although college credit is not granted for such work except in limited selected courses, certificates from the University are presented to those who complete the courses. In addition, if the course meets specified requirements, each person who completes it is awarded Continuing Education Unit credit.
2. Coordinates and administers conferences, seminars, symposia, special educational programs, etc., initiated by academic units or individual faculty and designated primarily for non-university personnel and agencies. Activities in this category may result in the award of academic credit or Continuing Education Units, as appropriate, if the activity meets specified requirements.

The English Language Institute, a part of the Division of Continuing Education at The University of Texas at El Paso, is specifically designed to help learners gain functional command of English in listening, speaking, reading, and writing. The Program operates to meet a number of student goals: (1) to pass the TOEFL and to have a successful academic experience in an American institution of higher learning; (2) to use English in business and other vocational pursuits; and (3) to satisfy language and cultural needs for social interaction with English speakers.

Courses during the fall and spring meet on an intensive seven and one-half week schedule to help students learn English in the shortest possible time. The summer session meets on one seven and one-half week schedule in order to make the best use of students' available time.

Classes meet four hours a day, four days a week, throughout all terms. Listening comprehension, reading/writing, grammar, conversation, and study of American culture patterns will be stressed.

Students completing each term receive a certificate of completion. In addition, the TOEFL examination is given several times per year on campus for those students needing it.

Admission to the Institute is reserved for mature, serious students who can devote all of their time to learning English. Applicants must have completed secondary school and be at least seventeen years of age.

Admission to the English Language Institute does not imply or constitute admission to the regular academic program of The University of Texas at El Paso.

Students successfully completing their English study who wish to enter the academic program of the University will be assisted in making application.

The Center for Professional Development offers intensive professional continuing education for executives, professionals, and their staff members through a variety of workshops, seminars, conferences, and short courses. These are designed to provide updating and new skills development and may be directed toward individual growth, organizational effectiveness, or licensing/certification needs.

Sessions vary in length and are taught by instructors selected for their expertise in subject area, related work experience, and demonstrated ability to have successfully conducted similar sessions. They may be college or university faculty members, practitioners from the community, or nationally and internationally recognized talent.

Many of the Center's programs are available in Spanish, and most may be customized for a particular group. In-house presentations can be designed to meet special needs or situations, and may be held at the Center or on-site.

Located in the College of Business Administration, the Center is committed to life long learning. It serves to link the business and professional communities to the educational resources needed to grow or keep current and updated.

Student Life

Since the life of a university student involves more than attending classes and studying in the library, UT El Paso provides a wide variety

of facilities and services in support of student needs. This section of the catalog is designed to direct students around the campus in search of the support they may need.

Many of the programs targeted for students in general and for particular groups of students are located in **The Union**. The Union itself is a service-oriented organization that provides, coordinates and houses beneficial co-curricular activities, student and faculty meetings, seminars and conferences; and through the Student Programs Office promotes recreational, cultural and educational development. The UT El Paso Union, as both a building and a concept, supports and augments the educational mission of the University by projecting classroom learning into the sphere of human experience.

The physical plant of the Union consists of the West and East wing; totaling 200,000 sq. ft.

The University Bookstore is located on the First Floor in the Union East Wing. At the Bookstore students may purchase textbooks, classroom supplies, calculators, sundries, clothing, tapes, and albums. Other services include typewriter rentals, special order book service, photo processing, VHS movie video tape and VCR rentals.

The Union Dining Service on the 2nd Floor, East Union, offers convenient dining facilities, varied menu selection and an environment conducive to human interaction. The UDS also operates the Faculty and Professional Staff dining room and the Sundries Center, as well as catering meetings, receptions and banquets, on and off campus.

The East wing also houses The University Post Office, The Union Theater, the Music Listening Room and The Union Exhibition Gallery.

The West wing houses the majority of the Student Affairs Offices and the Union Recreation Center. The Rec Center offers UT El Paso students a chance to relax by playing pool or foosball, spending time on a favorite video game or just enjoying a snack from the various vending machines. Also located on the West wing is the Union Ballroom where all the Union Dinner Theatre productions are presented.

The third floor, Union East, houses the Union and SPO Administrative Offices, The Union Dinner Theatre Office and the student organizations offices. Also found on the third floor are a majority of fifteen meeting rooms, including the 5,000 sq. ft. multipurpose Conference Center. For information on the Union's departments, programs and services, call the Union Director's Office at 747-5711.

The Office of Student Affairs is under the direction of the Dean of Students, and supervises many services available to students. Its primary purposes, however, are to insure that students' rights are protected and to help students with problems or concerns. Students are encouraged to come to the Student Affairs Office whenever they are in need of assistance of any kind. This office is also responsible for disabled student services, cheerleaders, student discipline, registered student organizations, student health insurance, Men and Women of Mines, Who's Who Among Students in American Colleges and Universities, and liaison with the Student Association. The Office is located in The Union 102 West.

Counseling, Testing, and Psychological Services (CTPS) provides a variety of programs and individual services to meet the needs of students, staff, and faculty. The core of these services is the individual career and time-limited personal counseling provided to students. A second major service involves small groups, seminars, and classes in areas of concern to students, staff, and faculty ranging from career choice to stress management to coping with angry individuals. CTPS psychologists also consult with faculty and staff regarding student problems and the needs of individual students.

CTPS also provides a Career Choice Center (CCC), a computer assisted career counseling program, and several self-help filmstrips and video and audio tapes. The office also serves as a national test administration center for graduate and undergraduate admission tests (GRE, SAT, LSAT, GMAT, MCAT, ACT, DAT, PPST) and numerous professional certification tests (NBRC, CEST, NTE, AART, etc.). Finally, CTPS serves as the campus testing center for almost every placement and credit by examination test (mathematics, English, history, business, psychology, etc.) and as a GED testing center.

University Career Service provides assistance to students in finding permanent employment after graduation and part-time employment while enrolled. The office provides career counseling and advises students on resume preparation, interviewing skills and future job

opportunities. The office arranges interviews with agencies, organizations, or schools and counsels students on the best approach to identify and contact prospective employers. The office provides forms, applications and literature necessary for interviews.

For permanent employment, companies from all over the United States schedule interviews during the months of *October, November, December, February, March and April*. The office works with hundreds of applicants and thousands of job opportunities each year. This service can save time, minimize effort and in the final analysis, help plan for the student's future. Seniors and alumni can participate in on-campus interviewing for the purpose of finding permanent employment in their chosen field. Seniors interested in permanent employment after graduation should register at least a full year prior to receiving their degree.

Part-time job opportunities are posted on the bulletin board outside the office. After filling out the proper application card, students are referred to the board to check on jobs and obtain a referral from the secretary. The requirements for consideration for part-time campus employment are met with a new application each September along with proof of enrollment.

The University has a Cooperative Education Program (CO-OP) which has been established with industries and government agencies. Students who are in the program will usually attend school a semester and be on a work assignment one semester, alternating the school and work phase until graduation. Summers are considered a semester for CO-OP purposes. A parallel program, school part of a day and work part of the day, is available. The office is located in The Union 103 West.

Study Skills and Tutorial Services is designed to help students improve general competency and performance in their academic subjects, and does so through a variety of programs that are free to students enrolled at the University. The office is located in 105 West Union.

STUDY SKILLS I: Eight weeks, non-credit college study skills class, followed by six weekly lab sessions in the Learning Assistance Lab, that offers instruction in taking lecture notes, studying textbooks, preparing for and taking exams, using the library, and otherwise developing skills needed for academic success in college. Students may enroll for these free classes during registration.

STUDY SKILLS II: Eight weeks, non-credit class that offers instruction in the skills and strategies necessary to complete college reading assignments. Instruction is given in study reading, critical reading, rapid reading, and vocabulary improvement. Students may enroll for these free classes during registration.

NON-CREDIT CLASSES: Non-credit, short-term classes, workshops, subject reviews, and study groups are offered in study skills, math, science, writing and English, modern languages, business and accounting, computer literacy and word processing, nursing, and standardized test-taking techniques for graduate and professional exams. These non-credit classes are listed each semester in the Schedule of Classes. Others can be arranged upon request. Students may sign up for these in The Union 108 West or at registration.

TUTORING PROGRAM: Free tutoring is available for any enrolled student. The tutors are students who are successful in the subjects they tutor and who have also received special training in tutoring techniques. "Walk-in" tutoring (no appointment needed) is available in mathematics, engineering, chemistry, physics and other sciences, writing, liberal arts, accounting, business and nursing. Tutoring by appointment is available in modern languages.

MICROCOMPUTER LEARNING LAB: Students may sign up for free time on IBM PC and Apple IIE microcomputers to type papers or do programming. Free classes in computer literacy and word processing are also available in the lab.

LEARNING ASSISTANCE LAB: Individual assistance is available for study skills, test preparation and other learning problems. Study skills workshops are also available in the Learning Assistance Lab.

Students' Attorney provides legal representation and counsel in many areas and these services are available free of charge to UT El Paso students. The office is staffed by a licensed Texas attorney and is located in The Union 206 West.

International Student Services serves as a source of information for prospective international students and U.S. students consider

ing work, study or travel abroad. Personnel are available to provide the international student with financial, social and personal advice and assistance whenever it is needed. *United States immigration regulations and procedures pertaining to international students are explained and assistance is rendered to insure the student's compliance.* In addition, the office assists in obtaining certifications for foreign governments, counsels students concerning the pattern of American life, refers students for academic counseling, administers emergency loans and sponsors a Host Family Program. At the beginning of each semester, an orientation is given which is intended to meet the special needs of new international students.

The office is located in The Union 301 West, telephone (915) 747-5664.

Disabled Student Services office makes every attempt to insure that the disabled members of the student body have a full and equal opportunity to complete their education. Assistance with registration, classroom changes and serving as liaison with professors and other service providers are some of the ways disabled students are helped.

The Women's Center opened on September 1, 1984, to serve as a one-stop center for women. The Center is designed to provide resources specifically focused on the changing needs of women today as they enter or return to the University. The UWC serves as a clearing-house of information on services, departments, and community agencies in such areas as admissions, academic advising, child care, legal services, health services, personal or career counseling, financial aid, etc.

The Center sponsors orientations, referrals, workshops, films, lectures and other programs related to women. Also available is the use of a book and audio library with success oriented materials. The services are available to all currently enrolled students or individuals contemplating enrolling at the University.

The Union is also the hub of student government and of extracurricular activities. **The Student Association** is the official voice of the student body through which student opinion may be expressed. Students participate in the decision-making process of the University directly through the elected officers of the Student Association or through students appointed by the Student Association to serve as members of policy-making University committees. The Student Association also acts as the representative of the students in several local, state, and national areas of interest. The range of activities of the Student Association both on and off campus is continually expanding as students take more of an interest in the political process that affects their everyday lives.

In the spring of each year the election of Student Association officers and senators is held. Qualifications and duties for these offices are listed in the Student Association Constitution. Senators are elected at large. Election requirements and regulations are set down by an election commission appointed by the senate and copies may be obtained in the Student Association Office prior to election. Each member of the Student Association has the privilege of voting in the elections and should take advantage of the opportunity to express his or her views.

The basic framework of the Student Association resembles the patterns established by the national government. Officially, there are 3 branches of government in the Student Association, the Executive, Legislative, and the Judicial.

The executive branch consists of the President, Vice President of Internal Affairs, and the Executive Assistant to the President. The President of the Student Association is the chief executive of the Student Association. The Internal Affairs Vice President presides over the Senate meetings, which are open to all students. The External Affairs Vice President is the liaison with areas or groups outside the University.

The legislative branch, the Student Senate, appropriates funds to student organizations and for student government projects, works for changes in campus policies and provides a means of organized student expression. The senate meets every week in the senate chambers located in 304 East Union.

The Student Supreme Court, consisting of seven justices, is the highest student court in the Judicial branch of the student government. The Court has original jurisdiction over cases involving the Student Association Constitution and the Legislative branch. In addition to having appellate jurisdiction over all courts of the student government, the Supreme Court may hear cases referred to it by the Office

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of Student Affairs. The Court is also one of the most viable areas of student participation in determining and influencing future policies of concern to students. The Student Traffic Court convenes regularly each week and hears cases involving student traffic violations which have been appealed.

Registered Student Organizations — The University encourages and supports the efforts of students who have common goals and interests to meet together and form organizations.

Procedures for organizing a group and becoming a registered student organization are available in the Office of Student Affairs. Students are encouraged to come by to discuss their interests and concerns about student organizations.

At the beginning of each long semester, each organization must submit an up-to-date and correct information sheet to the Office of Student Affairs. Organizations not returning the information forms will be considered inactive. Requests for reactivation must be submitted before an organization can use University facilities. If an organization is inactive for one full semester, it must apply for reinstatement before the Student Organizations and Activities Committee. Lists of registered student organizations are available each semester at the Office of Student Affairs.

There are almost one hundred registered organizations at the present time, including twenty-eight professional academic groups, twenty honoraries and eleven social fraternities and sororities. In addition, there are a number of service, religious and political groups.

The hub of student activity is centered in The Union with extensive event planning done by the **Student Programs Office**. The volunteer committee members, who select, plan and implement these programs, develop personal and professional skills in a unique atmosphere which promotes this learning experience through entertainment programming. Activities offered by SPO include the University film series, fine arts exhibits, comedy and variety acts, performing arts presentations, local, national and international speakers, and traditional campus-wide programs such as Homecoming. These programs are generally offered free or for a minimal charge to students, staff and faculty of the University. Program selections are made by committees composed of students, faculty and staff. There are five standing committees: Arts, Films, Issues and Ideas (previously called the Lyceum Committee), Entertainment, and Special Programs and Activities.

Students, faculty and staff interested in serving on any of these committees can apply at the Student Programs Office, Room 302, Union East.

Another program that is part of the Student Programs Office is **Student Leadership Development**, which is designed to develop leadership qualities of UT El Paso students. The program uses a variety of workshops, retreats and seminars to enhance essential leadership skills. The leadership program has a number of approaches to learning, each with special aims and procedures. A resource center is also available for students to use for self-paced learning. The program utilizes the expertise of campus leaders — student, faculty and staff — as well as local, state and national leaders. The Leadership Development Program is located in the Student Programs Office, Room 302, Union East.

Student Publications provides administrative support and professional guidance for *The Prospector*, UT El Paso's student newspaper; *Rio Grande Review*, a literary magazine; and other publications sanctioned by the University.

To insure free, responsible expression, the University delegates publishing responsibilities and authority to a democratically selected Student Publications Board composed of faculty and students. The Board in turn delegates to student editors and staff members sufficient autonomy for student publications to maintain their integrity of purpose as vehicles for free inquiry and free expression in an academic community. Student staff members are appointed by the Student Publications Board.

It is not necessary to be a journalism major to become a staff member of student publications; a student need only discuss with the editor his or her interest in reporting, editing, photography, advertising, etc., and request to work on a publication. Students can receive credit by enrolling in journalism courses offered by the Department of Communication which include writing laboratories and supervision by a journalism instructor.

State-of-the-art mini-disk terminals, a phototypesetter and a camera capable of shooting half-tones and page negatives provide students with the opportunity to gain the experience needed to work on today's modern newspapers.

Just a few blocks south of The Union, on Hawthorne Street, is the **Academic Services Building**, where students can find additional support. The **Office of Admission and Evaluation** evaluates applications for undergraduate admission to the University as described in the chapter "Admission and Financial Aid." The **Office of the Bursar** has cashiers to process student payment and financial transactions.

The **Office of the Registrar** is responsible for the maintenance of student records and all registration transactions. This office also processes enrollment certifications, transcript requests, graduation applications and diplomas, and student identification cards as well as publishing the Schedule of Classes and the University Catalog.

Veterans Affairs is a part of the Registrar's office and serves the needs of students who are veterans or dependents of veterans. The office is responsible for creating and maintaining records which are used in support of certification of a student's status to the Veterans Administration.

Applicants for admission who are entitled to receive veterans benefits during University enrollment are encouraged to contact the Veterans Affairs office as early as possible in the process, to obtain information on current regulations and to initiate appropriate paperwork.

The **Office of Undergraduate Recruitment and Scholarships** assists prospective students with enrollment at the University by informing them of the admission procedures, financial aid and scholarship resources, and by providing general University information. The University's Scholarship Program is also administered by the office. The office represents the University at high schools, community colleges and at public functions to encourage prospective students to enroll at UT El Paso.

The **Academic Advising Center** assists students in making decisions about their academic careers. The faculty members in the Center are fully informed about the various academic programs and student services available on campus. One major role of the center is to provide academic advice to students who have not yet chosen majors, to students who are considering changing majors and to students in the Provisional Program. Faculty in the Center assist such students with course selection, with choices of majors and minors, and with the resolution of any academic problems that might arise. Students with difficulties that cannot be addressed by an academic advisor are referred to the office on campus that can help with the problem. The Center serves as a source of information for all students, bringing together experts on campus and students who can make use of the experts' assistance, and also administers the New Student Orientation Program.

By heading toward the southwest edge of the campus, students can find two more facilities to meet specific needs: The Student Health Center on Wiggins Drive and The Housing Office located in Kelly Hall just off Sunbowl Drive.

The **Student Health Center** offers to all students a wide range of health care services and activities. The staff includes a full-time physician, nurse practitioner, registered nurses, and half-time medical technologist and pharmacist. Most services are provided without charge, but there are minimal fees for laboratory tests and pharmacy services. Referrals outside the Health Center, including X-ray referrals, are at the student's own expense.

Student insurance is available and is highly recommended for every student not already covered by some hospitalization policy. Information may be obtained by calling ECA Associates at (915) 533-9891.

Services include health promotion with emphasis on physical fitness, smoking cessation, advice on alcohol and drug abuse and cholesterol-nutrition monitoring.

Preventive health care includes immunizations and screening for tuberculosis. Health education is always available to students who seek care at the Health Center.

Major emergencies are referred to adjacent hospitals, and University police are always available to administer first aid. Minor illness, injury or health concerns are treated by the professional staff.

The facility is located at 2001 Wiggins, directly across from the University Library and hours of service are Monday through Friday, 7 a.m. to 5 p.m.

Student On-Campus Housing is provided in the University's high-rise co-educational residence halls. Special living environments including 24-hour quiet floors, an Honors Wing and graduate floors are offered. Suites and private rooms can be acquired with early application. All rooms are air-conditioned and equipped with a telephone, a sink, a desk, bed, and overhead storage. Laundry rooms, a fitness room, a sundeck, a music room, TV lounges, and storage rooms are available in Kelly Hall. Kelly Hall is conveniently located on campus adjacent to the Library, the Student Health Center, the Dining Hall, the swimming pool, tennis courts, basketball courts, and many other recreational facilities.

The student family apartment complex consists of sixty two-bedroom units. All apartments are unfurnished except for a stove and refrigerator. Reservations are handled on a first-come first-served basis.

Applications for admission to UT El Paso and application for the residence halls or the student family apartments are separate transactions. A housing application will be mailed upon request when a student applies for admission to the University, or an application may be obtained from:

Housing Business Office
Kelly Hall #105
UT El Paso
El Paso, TX 79968
(915) 747-5352

Finally, by heading up the hill from The Union and past the Education Building, students can reach Memorial Gymnasium, the home of Intramurals and Recreational Services, and the facilities serving the Department of Intercollegiate Athletics.

Intramurals and Recreational Services seeks to provide the opportunity for each member of the University community to voluntarily participate in a wide variety of sports and recreational activities.

The Organized Intramural Sports Program includes approximately forty activities for men and women. There are team sports such as flag football, volleyball and basketball, as well as individual and dual sports such as tennis singles, doubles and mixed doubles; track; racquetball; and golf. Many activities include "Co-rec" leagues for teams comprised of equal numbers of men and women. Events include

volleyball, basketball, softball and many others. Innovative sports such as pickleball, over-the-line, and sand volleyball are also offered. Intramural schedules are printed each semester.

Recreational Sports Clubs are interest-group clubs that are open to all students. Many clubs compete against other schools, while others exist for instruction and recreation. Current clubs are: badminton, fencing, karate, racquetball, soccer, squash, table tennis, and volleyball.

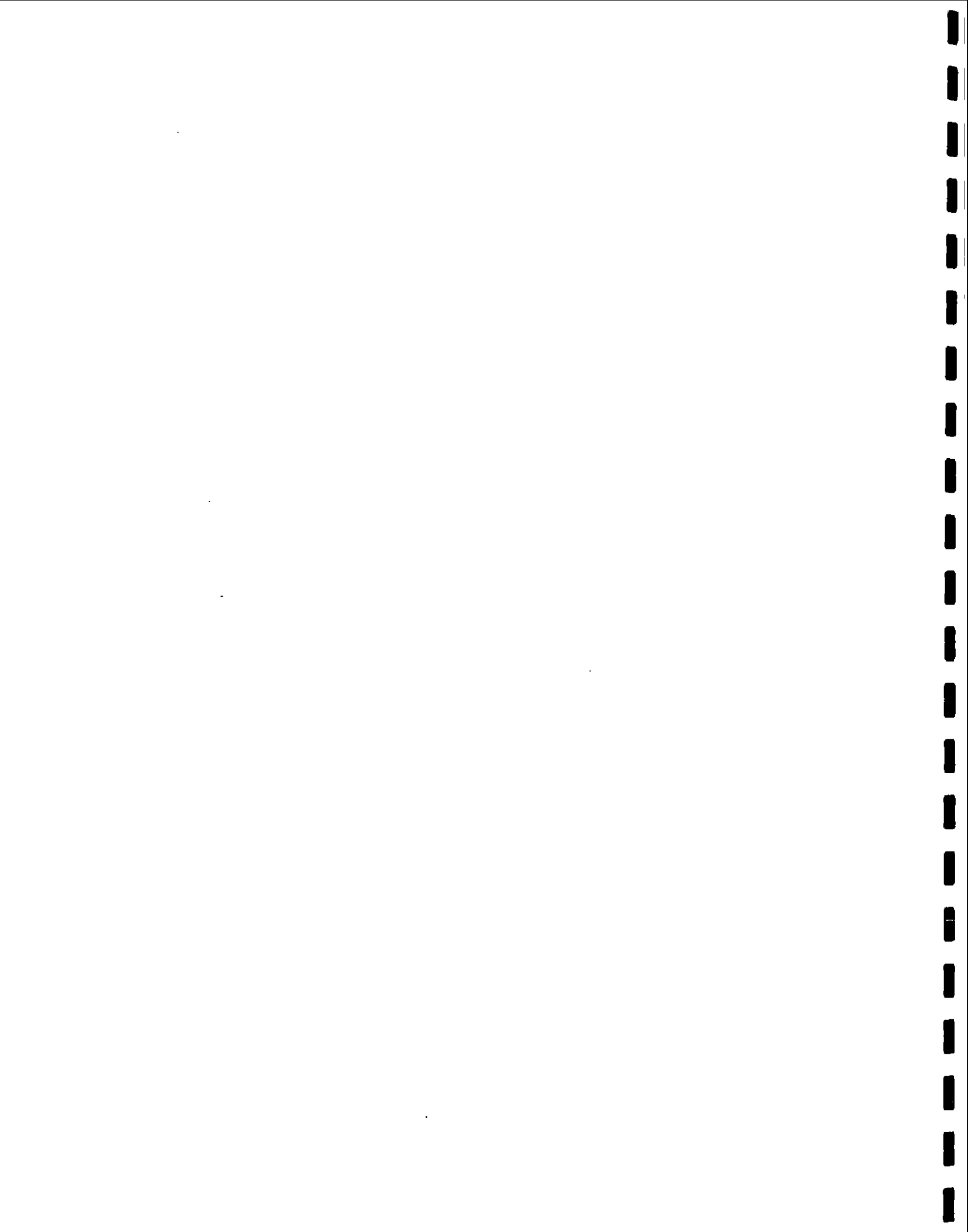
Drop-in Recreation involves leisure time use of recreational facilities. There are basketball, volleyball, badminton, indoor racquetball courts, outdoor racquetball and tennis courts, and grass fields available for use. Sports equipment is also available for checkout. The eight indoor racquetball courts are available for reservations Monday through Friday.

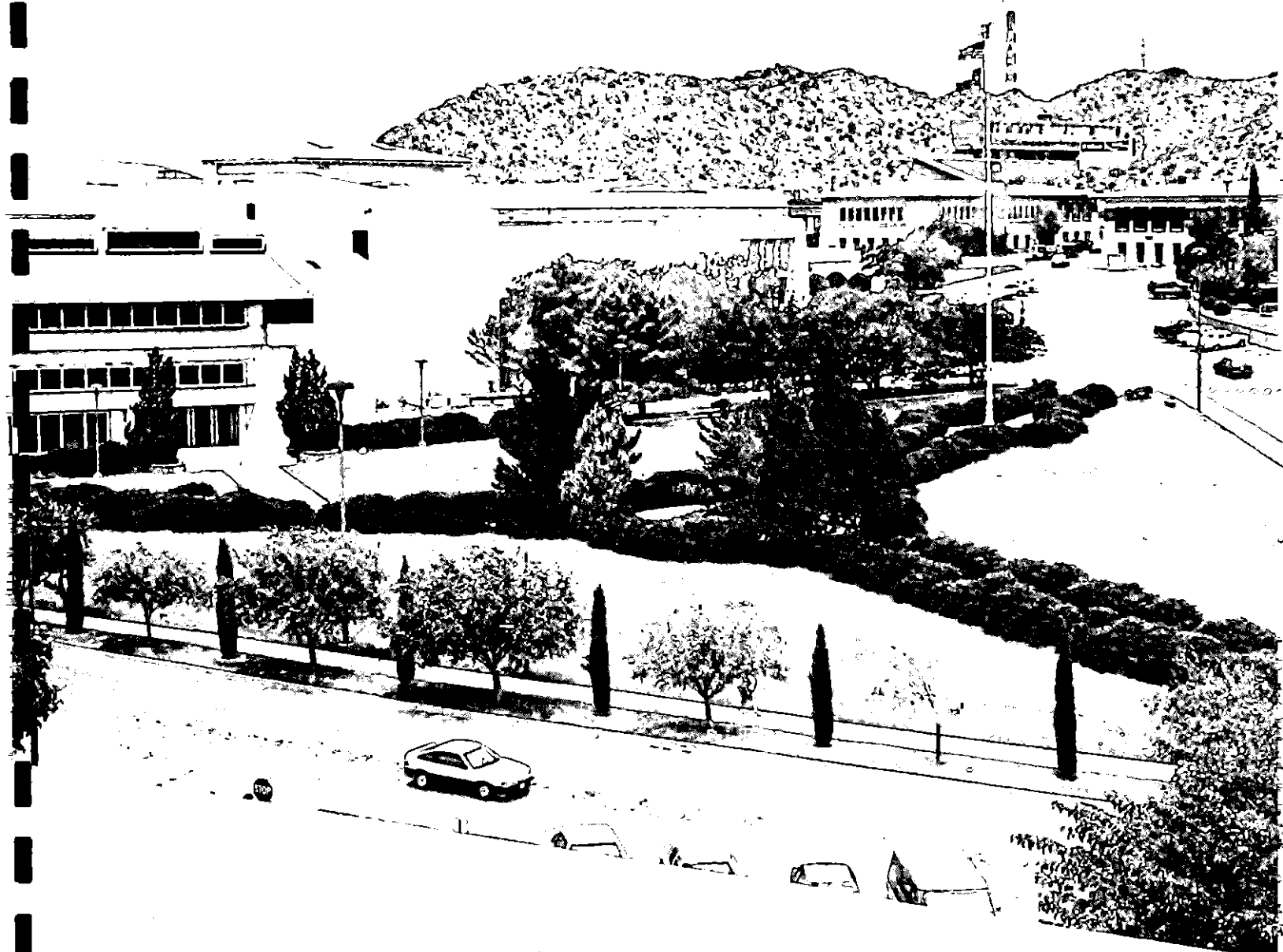
The Outdoor Adventure Program is the newest of the offerings. Over twenty-five different backpack, bicycle, rafting, or ski trips are offered each year. With destinations including the Grand Canyon, Big Bend and Steamboat Springs, OAP has become a very popular addition to campus life.

The department maintains an Outdoor Equipment Center which offers rafting, bicycling, and camping equipment for a minimal rental fee. The department is located in room 40 Memorial Gymnasium, Phone 747-5103 for information or court reservations.

The UT El Paso Department of Intercollegiate Athletics is responsible for the University's participation as an NCAA Division I school and as a member of the Western Athletic Conference. The Department sponsors the following sports: men's football, basketball, cross country, indoor track, outdoor track, tennis, golf, and rifle and women's basketball, volleyball, cross country, indoor track, outdoor track, golf and tennis.

Football is played in the 52,000-seat Sun Bowl Stadium, which is located on campus and nestled in the southern tip of the Rocky Mountains, and basketball in the 12,222-seat Special Events Center. The men's basketball team won the WAC Championship in 1983, 1984, 1985, 1986, and 1987 and has advanced to the NCAA tourney in each of the last six years; the men's golf team placed 2nd at the NCAA tourney in 1988; other recent nationally ranked teams are rifle, and men's and women's track.





Academic Regulations
Requirements for Undergraduate Degrees
Academic Honors
Student Life Policies and Procedures
Student Educational Records

POLICIES & PROCEDURES

Academic Regulations

Current regulations are applicable to every student enrolled, regardless of the date of admission. Interpretations or explanations contrary to the regulations herein set forth shall not be binding upon the University.

STUDENT RESPONSIBILITY

Students are responsible for being aware of

1. the current academic regulations and calendar of the University;
2. the general and specific degree requirements in the major field;
3. those policies which apply to registration;
4. their academic status, including eligibility to re-enroll in the University. If an ineligible student enrolls, he or she will be dropped.

General academic regulations are contained in this section of the University catalog. Degree requirements and those specific to a given major field can be found in the pertinent College and departmental sections. Registration policies, procedures and schedules can be found in this section and in the Schedule of Classes. Clarification and assistance can be obtained from the academic deans, department chairpersons, and official departmental academic advisors.

With the exception of degree requirements for graduation, students are bound by the academic regulations in effect at the time of each registration, including those recent changes which appear in class schedules.

REGISTRATION

Although every effort is made to advise students academically, final responsibility for registration rests with the student. Students may attend only those classes for which they are enrolled. A student is not enrolled in a course and will not receive a grade for it unless the proper fees are paid by the deadlines published in the catalog and class schedule or unless arrangements have been made for deferral of payment. After registration, class enrollments can be verified with the dean or the Registrar.

LATE REGISTRATION

Registration begun or completed after classes begin for any semester or summer term is considered late registration. A late registration fee is charged: \$500 for the first day and \$2.50 each day thereafter to a maximum of \$15.00. Late registrants are subject to the same regulations and course requirements as students who enroll on time. Each class missed because of late registration will be counted as an absence, and class or laboratory work missed will be counted as zero unless the instructor grants permission to make up the work.

STUDENT-INITIATED REGISTRATION CHANGES

The student should refer to the academic calendar at the beginning of this catalog or in the semester class schedule to identify the period during which adds, drops, withdrawals, and pass/fail registration may be accomplished. During Late Registration and Add/Drop period for each semester, all student changes in registration must have departmental approval. All student-initiated changes in registration require payment of an Add/Drop Fee.

Course Drops: It is the student's responsibility to officially drop any course that he/she no longer wishes to attend. Failure to do so may result in a grade of F on the student's academic record. Students dropping all classes are withdrawing and should consult the paragraphs on "Withdrawal from the University."

Classes dropped prior to the official census date of any term will be deleted from the student's semester record. Course drops filed by the student after this period but prior to the final deadline (end of the 6th week of a long session or an appropriately shorter period during a summer session), will result in a grade notation of W.

After the student drop deadline, students may be dropped from class only with approval of the instructor, who will initiate the drop transac-

tion and assign the grade of W or F. Instructors are not obligated to drop students (see "Faculty-Initiated Course Drops" below).

FACULTY-INITIATED COURSE DROPS

At the discretion of the instructor, a student may be dropped from a course because of excessive absences or lack of effort. In all faculty-initiated course drops, the instructor determines whether the student is to receive a grade of W or F.

Students whose behavior in the classroom disrupts the teaching-learning process may be dropped upon the recommendation of the instructor, subject to the approval of the dean of students.

WITHDRAWAL FROM THE UNIVERSITY

Withdrawal from the University must be done through the Records Office, Office of the Registrar. If the withdrawal is completed prior to the deadline for student-initiated course drops, the student will receive W's. If the withdrawal is completed after that deadline, instructors will determine grades of W or F.

COURSE NUMBERING SYSTEM

Each course offered by The University of Texas at El Paso is identified by a four-digit course number. The first number indicates the semester hour value of the course. The second number indicates the level: 1 = freshman, 2 = sophomore, 3 = junior, 4 = senior, 5 or 6 = graduate. The last two numbers identify the course within its particular department.

Lower Division Courses are designated by a 1 or 2 as the second digit of the course number.

Upper Division (Advanced) Courses are designated by 3 or 4 as the second digit of the course number. The student should refer to the departmental and college requirements for specific conditions, if any, imposed on registration in advanced courses.

CLASSIFICATION OF STUDENTS

Freshman	Fewer than 30 semester hours of credit
Sophomore	30-59 semester hours of credit
Junior	60-89 semester hours of credit
Senior	90 or more semester hours of credit

UNDERGRADUATE COURSE LOAD

Maximum credit load per long term is 21 hours and an appropriately shorter load per summer term. Written permission of academic dean must be secured to take more than maximum load; students must have a GPA above 2.0 to seek permission.

Full-time students are those who are registered for 12 or more semester hours in a fall or spring semester or for an appropriately shorter load in a single summer term. All other undergraduate students are classified as part-time.

Students who are not Eligible to Enroll without conditions such as those who are on Academic Probation or Academic Suspension/Dismissal, or who have been readmitted or reinstated from such conditions, or who are in provisional admission status, will have course load conditions imposed by their advisor or dean. See the section entitled Standards of Academic Performance.

CLASS ATTENDANCE

The student is expected to attend all classes and laboratory sessions. It is the responsibility of the student to inform each instructor of extended absences. When, however, in the judgment of the instructor, a student has been absent to such a degree as to impair his or her status relative to credit for the course, the instructor may drop the student from the class with a grade of W or F.

Absence for Religious Holy Days: Students will receive permission to be absent for the observance of a religious holy day if the student has so notified the instructor of his/her intent in writing no later than the 15th day of the academic term. Students so excused will be permitted to take missed examinations or complete assignments.

Absence from Examination: A student absent from a test during the semester is graded zero unless another policy is set by the instructor.

GRADES AND GRADE POINTS

Grade	Meaning	Grade Points per semester hour
A	Excellent	4
B	Good	3
C	Average	2
D	Below Average but Passing	1
F	Failure	0

The above grades are included in the grade point average (GPA), which is calculated as follows: (1) multiply the semester hours of credit in each course by the number shown above for the grade received in that course; (2) divide the total grade points earned by the sum of the semester hours attempted in courses in which one of the above grades was earned.

The following grades are not included in grade point average calculations:

Grade	Meaning
I	Incomplete
S	Satisfactory, in a Pass/Fail course
U	Unsatisfactory, in a Pass/Fail course
P	In Progress
W	Withdrawal
CR	Transfer credit or credit by examination
N	A temporary administrative grading notation often meaning not reported by the faculty or some other administrative problem
X	Ineligible to receive grade

COURSES TAKEN ON A PASS/FAIL BASIS

An undergraduate student who is Eligible to Re-enroll without conditions may take a maximum of eight elective courses on a Pass/Fail basis with the following conditions: such courses may not be reserved for graduate credit; not more than two such courses may be taken in any one semester, nor more than one in a single summer term. The student must file a Pass/Fail form with the Records Office, Office of the Registrar during the first four weeks of the long semester and an appropriate shorter period during the summer session. Check the current Class Schedule for exact dates. To obtain credit for the course, the student must meet the minimum standards and do all the assigned work required for a grade of A, B, C, or D.

If prior approval by the student's college has been granted, Pass/Fail credits may be counted toward a degree, but only as elective credit. Non-degree students do not need college approval; Pass/Fail credits earned by a non-degree student will not be accepted for a degree at a later time. Pass/Fail credits are not included in calculating the GPA. There is no assurance that Pass/Fail credits will be accepted as transfer credits by another institution.

INCOMPLETE OR IN PROGRESS WORK

Assignment of the grade I is made only in exceptional circumstances and requires the instructor to file with the academic dean an outline of the work to be completed and the time span (no longer than one calendar year) allowable for completion. In no case may repetition of the course be assigned as work to be completed. If the work has not been done at the end of the specified time, the I will be changed to an F.

The grade of P (in progress) is limited to specific courses in which re-enrollment is required. This includes all thesis courses (3598-3599, 3620-3621), graduate internships, and certain undergraduate courses.

REPETITION OF COURSES

Students may repeat courses at UT El Paso under either of the following conditions:

1. Repetition without GPA recalculation: all grades earned remain on the record AND in the GPA calculations.
2. Repetition with GPA recalculation: all grades earned remain on the record BUT the previously-earned grade is not included in the GPA calculation. The academic record will be annotated with the symbol (R) next to the earlier grade.

Courses completed at UT El Paso may be repeated for credit only

at this institution, except by permission of a student's academic dean. A college may require that a student obtain permission before repeating a course at UT El Paso without recalculation. Freshman-level courses repeated for the first time at UT El Paso AUTOMATICALLY entail GPA recalculation if a grade of A, B, C, D, or F is earned when the course is repeated, and if a "COURSE REPEAT WITH GRADE REPLACEMENT APPROVAL" form is submitted by the student, through his academic dean, to the Records Office.

With the exception of freshman-level courses repeated for the first time, repetition of courses at UT El Paso with GPA recalculation is normally not possible; exceptions require approval of the dean of the college in which the student is majoring. Approval is certified when the college submits a "COURSE REPEAT WITH GRADE REPLACEMENT APPROVAL" form, on behalf of the student, to the Records Office.

Any GPA recalculation, as well as annotation of the academic record with the symbol (R), will be done following receipt of final grades for the semester during which a course eligible for GPA recalculation is repeated.

NOTE: UT El Paso students are cautioned that under no circumstances may a course taken at this institution and repeated at another college or university be eligible for GPA recalculation, even if the student is involved in first-time repetition of a freshman-level course. Courses transferred to UT El Paso are not calculated in a student's GPA.

RESERVATION OF WORK BY UNDERGRADUATES FOR GRADUATE CREDIT:

Ordinarily, undergraduates are barred from graduate courses. A student who has a bachelor's degree is not eligible to reserve courses for graduate credit. It is possible for undergraduate seniors to register in graduate courses in their last semester under the following conditions:

1. The undergraduate must lack not more than 12 semester hours (or 3 semester hours in a short summer session) of work to complete all requirements for the first bachelor's degree and must have a grade point average of at least 3.0 in junior and senior courses.
2. These 12 hours (or less) must all be completed in the same semester or summer session in which the graduate courses are taken.
3. Total registration for all work must not exceed 15 semester hours (or 6 hours in a short summer session).
4. All registration for graduate courses must be approved at the time of registration by the graduate advisor of the department, the undergraduate dean, and the Graduate Dean.

The undergraduate cannot count work in graduate courses toward the bachelor's degree. It will be reserved for credit toward a graduate degree. A form for reserving courses, which needs the signature of the undergraduate dean, the official graduate advisor in the student's major area, and the Graduate Dean, must be secured from the Graduate Dean's office.

CREDIT BY EXAMINATION

The University awards credit for acceptable scores through the Advanced Placement Program (AP), College Level Examination Program (CLEP), and College Board Achievement (ACH) Tests published by the College Entrance Examination Board. Official score reports from these national tests should be sent to the Office of Admission and Evaluation, UT El Paso, El Paso, Texas 79968-0510.

Credit earned by examination is subject to the following policies.

1. A student is not eligible to take an examination in a subject for which credit has been earned in a higher level course or in which a grade other than W has been received.
2. Credit earned by examination satisfies degree requirements in the same way as credit earned by instruction, but it does not fulfill the requirement for completion of 30 semester hours in residence.
3. Credit earned by examination will be posted on the student's official academic record after enrollment at the University.
4. Credit earned on the basis of non-departmental examinations

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will be recorded as "CR" and will not be used in calculating the grade point average for any purpose.

5. CLEP General Examinations may be used for elective credit only.
6. Texas statutes require that a student graduating from a state institution complete at least 3 semester hours of credit in American History and 3 semester hours of credit in American Government by classroom instruction. Therefore, only 3 semester hours in each of these areas can be earned by examination.
7. In order to transfer, credit by examination awarded at another institution must be validated by satisfactory completion of higher level work in that subject area. Otherwise, the student must submit original test scores to the University for its own evaluation.
8. Academic deans make the final determination of the applicability of credit earned by examination to the student's degree program. Credit for the following courses can be earned by examination:

Course	CLEP	Test Used
ACCT 3201, 3202	CLEP	Introductory Accounting
BIOL 3105, 3106	CB-AP	Biology
BIOL 3105, 1107, 3106, 1108	CLEP	General Biology or Biology
BLAW 3301	CB-ACH	Introductory Business Law
CHEM 3105	CLEP	General Chemistry or Departmental Exam
CHEM 3105, 3106	CB-AP	Chemistry
CHEM 3106, 2106	Departmental Examination	
CS 4101	CB-AP	Computer Science
ECON 3203	CLEP	Introductory Macroeconomics
ECON 3204	CLEP	Introductory Microeconomics
EDPC elective	CLEP	Educational Psychology
ENGL 3111	CLEP	College Composition with Essay or
	CB-ACH	English Literature or Composition
ENGL 3111, 3112	CLEP	College Composition with Essay or
	CB-AP	English Literature or Composition
*FREN 4101, 4102, 3201, 3202; 3357; 3355	CB-AP	French Language
*FREN 4101, 4102, 3201, 3202; 3301; 3357	CB-AP	French Literature
*GERM 4101, 4102, 3201, 3202; 3355; 3357	CB-AP	German Language
HE 3202	Departmental Examination	
HIST 3101	CLEP	Early Colonization to 1877
HIST 3102	CLEP	1855 to Present
HIST 3102	CB-AP	American History
HIST 3201	CLEP	Western Civilization I
HIST 3202	CLEP	Western Civilization II
HIST 3202	CB-AP	European History
MKT 3300	CLEP	Introductory Marketing
MGMT 3300	CLEP	Introduction to Business Management
MATH elective	CB-ACH	Mathematics Level II or Departmental Exam
MATH 4111	CLEP	Calculus with Elementary Functions, or
	AP	Calculus
MATH 4111	CB-AP	Mathematics: Calculus AB
MATH 4111, 3212	CB-AP	Mathematics: Calculus BC
NURS 3250, 3302, 3313, 7302, 7303, 7370.	Departmental Examination	

	& 7371		
PHYS 4103, 4104		CB-ACH	Physics
PHYS 4210, 4211		CB-AP	Physics
PHYS 4210		CB-AP	Physics C — Mechanics
PHYS 4211		CB-AP	Physics C — Electricity & Magnetism
POSC 3110		CLEP	American Government
PSYC 3101		CLEP	General Psychology
PSYC 3210		CLEP	Human Growth and Development
QMB 3201		CLEP	Statistics
SOCI 3101		CLEP	Introductory Sociology
*SPAN 4101, 4102, 3201, 3202; 3355/3356; 3357		CB-AP	Spanish Language
*SPAN 4101, 4102, 3201, 3202; 3357; 3300; 3304		CB-AP	Spanish Literature
SPAN Varies		CLEP	Departmental Examination must be taken. If the course into which the student is placed is completed with "C" or better, credit is given for the prerequisite course.

*Amount of credit determined by test score.

NON-CREDIT PLACEMENT EXAMINATIONS

Certain departments offer or require student exemption from taking courses based on departmental placement examinations. Such exemption does not grant credit for the course but permits the student to enroll in the next course in the subject area. Ordinarily, examinations must be taken before the student has completed any college courses in that subject area, and such examinations may not be taken to satisfy any part of the last 30 semester hours for which credit is received at the University. Placement is possible for the following courses:

Course	Test Used
ENGL 3110	Test of Standard Written English (TSWE)
FREN 4101	Departmental Examination
GERM 4101	Credit is granted if next course in sequence is successfully completed.
SPAN 4101	
SPAN 4103	
MC 3200	Departmental Examination
MATH 3105, 3120, 4109, or 4110	Departmental Examination
MATH 4111	CB-ACH Mathematics Level II or Departmental Examination

All decisions regarding specific tests for credit or placement, cut-off scores, and eligibility to take examinations are made by the appropriate academic department with the concurrence of the academic dean. Changes made in the regulations, tests, and cut-off scores are effective at the end of the semester in which the change is approved.

TRANSFER CREDIT

The University evaluates transfer work for newly admitted and former undergraduate students who are transferring work back to UT El Paso. In general, grades of "C" or better earned in academic courses at fully accredited institutions are evaluated on the same basis as if the work had been completed at U.T. El Paso; applicable equivalent or elective credit is given. Only courses with grades of A, B, C, D, Credit, or Pass are evaluated, and quarter hours are converted to semester hours by multiplying the quarter hours by two-thirds. A transfer grade point average is not determined, and transfer grades are not calculated into the UT El Paso grade point average. A maximum of 66 semester hours, limited to lower division work, is transferrable from two-year junior or community colleges. Transfer credit for engineering courses is given only for work completed at ABET-accredited institutions. The applicability of all courses to the degree plan, including

those with grades of "D," is determined by the student's academic dean.

FINAL EXAMINATIONS

Exemption from final examinations may not be given. Final examinations are scheduled to be three hours in length and take place during the final examination period. It is the policy of the University not to administer a second final examination in a course.

CONCURRENT ENROLLMENT

No credit earned through enrollment at another college or university while the student is currently enrolled at The University of Texas at El Paso will be counted toward a degree unless written approval has been given in advance by the student's academic dean.

DEAN'S LIST

At the close of each Fall and Spring semester, the Office of the Registrar publishes a Dean's List of all full-time undergraduate students who have earned a semester grade point average of 3.5 or higher. Full-time is considered 12 semester hours or more.

A separate Dean's List is prepared for each undergraduate college, and appropriate public recognition, both on- and off-campus, is given to those on the list. Special recognition is accorded those with 4.0 averages. *This honor will be noted on the student's academic record and grade report.*

STANDARDS OF ACADEMIC PERFORMANCE

Undergraduate students are expected to maintain a cumulative grade point average (GPA) of at least 2.0, a "C" average, for all work attempted at UT El Paso, and at least a GPA of 2.0 for all coursework required in the major field of study. These are University-wide minimum requirements for the conferral of any bachelor's degree, but higher minimum standards of performance are required in some programs.

When final grades for each term are posted to the student academic record, both term GPA (for the semester or session just ended) and cumulative GPA (for all work attempted at UT El Paso) are included. In addition, designations appropriate to the student's past academic performance and eligibility to continue at the University are included. The resulting academic standings, and the designations appropriate to each, are indicated below.

- **ELIGIBLE TO RE-ENROLL** is the standard designation for a student whose cumulative GPA is 2.0 or higher.
- **ELIGIBLE TO RE-ENROLL/ACADEMIC PROBATION** is the standing designation for a student not under Academic Suspension, Extended Academic Suspension or Dismissal, whose cumulative GPA is below 2.0 at the end of any semester or full summer session. The student will remain in this status until a 2.0 cumulative GPA is achieved and probation is removed, or until a total of 15 semester hours has been attempted while on probation.
- **NOT ELIGIBLE TO RE-ENROLL/ACADEMIC SUSPENSION FOR ONE SEMESTER** is the standing designation for a student who has attempted 15 semester hours while on academic probation and has not achieved a 2.0 cumulative GPA. A student thus suspended **MAY NOT** re-enroll at the University until one long semester or full summer session has elapsed, following which, if the student wishes to re-enroll, a Petition for Reinstatement must be made to the student's academic dean. If the petition is approved, the student will be permitted to re-enroll under academic probation, plus any special conditions which may be imposed by the academic dean.
- **NOT ELIGIBLE TO RE-ENROLL/EXTENDED ACADEMIC SUSPENSION FOR ONE YEAR** is the standing designation for a stu-

dent who, following academic suspension and reinstatement, attempts 15 semester hours but fails to achieve a cumulative GPA of 2.0.

A student thus suspended **MAY NOT** enroll at the University until one full calendar year has elapsed, following which, if the student wishes to re-enroll, he/she must apply for readmission with the Office of Admission and Evaluation. Before a decision is made on the application, the student will be required to negotiate a Petition for Reinstatement with the academic dean of the previous major or, if the student is selecting a new major, the dean of the intended new major. If readmitted, the student will be permitted to re-enroll under academic probation, plus any special conditions of the Petition for Reinstatement.

- **NOT ELIGIBLE TO RE-ENROLL/ACADEMIC DISMISSAL FOR TWO YEARS** is the standing designation for a student who, following a second academic suspension and readmission, attempts 15 semester hours but fails to achieve a cumulative GPA of 2.0. A student thus suspended **MAY NOT** enroll at the University until two full calendar years have elapsed, following which, if the student wishes to re-enroll, he/she must apply for readmission with the Office of Admission and Evaluation. Before a decision is made on the application, the student will be required to negotiate a Petition for Reinstatement with the academic dean of the previous major or, if the student is selecting a new major, the dean of the intended new major. If readmitted, the student will be permitted to re-enroll under academic probation, plus any special conditions of the Petition for Reinstatement.
- **PROVISIONAL** is the standing designation for a student who has been provisionally admitted to the University (see Admission section of this catalog). Once provisional status has been removed, the student is subject to the Standards of Academic Performance described above.

All students reinstated or readmitted after suspension must obtain their Dean's permission to re-enroll until that student's academic status returns to **ELIGIBLE TO RE-ENROLL** (as defined above).

Any student who attempts to circumvent the foregoing policies and procedures is subject to disciplinary action.

Any appeal from the regulations governing academic performance shall be directed to the dean of the college in which the student is a major, who is empowered to grant relief in unusual cases if the circumstances warrant such action.

READMISSION OF STUDENTS AFTER EXTENDED ABSENCE

At the time of readmission to the University after an absence of at least two academic years, a student has the option of:

1. continuing with the academic record and GPA as they stand, and completing all remaining requirements for graduation; or
2. beginning anew, with no courses attempted earlier at UT El Paso counted toward the degree, nor counted in the cumulative GPA calculations. This option may be elected only once.

If option (1) is chosen, the GPA will be computed according to rules in force at the time of re-entry. If option (2) is chosen, notation will be made in the student's record indicating that portion of the record which is to be involved in computing requirements for graduation. In either case, all courses taken and grades earned will remain on the official academic record. Pursuit of the degree under either option does not exempt the student from the provisions of the "seven-year rule" (see Catalog Requirements below).

If the student was not eligible to re-enroll at the end of the last period of enrollment at the University, negotiation of a Petition for Reinstatement with the academic dean of either the previous or intended major is required at the time of readmission. The contract will specify which of the two options has been chosen.

General Requirements for Undergraduate Degrees

TEXAS ACADEMIC SKILLS PROGRAM

The Texas Academic Skills Program (TASP) is an instructional program designed to ensure that students enrolled in Texas public colleges and universities possess the academic skills needed to perform effectively in college-level coursework. After students are admitted, the program identifies those in need of further preparation for college-level work in particular areas and requires them to participate in academic skills development courses or programs until they have attained the necessary level of skills.

By law, the TASP includes an official test in reading, writing, and mathematics whose purpose is to identify students in need of academic skills development. The test is not required for admission, and TASP test results are not considered in making admission decisions. All students are required by law to take the official TASP test before they complete 15 hours of college-level courses. Incoming students who believe they have the level of academic skills necessary to undertake college-level courses are encouraged to take the official TASP test before enrolling in courses. All students who have not yet taken the official TASP test are required to take an unofficial diagnostic test before registering for classes in the first semester. Students must have performed satisfactorily on all parts of the test before taking upper division courses that will give them 60 or more hours of college level credit.

The Texas Academic Skills Program requirements apply only to students who have not earned at least three hours of college credit in Texas or elsewhere before Fall 1989.

Questions about the Texas Academic Skills Program or about the TASP test may be directed to the Academic Advising Center at 747-5290.

DEGREE PLAN

Students are advised to obtain and follow the degree plan for their major upon their first enrollment at the University. The student is required to indicate a major and file a degree plan of the major with the academic dean upon completion of 60 semester hours.

CHANGE OF MAJOR

A student who wishes to change majors must obtain permission of the dean of the college of the new major.

CATALOG REQUIREMENTS

General Academic Regulations: General academic regulations may be changed at any time. All students, regardless of when originally enrolled, are required to abide by current academic regulations.

Specific Course and Degree Requirements: In order to graduate, a student must fulfill the specific course and degree requirements of the catalog in effect at the time of his/her first enrollment or of any subsequent catalog in effect during his/her enrollment, provided that the requisite courses outlined in the selected catalog are still being offered. No catalog more than seven years old may be used to determine the course requirements for a degree. Students entering the University for the first time during the summer session will be subject to the requirements of the catalog for the next fall term, or of a later catalog.

COMPLETION OF FRESHMAN-LEVEL COURSES

All freshman-level courses which are required by specific course number shall be completed before the student has completed 90 semester hours toward his/her degree. Otherwise, no credit will be granted toward fulfilling the minimum credit hour requirements for the degree even though the courses must be completed.

RESIDENCE

Work counting toward the degree must be completed in residence at the University as follows:

1. a total of at least 30 semester hours
2. twenty-four of the last 30 semester hours
3. nine semester hours of advanced courses in the major subject must have been completed not more than three years previous to the date of graduation.

ONE-HOUR COURSES

No more than six one-hour courses may be counted toward completion of the minimum total hours required for a degree (unless degree requirements specify otherwise), except with specific approval of the academic dean.

GRADUATION

Degrees are conferred at the end of each long semester (December, May) and each summer session (August). Formal commencement ceremonies are held in May for all candidates who complete degree requirements during the Spring semester and in December for Fall candidates and graduates of the previous Summer. The student must apply for graduation and pay the appropriate fee in order to be considered a candidate. The application process begins with the academic dean and should be initiated during the next-to-last semester or session and completed no later than the published deadline.

GRADE POINT AVERAGE REQUIRED FOR GRADUATION

A minimum grade point average of 2.0 must be achieved in all course work at The University of Texas at El Paso and in all transfer work counted toward the degree. The UT El Paso cumulative grade point average consists of all grades earned at this institution regardless of their applicability toward a degree. Transfer credits may be counted toward meeting degree requirements, but transfer grades and grade points do not enter into UT El Paso grade point average calculations. A minimum grade point average of 2.0 is required in the major. This is intended as a University-wide minimum and does not prevent a college from requiring a higher GPA in specific majors or programs, provided appropriate approvals have been obtained.

MAJOR EXAMINATIONS

At the discretion of the department concerned, a comprehensive examination may be required in the major subject under the following conditions:

1. four hours written, or three hours written and one hour oral
2. the department fixes the time and place, and supervises the examination
3. in case of failure, the student may take another examination on a date determined by the department.

SECOND BACHELOR'S DEGREE

A second baccalaureate degree will not be conferred until the candidate has completed at least 24 semester hours at The University of Texas at El Paso, in addition to those counted toward the baccalaureate degree requiring the higher number of semester hours of credit. These additional hours must include at least 6 advanced hours in the major subject of the second degree, and at least 6 hours must have been earned after completion of requirements for the first bachelor's degree. A student working toward a second bachelor's degree will register as an undergraduate student. Two bachelor's degrees may not be awarded to any candidate at the same commencement. It is not possible for a student holding a B.A. degree from The University of Texas at El Paso to receive a second B.A. degree from this institution.

Academic Honors

The University of Texas at El Paso offers three opportunities for students to achieve special recognition for their academic performance. Graduation with any of these honors adds a special distinction to academic records and diplomas and may enhance the prospects for graduating seniors to enter graduate and professional schools or the job market. To be eligible for these programs, candidates must be among the most able and intellectually curious of students and must meet minimum GPA requirements. Each form of honors is described more fully below.

ACADEMIC HONORS AT GRADUATION

Honors will be awarded upon graduation in the following categories for each baccalaureate degree:

1. HIGHEST HONORS will be awarded to students who attain a minimum UT El Paso grade point average of 3.90. A transfer student must have completed at least 85% of the academic work at The University of Texas at El Paso to be eligible for highest honors.
2. HIGH HONORS will be awarded to students who attain a minimum UT El Paso grade point average of 3.80, but who do not qualify for Highest Honors. A transfer student must have completed 75% of the academic work at The University of Texas at El Paso to be eligible for High Honors.
3. HONORS will be awarded to students who attain a minimum UT El Paso grade point average of 3.50, but who do not qualify for High or Highest Honors. A transfer student must have completed 50% of the academic work at The University of Texas at El Paso to be eligible for Honors.

Requirements for honors for a second degree include the above requirements with the additional stipulation that the student complete sixty (60) hours beyond the original baccalaureate requirements.

In computing the minimum grade point average for academic honors at graduation, only grades earned at UT El Paso will be included.

UNIVERSITY HONORS PROGRAM

Students participating in the University Honors Program enroll in special Honors courses, which may be experimental, team-taught, or interdisciplinary and are limited in size to permit more discussion and interaction among the instructor and students. Honors courses emphasize development of communicative skills and critical thinking. Qualified students may do Honors work by contract or independent study when Honors sections of specific courses are not offered. Another option is the Honors Senior Project, bearing 6 hours of credit, in which students carry out directed research and present their findings, usually in the form of a thesis.

The program offers a number of special features and benefits to its students: the Honors Lounge, Honors Council, and Honors Journal, as well as opportunities to serve as tutors, to study in Honors semesters at other campuses, and to interact with students from Honors programs at universities around the country.

Students accepted into the Honors Program generally must rank in the upper 15% of their high school graduating class and achieve a superior score on either the SAT or ACT. Maintenance of a 3.3 GPA is the criterion for admitting students already enrolled at the University and for continuance in the program. See the University Honors Program section on p. 165 of this Catalog for specific details of program options.

Students wishing more information are invited to contact the Honors Director, Miners' Hall 309, (915) 747-5858.

DEPARTMENTAL HONORS PROGRAM

Departmental Honors students will complete a senior thesis, senior project, or other special requirement, depending on the department. A departmental faculty member will direct the project or thesis. The director, along with a departmental honors committee, will judge the student's work, and outside referees may be consulted if deemed appropriate. Students may include departmental honors credits with university honors credits upon consultation with the University Honors Advisory Committee. Consult the departmental sections of this catalog for complete information.

Student Life Policies and Procedures

General Regulations

Detailed policies and procedures affecting student life are printed in the *Handbook of Operating Procedures* — student section. The handbook supplements the rules and regulations of the Board of Regents and covers student conduct and discipline, use of University facilities, student organizations, educational records and student publications. Copies of the Student Handbook may be obtained from the Student Affairs Office or the Student Association Office. The *Rules and Regulations* of the Board of Regents of The University of Texas System are also available in these offices.

While enrolled at the University a student neither loses the rights nor escapes the responsibilities of citizenship. A student who violates the law is subject to punishment by civil authorities or civil and campus authorities if the act is committed in conjunction with a campus activity. All students are expected and required to obey the law, to show respect for properly constituted authority and to observe correct standards of conduct.

Students are expected to maintain a high standard of honor in their scholastic work. Scholastic dishonesty (which includes the attempt of any student to present as his own the work of another, or any work which he has not honestly performed, or attempting to pass any exami-

nation by improper means) is a serious offense and will subject the student to disciplinary action. The aiding and abetting of a student in any dishonesty is held to be an equally serious offense.

The use, possession, or sale of any illegal drugs including any amount of marijuana on the campus of the University is prohibited at all times. Any such use, possession, or sale is a violation of Regents' Rules and Regulations and of University policies governing student conduct, as well as a violation of State Law. In addition to possible criminal prosecution, student offenders will be subject to disciplinary action by the University. The minimum disciplinary penalty which will be imposed is suspension from the University for at least one year although permanent expulsion from the University could result.

Computer usage violations, use of alcoholic beverages, dishonesty, gambling, defacing of property, endangering the health or safety of others, use of abusive or vulgar language, altering of records, possession or use of firearms, failure to respond promptly to official notices, etc., will subject the student to disciplinary action.

The obstruction or disruption of any teaching, research, administrative, disciplinary, public service or other authorized activity on campus is prohibited and will subject the student or group of students to disciplinary action.

HAZING

Under the law, individuals or organizations engaging in hazing could be subject to fines and charged with a criminal offense.

According to the law, a person can commit a hazing offense not only by engaging in a hazing activity, but also by soliciting, directing, encouraging, aiding or attempting to aid another in hazing; by intentionally, knowingly or recklessly allowing hazing to occur; or by failing to report first-hand knowledge that a hazing incident is planned or has occurred in writing to the dean of students. The fact that a person consented to or acquiesced in a hazing activity is not a defense to prosecution for hazing under this law.

In an effort to encourage reporting of hazing incidents, the law grants immunity from civil or criminal liability to any person who reports a specific hazing event to the Dean of Students; and immunizes a person from participation in any judicial proceeding resulting from that report.

This law does not affect or in any way limit the right of the University to enforce its own rules against hazing. The University regards any form of hazing as a major violation, and any individual and/or registered student organization participating in such activities will be prosecuted.

The law defines hazing as any intentional, knowing, or reckless act, occurring on or off the campus of an educational institution, by one person alone or acting with others, directed against a student, that endangers the mental or physical health or safety of a student for the purpose of pledging, being initiated into, affiliating with, holding office in, or maintaining membership in any organization whose members are or include students at an educational institution. Hazing includes but is not limited to:

- A. Any type of physical brutality, such as whipping, beating, striking, branding, electronic shocking, placing of a harmful substance on the body, or similar activity;
- B. Any type of physical activity, such as sleep deprivation, exposure to the elements, confinement in a small space, calisthenics, or other activity that subjects the student to an unreasonable risk or harm or that adversely affects the mental or physical health or safety of the student;
- C. Any activity involving consumption of food, liquid, alcoholic beverage, liquor, drug, or other substance which subjects the student to an unreasonable risk or harm or which adversely affects the mental or physical health of the student;
- D. Any activity that intimidates or threatens the student with ostracism; that subjects the student to extreme mental stress, shame, or humiliation; or that adversely affects the mental health or dignity of the student or discourages the student from entering or remaining registered in an educational institution; or that may reasonably be expected to cause a student to leave the organization or the institution rather than submit to acts described in this subsection;
- E. Any activity that induces, causes, or requires the student to perform a duty or task which involves a violation of the Penal Code.

PENALTIES

Penalties which may be imposed by the Dean of Students in conjunction with the approved disciplinary procedures include the following: admonition, disciplinary probation, withholding of grades, official transcript or degree, restitution, failing grade, denial of degree, suspension and expulsion, or revocation of degree and withdrawal of diploma. In addition, certain privileges may be withdrawn consistent with the severity of the offense and the rehabilitation of the student. These penalties may be imposed singularly or in any combination upon individuals, groups or organizations.

DEBTS

The University is not responsible for any debts contracted by individual students or by student organizations. The University will not assume the role of collection agency for any organization, firm or individual to which students may owe money, nor will the University adjudicate disputes between students and creditors over the existence or amounts of debts.

DEBTS OWED TO THE UNIVERSITY

No student may refuse to pay or fail to pay a debt owed to the University. In the event of non-payment of debts owed to the University, the University will deny readmission, deny further registration, withhold grades, withhold official transcripts, and withhold a degree to which the student might otherwise be entitled.

BAD CHECKS

A student who gives the University a check, draft or order which is not subsequently honored and the fault is not that of the bank, and who does not pay the University the amount due within five class days after the receipt of written notice that the bank has refused payment, may be subject to disciplinary action. A student who pays tuition and fees with a bad check, draft or order, the fault not being that of the bank, may be withdrawn from the University for non-payment of tuition and fees if the student fails to pay the University the amount due within five class days after receiving written notice.

IMMUNIZATION REQUIREMENT

In order to protect the health of the University community, all students are required to submit proof of immunization, or to be immunized, for Tetanus-Diphtheria, Measles, Mumps, and Rubella. In addition, international students must demonstrate freedom from Tuberculosis.

A form on which the required immunizations can be documented is available from the Office of Admission and Evaluation or the University Health Service. Since most secondary schools are required by law to maintain similar records, a copy of the high school immunization record may be submitted.

The University Health Service is responsible for assuring compliance by students with these requirements, and may deny registration if they have not been met. The Health Service provides the required immunizations free of charge, with the exception of X-ray screening for Tuberculosis for which there is a modest charge.

Student Educational Records

The University of Texas at El Paso has developed policies regarding educational records in accordance with the Family Educational Rights and Privacy Act of 1974 and legislation of the State of Texas. Full information regarding the University's policies and procedures is contained in the Student Section of the Handbook of Operating Procedures, which is published by the Dean of Students Office, and is also available from the Office of the Registrar.

The University of Texas at El Paso defines educational records as those directly related to a student and maintained officially by the University. These will include: records relating to scholastic, disciplinary, and fiscal matters; records relating to services sought voluntarily by individual students; medical and counseling records; and personnel records of students which relate to jobs dependent on student status.

RELEASE OF INFORMATION FROM EDUCATIONAL RECORDS

Release of information from a student's educational records is governed by the provisions of the Family Educational Rights and Privacy Act of 1974. In general, educational records are not released to persons or agencies outside or inside the University except by explicit written request of the student. Exceptions to this include: appropriate University officials with legitimate educational interest, such as the student's dean or academic advisor; officials requesting information in connection with the student's application for financial aid, including scholarships and work-study grants, if such is necessary to the processing of the student's application or enforcement of conditions of such awards; state or federal agencies authorized by law or in compliance with a judicial order or subpoena; and persons requesting directory information as explained in the following section.

DIRECTORY INFORMATION

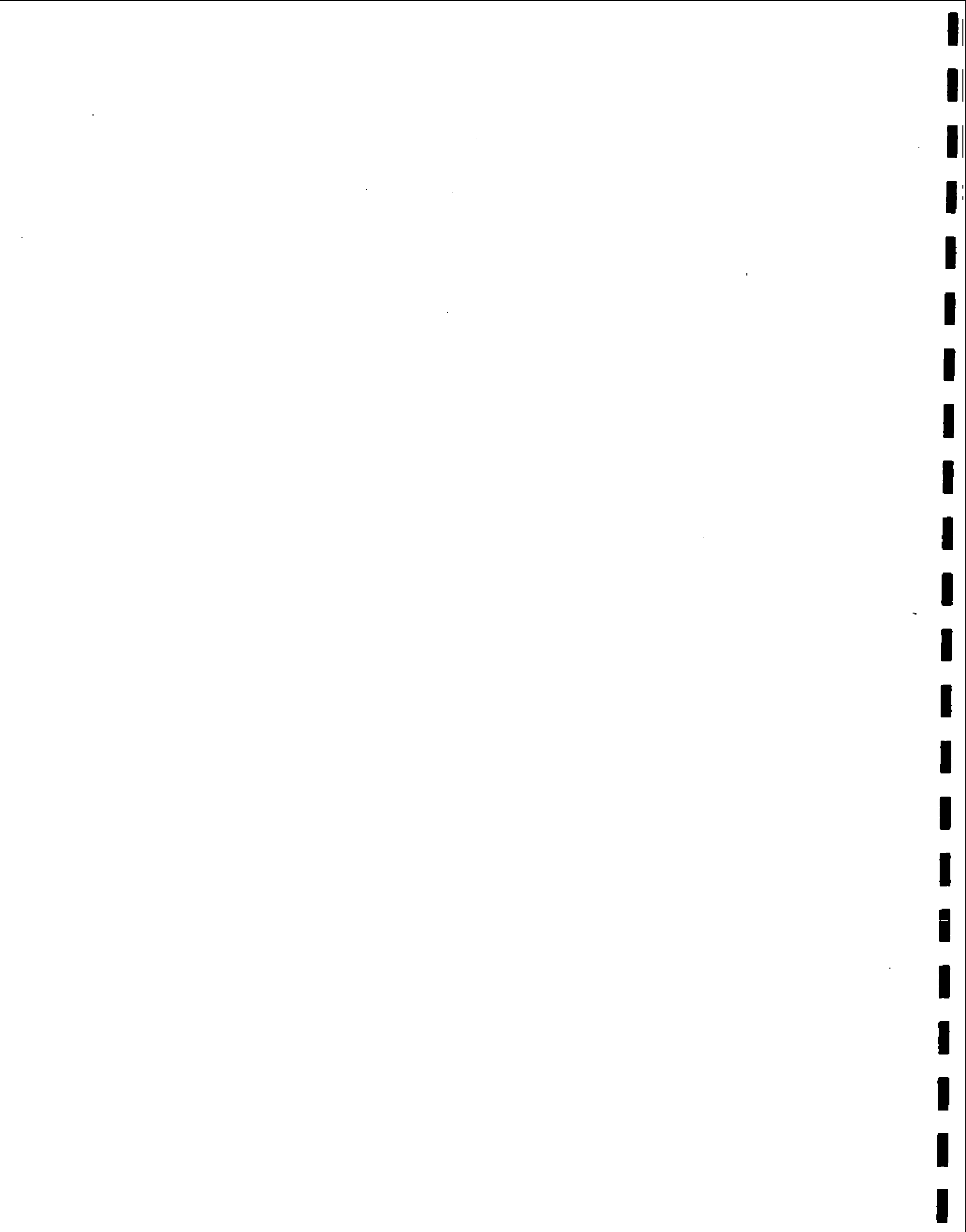
Directory information about a student is considered public information and is released without written consent. As defined by the Family Educational Rights and Privacy Act, directory information includes: student's name, telephone number, and address; dates of previous enrollments, number of currently enrolled hours and total completed

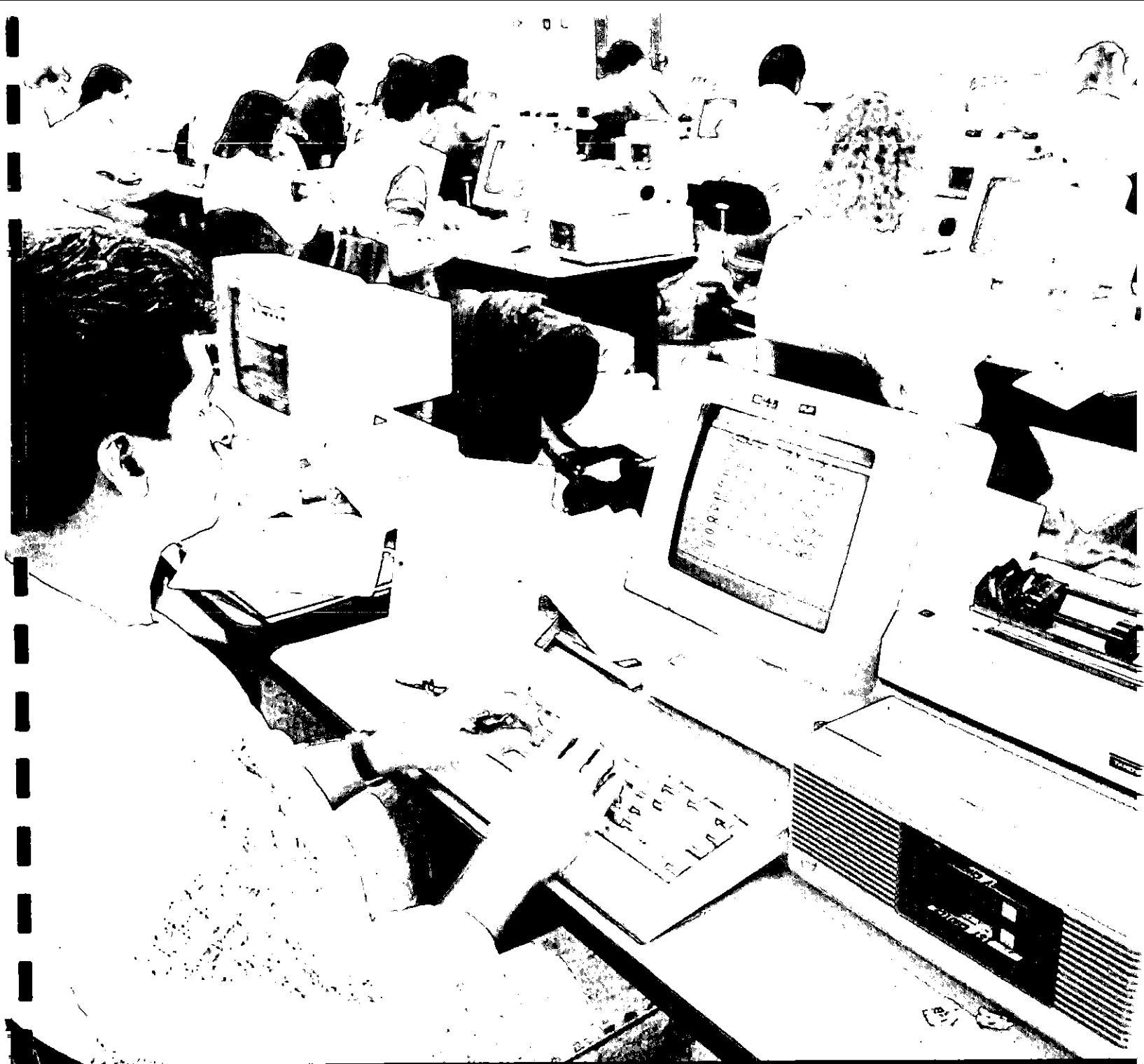
semester hours; student's major and degree(s) awarded and date degrees awarded; academic achievement, honors or other awards; high school(s) or most recent institution of higher learning which the student attended; participation in officially recognized activities and sports; and physical characteristics of members of the athletic teams.

Students have the right to restrict the release of the directory information as listed above. To do so, a written request must be filed with the Office of the Registrar. A restriction on the release of directory information will remain in effect until such time as a student so directs that the restriction be removed.

ACCESS TO RECORDS BY STUDENTS

Because of the importance of records to the student, not only while enrolled but for years afterward, the University encourages students to become familiar with the kinds of records maintained. Students have certain rights to review their records as outlined in the Student Section of the Handbook of Operating Procedures. Access to specific records should be made by written request to the University department maintaining that particular record. Access to records shall be granted to the student within a reasonable period of time. Students also have the right to challenge a perceived inaccuracy, misleading statement or perceived violation of privacy.





Accounting
Economics and Finance
Management
Marketing

Ronald W. Hasty, Dean
Elba Brown-Collier, Associate Dean
Business Administration Building 101
(915) 747-5241

The College of **BUSINESS** **ADMINISTRATION**

Introduction

The primary mission of the College of Business Administration is to provide students with broadly-based programs which give students the opportunity to prepare for positions of business leadership. The College meets the needs of its students in this regard with a variety of degree programs at both the undergraduate and graduate levels.

The College also meets an important secondary responsibility as a partner in the U.S.-Mexican Business community of the region. Many individuals engaged in business enroll in selected courses in order to gain specific skills or to broaden their knowledge. In addition, the College's Center for Professional Development offers a wide variety of non-credit programs designed for the business practitioner. The Bureau of Business and Economic Research conducts research and maintains a comprehensive data bank on the region. The Bureau publishes *The El Paso Economic Review* and the *Southwest Journal of Business and Economics*.

At the heart of all these programs is a distinguished faculty committed to teaching, research and community service. Their work as well as that of their students is supported by the superb facilities of the College of Business Administration Building, which opened in 1983, including two Micro-computer laboratories, an HP3000 Mainframe and an AT&T Writer's Workbench computer system.

The undergraduate program in the College leads to the Bachelor of Business Administration (B.B.A.) degree. Graduate programs lead to the Masters degree in Economics, the Master of Accountancy (M.Acc.) and the Master of Business Administration (M.B.A.). Information on graduate programs can be obtained from the Graduate Studies Catalog. In addition, a B.A. in Economics is offered through the College of Liberal Arts. Business minors in the B.A. degree are also available in Accounting, Economics, Management and General Business.

Bachelor of Business Administration

The College of Business Administration, with departments of Accounting, Economics and Finance, Management and Marketing offers the BBA degree with the following Major Options: Accounting; Computer Information Systems; Economics; Finance, with concentrations available in General Finance, Commercial Banking, and Real Estate; Management, with concentrations available in General Management, Human Resource Management, and Production Management; and Marketing, with concentrations available in Consumer Marketing, Industrial Marketing, Marketing Management, and Real Estate.

POLICIES CONCERNING ADMISSION TO AND COMPLETION OF BBA DEGREE PROGRAMS

- Students entering the College will be designated as Pre-Business majors until they have declared a major option.
- Major option declaration is required before the accumulation of 60 credit hours.
- Admission to a major option is limited to those students who meet the following requirements.
 - Completion of at least 45 credit hours with a minimum grade point average of 2.0 in all courses attempted.
 - Completion of the following courses (or their equivalent) with a minimum grade of "C": ENGL 3112; MATH 3201; ECON 3203, 3204; QMB 3201; CIS 3225; ACCT 3201, 3202.
- When a student selects the pre-Business major, he/she must file a degree plan in the Office of the Dean. Students wishing to declare a major option must be approved by the Dean's Office. The major code will be changed from pre-business and a new degree plan will be filed indicating the desired major.
- Advising is required for all Business Students who have declared a major option. Information as to the location and times for upper-level advising can be obtained in the Office of the Dean, Room 101. Advising is not required for Pre-Business students, but is available in the Office of the Dean, Room 101, Business Administration Building.
- Before enrolling in any junior- or senior-level (3300 or 3400) course that is taught in the College of Business Administration, the student must have completed 3a and 3b above, and have

completed SPCH 3101, 3102, or 3104; POSC 3110-3111; HIST 3101-3102 or HIST 3103-3104; and three semester hours of each of the required Natural Sciences, Behavioral Sciences and Humanities. Any 3300- or 3400-level business courses taken before the above requirements in 3a and 3b are met will not count toward degree requirements; such courses will count as business electives only, and other business courses will be designated to complete the degree requirements.

- A freshman-level non-business course may be repeated once and the later grade substituted for a previous grade in the student's grade point average (GPA) calculation. The student must file the appropriate petition in the Office of the Dean before repeating the course. Grades for other repeated courses will be used with previously attempted hours in computing the grade point.
- The College will limit transfer credit for business courses taken at a lower-division level to ACCT 3201, 3202; CIS 3225; ECON 3203, 3204; and QMB 3201. Other lower-level transfer credits may be accepted as elective credits only. Only those transferred grades that are "C" or above will be accepted for credit toward the BBA degree.
- To complete the degree, a student must comply with the following: Complete the required course of study as outlined below. Follow University academic regulations as stated elsewhere in this catalog. Earn a 2.0 grade point average in all courses attempted within the College of Business Administration. Note: Accounting majors also must earn a 2.0 average in ACCT 3321 and all 21 hours of required and elective accounting courses in the major option.
- A graduating senior must file an application for the degree with the Office of the Dean during the next-to-last semester or session and no later than the second week of classes in the semester or summer in which the degree is to be conferred.
- Students working toward the BBA degree may not enroll on a pass/fail basis in any course taught in the College of Business Administration.
- Six of the last 30 hours needed to complete the BBA degree may be taken at another university; however, the student must receive written approval from the Office of the Dean before enrolling at the other institution. Management 3400, Business Policy, may not be transferred from another institution.
- Management 3400, Business Policy, may be taken only during the semester or summer term in which the degree is to be conferred. Students should have completed the other 33 semester hours of the Business Core prior to enrolling in Management 3400.
- Non-BBA students wishing to take upper division business courses, ACCT 3201 or CIS 3225 must be advised in the College of Business, Room 101. Students wishing to take upper-division courses must have junior standing (60 credit hours) and a 2.0 cumulative GPA and must have completed the stated prerequisites for the course.
- To transfer credit for Business core courses which are taught on the junior or senior level at UT El Paso, but which are taught at the sophomore level at another institution and receive "enb" evaluation from Admissions requires validation. Validation is accomplished by passing a CLEP test (if available) or by passing a departmental challenge exam (if available). Non-core courses in Business taken at the sophomore level will be used for lower division electives only.

UNDERGRADUATE COURSE OF STUDY

The course of study for the Bachelor of Business Administration degree includes four sets of academic requirements:

Non-Business Foundation Requirements	— 54 semester hours
Business Foundation Requirements	— 12 semester hours
Business Core Requirements	— 36 semester hours
Major Option Requirements	— 30 semester hours

Total: 132

Non-Business Foundation Requirements (54 semester hours)

- 6 — ENGL 3111** and 3112* (or ESOL 3111 and 3112)
- 3 — SPCH 3101** or 3102 or 3104
- 6 — MATH 3120 and 3201*
- 6 — POSC 3110 and 3111
- 6 — HIST 3101-3102 or 3103-3104
- 3 — Natural Science: Biology, Chemistry, Geology, or Physics
- 6 — Behavioral Science: Anthropology, Cultural Geography, Sociology, or Psychology
- 6 — Humanities Electives: ART 3100, 3110 or any Art History; THEA 3113, 3290, 3357, 3358, 3491; Any sophomore or upper-division English course except Linguistics and English/Spanish translation; Any sophomore-level modern language course; Any literature or history of music; Any philosophy or religion course
- 6 — ECON 3203* and 3204*
- 6 — Non-Business Elective***

*Must be completed with a grade of C or better.

**English 6111 may be counted for ENGL 3111 and SPCH 3101.

***ENGL 3001, ENGL 3110, MATH 3105 and prerequisites for ESOL 3111 may not be counted as electives in the degree plan.

Business Foundation Requirements (12 semester hours)

- 6 — ACCT 3201* and 3202*
- 3 — CIS 3225*
- 3 — OMB 3201*

Business Core Requirements (36 semester hours)

- 3 — ACCT 3314, 3321 or 3323 (Department Specifies)
- 3 — ADMS 3308
- 3 — QMB 3301
- 3 — BLAW 3301
- 3 — CIS 3300
- 6 — MKT 3300 and 3304
- 3 — FIN 3310
- 3 — FIN 3320 or ECON 3302 or ECON 3303 (Accounting, Economics, and Finance options require FIN 3320)
- 6 — MGMT 3310 and 3321
- 3 — MGMT 3400 (taken in last semester)

Major Option Requirements (30 semester hours)

Accounting Option

- 18 — ACCT 3320, 3322, 3323, 3327, 3401, 3404;
- 3 — Elective from ACCT 3402, 3405, 3421, 3423, or 3428;
- 9 — Free Electives (6 hours must be upper-division and only 3 hours may be Accounting).

Computer Information Systems Option

- 18 — CIS 3235, 3335, 3425, 3445, 3455, and 3465;
- 3 — Elective from CIS 3315, 3452, 3462, or 3499;
- 9 — Free Electives (6 hours must be upper-division)

Economics Option

- 6 — ECON 3302 and ECON 3303;
- 12 — Electives from upper-division Economics courses;
- 9 — Free Electives (6 hours must be upper-division).

Finance Option

- General Finance Concentration
- 6 — FIN 3315 and FIN 3410;
- 9 — Electives from upper-division Finance courses;
- 3 — Accounting Elective;
- 12 — Free Electives (6 hours must be upper-division).

Commercial Banking Concentration

- 9 — FIN 3411, FIN 3412, and FIN 3418;
- 3 — Elective from FIN 3315, 3410, 3325, or 3425;
- 6 — Accounting Electives (upper-division courses);
- 12 — Free Electives (6 hours must be upper-division).

Real Estate Concentration

- 9 — FIN 3315, 3325 and 3410;
- 3 — Elective from upper-division Finance courses;
- 3 — REST 3300;
- 6 — Electives from REST 3405, 3408 or 3450;
- 9 — Free Electives (6 hours must be upper-division)

Management Option

General Management Concentration

- 9 — MGMT 3300, 3311 and 3315;
- 6 — Electives from upper-division Management courses;

- 3 — Upper-division Business elective;
- 12 — Free Electives (6 hours must be upper-division).
- Human Resource Management Concentration
- 18 — MGMT 3300, 3311, 3315, 3337, 3336, and 3403;
- 12 — Free Electives (6 hours must be upper-division).
- Production Management Concentration
- 18 — MGMT 3300, 3311, 3315, 3333, 3331 or 3336, and 3422 or 3424;
- 12 — Free Electives (6 hours must be upper-division).
- Marketing Option
- Consumer Marketing Concentration
- 12 — MKT 3301, 3302, 3495, and 3310;
- 6 — Electives from MKT 3314, 3316, 3400, 3405, 3492, or 3494;
- 12 — Free Electives (6 hours must be upper-division).
- Industrial Marketing Concentration
- 12 — MKT 3301, 3302, 3495, and 3490;
- 6 — Electives from MKT 3316, 3405, 3410, 3430, 3492 or 3494;
- 12 — Free Electives (6 hours must be upper-division).
- Marketing Management Concentration
- 12 — MKT 3301, 3302, 3495, and 3494;
- 6 — Electives from MKT 3316, 3400, 3405, 3430, 3490, or 3494;
- 12 — Free Electives (6 hours must be upper-division).
- Real Estate Concentration
- 12 — MKT 3301, 3302, 3495, and REST 3300;
- 9 — Electives from REST 3405, 3408, 3450, or BLAW 3305;
- 9 — Free Electives (6 hours must be upper-division).

Minors in Business and Economics

Students who are not majoring in Business can obtain minors in Business and Economics in four areas: General Business, Accounting, Economics and Management. Students should check with their major advisors for further details.

General Business Minor

18 hours: BLAW 3301; ACCT 3309; MKT 3300; MGMT 3310; FIN 3310; MGMT 3321. Students selecting this minor field should also enroll in ECON 3204 to fulfill the Social Science requirement and in MATH 3120, 3201, or 3280 to fulfill the Mathematics/Statistics requirement.

Accounting Minor

18 hours: ACCT 3201, 3202; CIS 3225; plus 3 courses selected from ACCT 3320, 3321, 3322, 3323, 3327, 3401, 3404, 3405, 3428.

Economics Minor

18 hours: ECON 3203; 3204; 3302 or 3303; plus 3 courses selected from ECON 3300- or 3400-level courses.

Management Minor

21 hours: ACCT 3201; ECON 3204; CIS 3225; MKT 3300; MGMT 3310; plus 2 courses selected from: MGMT 3300, 3311; QMB 3201; MATH 3120; MKT 3302, 3310, 3316.

MAJOR IN ECONOMICS IN LIBERAL ARTS

Students may obtain a B.A. degree with a major in Economics from the College of Liberal Arts. See the Department of Economics for details.

TEACHING CERTIFICATE IN SECONDARY EDUCATION

With completion of the Bachelor of Business Administration degree, a student may be certified to teach in the secondary schools. Early consultation with the Office of the Dean of the College of Business Administration and the Certification Officer in the College of Education is recommended.

PRE-LAW STUDY

The Bachelor of Business Administration is recognized as excellent preparation for the future lawyer. Students who are interested in following pre-law study should contact the advisor in the College, 747-5496.

Accounting

260 Business Administration
(915) 747-5192

CHAIRMAN: Richard G. Schroeder
PROFESSOR: Schroeder
ASSOCIATE PROFESSORS: Austin, Collier, D. Harris, Putnam, Zlatkovich
ASSISTANT PROFESSORS: M. Harris, Hoffmans, Leahey, Mann,
Mayne, Omundson, Payne

Accounting (ACCT)

For Undergraduates

3201 Principles of Accounting I (3-0)

A study of the concepts of financial accounting. The course is designed to impart to the student the inputs and outputs that produce financial statements, accounting for assets, liabilities and owners' equity.

3202 Principles of Accounting II (3-0)

A continuation of accounting principles. Study of the corporate form of the business entity, cost accounting, and the use of accounting data by management. *Prerequisite:* ACCT 3201.

3309 Survey of Accounting Principles, Techniques and Concepts (3-0)

A non-technical approach to accounting with emphasis on the use and interpretation of financial statements, cost behavior and analysis of cost accounting reports, budgeting and variances from budgets. (Open only to non-BBA students).

3311 Income Tax Planning and Control (3-0)

A study of the basic concepts of federal income tax that are applicable to all taxpayers with emphasis upon planning and control. For non-accounting majors. 3311 and 3327 may not both be counted for credit. *Prerequisite:* ACCT 3202.

3314 Management Accounting (3-0)

Product costing systems, planning and control systems, and the use of accounting data in management decisions. May not be counted by accounting majors toward degree requirements. *Prerequisite:* ACCT 3202.

3320 Accounting Systems (3-0)

Analysis of fundamental accounting systems. Emphasis on systems design, relationship of system and organization, objectives, policies, procedures, and plans. *Prerequisites:* ACCT 3321 and CIS 3300.

3321 Intermediate Accounting I (3-0)

An in-depth study of accounting principles, concepts, and alternate accounting methods. A critical review of financial statements with emphasis on the asset accounts and related nominal accounts. *Prerequisites:* CIS 3300 (or concurrent registration), and ACCT 3202.

3322 Intermediate Accounting II (3-0)

A study of current, non-current, and contingent liabilities and owners' equity accounts. Preparation of statement changes in financial position. *Prerequisites:* ACCT 3320 (or concurrent registration), and ACCT 3321.

3323 Cost Accounting (3-0)

A study of cost accounting procedures with emphasis on the basic theory and procedures of allocating materials, labor, and manufacturing expenses in job order and process cost systems. Determination of standard costs, budgetary controls, variance analysis, and cost and profit analysis for management decision-making. *Prerequisite:* ACCT 3202.

3327 Federal Income Tax--Individuals (3-0)

A comprehensive explanation of the Internal Revenue Code and Regulations as they pertain to individuals. The tax principles are applied to problems and the preparation of the individual tax return. For accounting majors. Accounting 3327 and 3311 may not both be counted for credit. *Prerequisite:* ACCT 3202.

3404 Auditing Principles and Procedures (3-0)

A study of auditing reports, standards and procedures; verification of balance sheet and related nominal accounts in the framework of generally accepted accounting principles. *Prerequisites:* ACCT 3320 and ACCT 3322.

3491 Law for Accountants (3-0)

A study of the Uniform Commercial Code as related to accountants and study of the legal principles of agency, partnerships, and corporations, including security regulations. *Prerequisites:* BLAW 3301 and ACCT 3322.

3496 Internship (3-0)

A practicum in accounting under the supervision of accounting practitioners. *Prerequisites:* Permission of the instructor and 3.0 GPA in accounting courses.

3498 Independent Study in Accounting (3-0)

Prerequisites: ACCT 3320 and approval of instructor required.

3499 Current Concepts in Accounting (3-0)

Topic to be announced. This course may be repeated for additional credit as topics are changed. *Prerequisites:* ACCT 3320 and instructor's permission.

For Undergraduates and Graduates

3401 Advanced Accounting I (3-0)

A study of special problems of partnership accounting and consolidation. Also introductions to international accounting and not for profit accounting. *Prerequisites:* ACCT 3320 and ACCT 3322.

3402 Advanced Accounting II (3-0)

The role of the Securities and Exchange Commission and the Financial Accounting Standards Board in setting standards. Contemporary problems in accounting. *Prerequisites:* ACCT 3320 and ACCT 3322.

3405 Not-for-Profit Accounting (3-0)

Application of accounting principles to selected governmental and other not-for-profit organizations, including state and local governments, universities, hospitals and others. *Prerequisites:* ACCT 3320 and ACCT 3322.

3421 Advanced Cost Accounting (3-0)

Theoretical issues of process and standard costing, performance measurement and capital budgeting, quantitative techniques, and other selected topics. *Prerequisites:* ACCT 3320 and ACCT 3323.

3423 Issues in Auditing (3-0)

A comprehensive coverage of Statements on Auditing Standards and applications in the Securities and Exchange Commission environment. *Prerequisite:* ACCT 3404.

3425 International Accounting (3-0)

Study of accounting applications pertinent to U.S. firms and individuals involved in foreign business activity. *Prerequisite:* Nine hours of accounting.

3428 Federal Income Tax — Partnerships and Corporations (3-0)

A comprehensive explanation of the Internal Revenue Code and Regulations as they pertain to partnerships and corporations including problems and preparation of tax returns. Analysis of federal gift, estate, and inheritance tax structure. *Prerequisites:* ACCT 3320 and ACCT 3327.

Economics and Finance

236 Business Administration
(915) 747-5245

CHAIRMAN: Timothy P. Roth
PROFESSORS EMERITI: Philip Duriez, Paul E. Fenlon, Paul D. Zook
PROFESSORS: Herbst, James, Roth
ASSOCIATE PROFESSORS: Brannon, Brown-Collier, Schauer, Smith,
Sprinkle, Tollen
ASSISTANT PROFESSORS: Holcomb, Johnson
INSTRUCTOR: Barker

ECONOMICS

B.A. DEGREE — Specific requirements for the economics major are: Economics 3204, 3302, 3303, twelve additional hours of economics; Finance 3320; Mathematics 3201; and a statistics course offered by either the College of Business Administration or the Department of Mathematical Sciences. Students majoring in Economics and minor-ing in Business may not take free electives in the College of Business Administration.

General Prerequisite: Junior standing for all 3300 or 3400 level courses.

Economics (ECON)

For Undergraduates

3203 Principles of Economics (3-0)

A survey of the basic principles of economics designed to give a broad understanding of the economy; primary attention is given to aggregate problems and issues considered of particular importance to the nation.

3204 Principles of Economics (3-0)

A continuation of basic economic principles designed to provide an analytical understanding of markets, prices and production.

3302 Intermediate Macroeconomic Theory (3-0)

A study of national income accounting and theory; emphasis is placed on the classification and analysis of conventional spending sectors and their effect on income and employment; a critical survey of policy applications that affect the level of income and employment. *Prerequisites:* ECON 3203 and MATH 3120 or MATH 4110.

3303 Intermediate Microeconomic Theory (3-0)

A study of cost, demand, and price theory; the concepts, assumptions, and policy implications of aspects of particular equilibrium and general equilibrium theory; a critical survey of various concepts of the scope, methods, and approaches to economics. *Prerequisite:* ECON 3204.

3351 Industrial Organization and Government Policy (3-0)

A study of the impact of government policy on the economy, emphasizing effects of governmental regulation on manufacturing and service industries, public utilities, and other segments of the economy. *Prerequisite:* ECON 3204.

3366 Economics of Latin America (3-0)

Considers economic theory and current problems of monetary and fiscal policy, regional economic integration, land reform, export patterns, and industrialization. The emphasis is institutional rather than analytical.

3367 Economic Development (3-0)

A course concerned with problems of economic growth in the less developed countries. Consideration is given to patterns and problems of human and material resource utilization, capital formation, investment criteria, inflation, and the development of innovative techniques. Emphasis is placed on the application of analytical concepts to the problems of economic development.

3372 Mathematical Economics (3-0)

Basic concepts and operations of mathematical logic and their application to economic analysis. *Prerequisites:* ECON 3203 and 3204.

3373 Introduction to Econometrics (3-0)

An introductory course designed to acquaint the student with the basic concepts employed in model building, with different types of economic models, with problems and techniques of quantifying models, and with the use of such models for public and business policy. *Prerequisites:* ECON 3203 and 3204.

3380 History of Economic Thought (3-0)

A study of the development of principal economic doctrines and schools of economic thought. *Prerequisites:* ECON 3203 and 3204.

3425 International Economics (3-0)

Principal theories of international trade; foreign exchange markets, international capital flows, barriers to trade, international economic institutions, and the economics of regional trade integration. *Prerequisites:* ECON 3203 and 3204.

3498 Independent Study in Economics (3-0)

Consent of instructor required.

3499 Current Topics in Economics (3-0)

May be repeated for credit when topics vary. *Prerequisite:* Consent of instructor.

For Undergraduates and Graduates

3401 Economic History of the United States (3-0)

Survey of American economic development from colonial time to present; analyses of factors which have shaped the development.

3430 Public Sector Economics (3-0)

Financial administration by agencies of local, state, and federal government; principles of taxation; sales, property, income, and inheritance taxes; analysis of government expenditures and the public credit. *Prerequisite:* ECON 3203 and 3204.

3434 Regional Economics (3-0)

Location theory, factors influencing regional growth, and techniques of analysis. Description of economic regions and analysis of interaction among economic regions. *Prerequisite:* ECON 3203.

3435 Urban Economics (3-0)

Investigation of economic forces in American urban and metropolitan areas. Topics examined include labor market analysis, the local public economy, urban economic growth, location theory and land use analogies. *Prerequisite:* ECON 3203.

3440 Economics of Labor (3-0)

A study of the basic principles, historical background and characteristics of labor markets; theories of wages, wage structures, collective bargaining and the role of government in labor problems. *Prerequisite:* ECON 3204.

3468 Economy of Mexico (3-0)

A survey of the growth and change of the Mexican economy. Emphasis is placed on the description and analysis of recent and current economic policy.

3490 Comparative Economic Systems (3-0)

Economic foundations of the capitalistic and other systems; economic attributes of fascism, socialism, communism, and capitalism.

3492 The Soviet Economy (3-0)

Analysis of the structure of the Soviet economy, including a survey of economic development since the revolution.

Finance (FIN)

For Undergraduates

3310 Business Finance (3-0)

Sources and applications of funds by corporations. Management and financing of current assets; the sources and uses of short-, intermediate-, and long-term funds. Study of capital budgeting, capital structure, dividend policy, and the problems peculiar to financing new business ventures. *Prerequisite:* ACCT 3201 or consent of instructor.

3315 Investments (3-0)

Introduction to the analysis of investment media, means of purchasing and selling securities, and personal investment decision-making. Emphasis is given to determinants of growth, safety, and income and to problems involved in achieving objectives. *Prerequisite:* FIN 3310.

3320 Money and Banking (3-0)

A description of the history and present characteristics of the money and banking structure of the United States. Special emphasis is placed on monetary policy as it affects the level of economic activity. *Prerequisites:* ECON 3203 and junior standing.

3325 Money and Capital Markets (3-0)

Analysis of the instruments and institutions of the money and capital markets and emphasis on the roles of these markets in the economy. *Prerequisite:* FIN 3320.

3410 Managerial Finance (3-0)

The development and utilization of financial plans, policies and practices in business enterprises. Particular emphasis is given to illustrative problems and cases. *Prerequisite:* FIN 3310.

3415 Investment Management and Security Markets (3-0)

A study of investment management policies for individuals and institutions and the operation of organized security exchanges and the over-the-counter market. *Prerequisite:* FIN 3315.

3420 Monetary Theory (3-0)

An analysis and critique of current monetary theories and their development from classical roots. Emphasis is placed on the relationship between the theories and their policy implications. *Prerequisite:* FIN 3320.

3425 International Finance (3-0)

A study of international monetary problems, financing of the flow of goods and services among nations, and balance of payments considerations. *Prerequisite:* FIN 3320.

3498 Independent Study in Finance (3-0)

Consent of instructor required.

3499 Current Topics in Finance (3-0)

May be repeated for credit when topics vary. *Prerequisite:* Consent of instructor.

For Undergraduates and Graduates

3411 Commercial Bank Management (3-0)

The theory and practice of bank asset and liability management in the context of a liquidity-profitability conflict. *Prerequisites:* FIN 3310 and 3320.

3412 Current Issues in Banking (3-0)

An analysis of current problems in commercial banking from the points of view of the banks, their regulators, and the public. *Prerequisite:* FIN 3411 or consent of instructor.

3418 Financial Statement Analysis (3-0)

An inquiry into the techniques of analysis of financial statements as an aid to extraction and evaluation of information for interpretation and decision-making by lenders, investors, and others. *Prerequisite:* FIN 3310.

3428 Central Banking (3-0)

A study of the history, economic functions, operating techniques, and policies of central banks. Emphasis is given to concurrent problems of monetary policy and control. *Prerequisite:* FIN 3320.

Management

205 Business Administration
(915) 747-5496

CHAIRMAN: Bruce M. Woodworth

PROFESSOR: George

ASSOCIATE PROFESSORS: Ibarreche, Mahmood, Martin, Woodworth

ASSISTANT PROFESSORS: Case, Chao, Gemoets, Hoffman, Lackey,

Lind, Salome, Trevino, Wilhelm

INSTRUCTOR: McCrae

Business Law (BLAW)

For Undergraduates

3301 Legal Environment of Business (3-0)

Designed to introduce the student to the legal environment in which business decisions are made.

3303 Uniform Commercial Code (3-0)

Study of the provisions of the Uniform Commercial Code as they apply to sales, bailments, negotiable instruments and secured transactions. *Prerequisite:* BLAW 3301.

3304 Law of Business Association (3-0)

An intensive examination of the law of partnership, corporations, and government regulation of business. *Prerequisite:* BLAW 3301.

3305 Real Estate Law (3-0)

Fundamentals of law as applied to real estate. Real estate contracts, sale, lease, sale-leaseback, mortgages, real estate syndications. Detailed analysis of real estate licensing act and other laws related to real estate transactions. Real estate laws involving real estate operations with other states. Relevant laws and contracts related to management of properties, loans, and financial transactions. *Prerequisite:* Consent of instructor.

3498 Independent Study in Business Law (3-0)

Prior approval of instructor required.

3499 Current Topics in Business Law (3-0)

May be repeated when topics vary. Prior approval of instructor required.

For Undergraduates and Graduates

3425 International Business Law (3-0)

Legal environments in which international business operates; litigation and arbitration of international disputes; transfer of capital and technology regulations; impact of antitrust and taxation laws on international business transactions; legal structure and powers of overseas business organizations; patent, trademarks and copyright aspects of international business transactions. *Prerequisite:* BLAW 3301 or permission of instructor.

Computer Information Systems (CIS)

For Undergraduates

3225 Introduction to Information Systems (3-0)

A study of management information systems including their design, development, implementation, and maintenance. An overview of computer hardware fundamentals and software development; evaluation of data base management systems, office automation systems, and telecommunications systems; the essentials of computer problem solving and programming using ANSI BASIC.

3235 COBOL Programming (3-0)

This course introduces the student to programming in the most widely used computer language, COBOL. Emphasis will be on good programming practice, following structured program design, development, testing, implementation and documentation of business problems. *Prerequisite:* CIS 3225.

3300 Business Computer Applications (3-0)

This course gives the student hands-on training and experience in using commercial computer software packages commonly found in business. Work will be primarily based on business analysis using Lotus 1-2-3 to perform financial, marketing and production control modeling. *Prerequisite:* CIS 3225.

3315 RPG Programming (3-0)

RPG, Report Program Generator, is a widely used computer language, particularly among mid-sized systems for creating and formatting business reports. As a non-procedural language, it permits the programmer to give the specifications for a problem and lets the software generate the program. *Prerequisite:* CIS 3225.

3335 Advanced COBOL Programming (3-0)

All advanced features of COBOL programming language are examined including analysis of sequential, indexed, relative, and direct access file processing systems. Also covered are sort and merge techniques, table processing, utilities, report writer features, core dump analyses and ABEND debugging. Emphasis is placed on writing structured programs using available structured programming tools and techniques. *Prerequisite:* CIS 3235.

3496 Internship in Computer Information Systems (3-0)

To be arranged with the prior approval of the instructor and the department chairman.

3498 Independent Study in Computer Information Systems (3-0)

The student studies a topic as a semester-long project. The project may be independent library research or even a work-related task. The student must have the topic approved by the department chairman and have a schedule to report progress with the instructor before work commences. *Prerequisite:* CIS 3335.

3499 Current Topics in Computer Information Systems (3-0)
The topic(s) taught any semester change and may include Office Automation, Teleprocessing and Local Area Networking (LAN), and Information Systems Planning. *Prerequisite:* CIS 3335.

For Undergraduates and Graduates

3425 Business Systems Analysis (3-0)
This course surveys the tools and procedures of the systems analyst and develops the skills necessary to conduct business systems analysis. Emphasis is on the tools and techniques of current systems documentation and communication skills. *Prerequisite:* CIS 3335.

3445 Business Systems Design (3-0)
The new or modified information system is designed and specified. The CPU, secondary storage and input-output requirements are identified. Additional topics discussed are forms design, procedures specifications and the implementation schedule. *Prerequisite:* CIS 3425.

3452 Systems Control (3-0)
The emphasis of this course is management control in the data processing environment. Topics include security of hardware and software systems, computer audit techniques, the disaster audit, and legal aspects of information systems management. *Prerequisite:* CIS 3335.

3455 Business File and Data Structure (3-0)
Techniques and management of computer files on secondary storage devices, including linked lists, trees, queues, and other physical data structures. Logical data structures for data bases are examined and techniques of normalization of data tables are performed. *Prerequisite:* CIS 3335.

3462 Computer Business Decision Models (3-0)
Business computer models, simulation techniques and languages, and graphical techniques are discussed and demonstrated. Emphasis is on tools and methods of aiding management decision making. *Prerequisite:* CIS 3335.

3465 Business Data Base Management (3-0)
Normalized data base tables are designed, created and manipulated using an SQL based relational data base management system (DBMS). Common data base utilities are used and prototyping is practiced. Emphasis is placed on the problems and issues of managing in a data base environment. *Prerequisite:* CIS 3455.

Management (MGMT)

For Undergraduates

3300 Introduction to Management (3-0)
An introduction to the basic elements and theory of management including an examination of alternative managerial tools and the complex of internal and external forces impacting on managerial decisions.

3310 Introduction to Organization Behavior (3-0)
This course is designed to develop for the student a useful frame of reference for approaching human problems in the world of work. Topics include awareness of individual behavior, two-person interaction, the dynamics of group and inter-group behavior, and the effects of the total system of behavior observed within the organization.

3311 Introduction to Personnel Management (3-0)
How to effectively utilize and manage human resources in a rapidly changing environment. Topics covered include planning, staffing, appraising, compensating, training and career management, improving the work environment, and establishing and maintaining effective work relationships. All are discussed in terms of the strategic purposes of effective personnel management. *Prerequisite:* MGMT 3310.

3315 Introduction to Labor Relations (3-0)
Analysis of bargaining procedures; study of basic institutional issues in bargaining, economic related administrative clauses, strike and lockout tactics, contract administration. Preparation, negotiation, and interpretation of labor contracts. *Prerequisite:* MGMT 3311.

3320 Small Business Management (3-0)
Focuses on the analysis, operation and management of small business. Provides practical experience working with small business and entrepreneurial opportunities in the community. Investigates financial, marketing, production and administrative functions to develop overall managerial awareness and analytical skills in small business problem-solving. *Prerequisites:* MGMT 3310 and ACCT 3201.

3321 Production/Operations Management (3-0)
Production management and its relationship to marketing, finance, personnel, and accounting functions are described. Forecasting demand, aggregate planning, inventory planning and control, and scheduling provide the basis for linking strategic plans to the production plan. Other topics discussed include: quality control, product and process design, facility location and layout, job design, work measurement, productivity improvement and project management. *Prerequisite:* QMB 3201.

3331 Methods Analysis (3-0)
Methods of process analysis, methods improvement procedures, and work measurement techniques are developed to provide the basis for analyses of processes, layouts and job design in an organization. *Prerequisite:* MGMT 3321.

3333 Production Control (3-0)
Material planning and control systems utilizing material requirements planning (MRP) techniques are emphasized. Production planning, master production scheduling, MRP, capacity requirements planning and shop floor control techniques are examined from both conceptual and practical standpoint. *Prerequisite:* MGMT 3321.

3336 Inventory and Materials Management (3-0)
Objectives, principles and methods in managing the flow and inventory of materials. Special attention to problems encountered in receiving, storing, and disbursing. A major effort is devoted to computer packages designed for inventory control. *Prerequisite:* MGMT 3321.

3337 Compensation and Employee Benefits (3-0)
This course examines the goals of the organization in the employment of human resources and its use of reward systems in the motivation of goal-oriented behavior. Topics included are job evaluation systems, merit pay, and employee benefits. Legal aspects of pay administration such as wage and hour laws and the Employee Retirement Income Security Act will be covered. *Prerequisite:* MGMT 3311.

3338 Arbitration and Negotiation (3-0)
Grievance procedures and arbitration as the terminal step in the grievance process. Analysis of industrial common law. Ramifications of the collective bargaining process are considered in connection with the rights of management in directing the work force and the rights of employees as expressed in the collective bargaining agreement. Selected cases involving such issues as technological change, job assignments, wage structures, and production standards will be utilized. *Prerequisites:* MGMT 3311 and 3315.

3400 Business Policy (3-0)
Integration of accounting, business law, finance, personnel and production management, and marketing backgrounds in the solution of top management problems. Computer simulated business operation and administration. Student placement with cooperating firms to receive on-the-job training in management. *Prerequisite:* Graduating Seniors only.

3403 Advanced Personnel Management (3-0)
Major concepts and important current problems in human resource management. Course may be an intensive reading and research seminar or a group project course either of which will involve completion of a major project on a significant subject in the field. *Prerequisite:* MGMT 3311.

3424 Production Policy (3-0)
Through case study a foundation is developed from which to assess, evaluate, and recommend management action for on-going operations. The cases address strategic issues of operations management, as well as process, planning and control, and workforce management decisions in operations. *Prerequisites:* MGMT 3311

and 3321, plus a minimum of three hours from MGMT 3331, 3333 or 3336.

3496 Internship in Management (3-0)

To be arranged with the prior approval of the instructor and the department chairman.

3498 Independent Study in Management (3-0)

With prior approval of the instructor.

3499 Current Topics in Management (3-0)

Topics to be announced. This course may be repeated for credit as topics are changed. *Prerequisite:* Consent of instructor.

For Undergraduates and Graduates

3422 Production Systems (3-0)

The application of systems theory to the operations of organizations through planning, analysis and implementation. The basic tools of systems analysis, organizational systems design, and simulation techniques are described and applied to the design of operations of modern organizations. *Prerequisites:* MGMT 3311 and 3321, MGMT 3331 or 3336, ACCT 3323.

3425 International Management (3-0)

A study of the differences in managerial processes in organizations having international operations with an emphasis on traditional managerial activities. It is a cross-cultural approach to the study of management using the United States as a point of reference. *Prerequisite:* MGMT 3300 and 3310.

Quantitative Methods in Business (QMB)

For Undergraduates

3201 Fundamentals of Business Statistics (3-0)

Introduction to statistical techniques as applied to business data. Included are descriptive statistics, measures of location and variation, probability distributions, time series, regression and correlational analysis. A major effort is devoted to computerized solution techniques to provide managerial information. *Prerequisite:* MATH 3120 or 4111.

3301 Quantitative Methods in Business (3-0)

Introduction to quantitative methods applied to business decision making. These methods include linear, integer, and goal programming, network analysis, transportation LP, risk analysis, and simulation. A major effort is devoted to computerized solution techniques to provide managerial information. *Prerequisite:* QMB 3201.

3498 Independent Study in Business Statistics (3-0)

Prior approval of instructor required.

3499 Current Topics in Business Statistics (3-0)

May be repeated when topics vary. Consent of instructor required.

For Undergraduates and Graduates

3450 Statistical Survey Techniques (3-0)

Building of econometric models and advanced time series analysis in measuring trends and fluctuations in business and economics; mathematical programming and the analysis of business series; input-output analysis. Analysis of inter-industry relationships.

3460 Regional Analysis, Methods and Principles Seminar (3-0)

Quantitative and mathematical approach to the analysis of regional economics; construction of regional economic models, and methods of regional analysis. Some case studies and class projects for the El Paso area.

Marketing

230 Business Administration
(915) 747-5185

CHAIRMAN: J. Robert Foster
PROFESSORS EMERITI: Lola B. Dawkins, Wade J. Hartrick
PROFESSORS: Foster, Hasty
ASSOCIATE PROFESSORS: English, Michie, Palmore, Sullivan
ASSISTANT PROFESSORS: Gifford, Tate

THE UNIVERSITY OF TEXAS AT EL PASO

Administrative Services (ADMS)

For Undergraduates

3308 Business Communications (3-0)

Development of clear, persuasive writing skill through intensive application of communication principles. Classroom discussion is supplemented by supervised practice in the composition of business letters, memos, and reports.

For Undergraduates and Graduates

3499 Business Education Seminar (3-0)

Evaluation of methodology and materials used in teaching business subjects. The place of business education in general education. Offered Fall semester.

Marketing (MKT)

For Undergraduates

3300 Principles of Marketing (3-0)

A description and analysis of the ways in which goods move to points of consumption. Topics studied include functions, institutions, the marketing environment, markets, and government regulation. *Prerequisites:* ACCT 3201 and junior standing.

3301 Marketing Research (3-0)

Scientific methods of analysis and statistical techniques are employed in solving marketing problems. Emphasis on collection of information from internal and external sources; analysis, interpretation, and presentation of research findings. *Prerequisites:* QMB 3201 and MKT 3300.

3302 Buyer Behavior (3-0)

This course emphasizes the psychological and sociological aspects of both industrial and consumer buyer behavior. Topics range from basic motivation and learning theory to group dynamics with applications to the formulation of marketing strategy. *Prerequisite:* MKT 3300.

3304 Social Responsibility and the Business Environment (3-0)

The student correlates the objectives of business firms with those of the society as a whole, analyzes the interrelationships of business resources and examines the management process of marshalling and utilizing resources to attain desired objectives within the social, ethical, and international environmental constraints and opportunities.

3310 Principles of Retailing (3-0)

Analysis of retail store management including personnel requirements and career opportunities with emphasis on modern methods in buying, receiving, pricing, merchandise and financial control, sales promotion and customer service. *Prerequisite:* MKT 3300.

3314 Marketing of Services (3-0)

An analysis of the service economy and the use of marketing in promoting financial, entertainment, lodging and business services. Considers the unique characteristics of services in developing marketing strategy targeted for business and private consumers. *Prerequisite:* MKT 3300.

3316 Professional Sales (3-0)

This course delineates the role personal, persuasive communications play in our society, our daily lives, and in the marketing programs of both business and non-business organizations, and presents the principles of effective personal, industrial and institutional selling. *Prerequisite:* MKT 3300.

3400 Advertising Management (3-0)

An introduction to mass media promotion. Emphasis is given to media selection, budgeting and evaluation of advertising campaigns. *Prerequisites:* MKT 3300 and MKT 3302.

3405 Sales Promotion Management (3-0)

A study of sales promotion activities designed to appeal to channel intermediaries and consumers. Specific attention is given to couponing, demonstrations, contests, sweepstakes and point-of-purchase promotion. *Prerequisite:* MKT 3300.

3430 Sales Management (3-0)

The selection and administration of the sales force; determination of marketing policies; and the planning, coordination, and control of all promotional activities. *Prerequisite:* MKT 3300.

3490 Industrial Marketing (3-0)

This course distinguishes organizational markets from consumer markets. Emphasis is placed upon the characteristic features of industrial and institutional demands that set the environment within which the industrial marketer must cope. *Prerequisite:* MKT 3300, permission of the instructor, or graduate standing.

3493 Comparative Marketing Systems (3-0)

An evaluation of marketing as it is applied internationally. Differences in definition, application, performance and evaluation of marketing are covered. *Prerequisite:* MKT 3300.

3495 Strategic Marketing Management (3-0)

An integrating course in marketing, systematically oriented with emphasis on the marketing mix, and special attention to market analysis, marketing information, and sales forecasting. *Prerequisites:* MKT 3300 and nine additional hours of marketing courses.

3496 Marketing Internship (3-0)

A course designed to give a business major practical work experience. *Prerequisites:* MKT 3300 plus three hours of marketing courses listed 3301 or above; consent of instructor.

3498 Independent Study in Marketing (3-0)

Individualized instruction into a particular issue in marketing. The nature and scope of the study is arranged with a faculty person.

3499 Current Topics in Marketing (3-0)

Topics to be announced. This course may be repeated for credit as topics are changed. *Prerequisite:* Consent of instructor.

For Undergraduates and Graduates

3410 Distribution Logistics (3-0)

Provides a functional knowledge of transportation and distribution systems capable of introducing change or reacting to change in the economic system. Emphasis upon the functional analysis of carriers, distribution system alternatives, spatial arrangements of markets, and selection of physical movement channels in accordance with emerging regional and national programs. *Prerequisite:* MKT 3300.

3425 International Marketing (3-0)

Emphasis is given international marketing from the viewpoint of the marketing manager who must recognize differences in market arrangement, and in legal, cultural, and economic factors in different countries. Areas covered include planning and organizing for international operations, interrelationships with other functions, product strategy, pricing promotion, channels and financial aspects of international marketing. *Prerequisite:* MKT 3300.

3450 Export and Import Marketing (3-0)

An overview of export and import policies, instruction, documentation and practices nationally and internationally. Application is demonstrated by the exportation of product from one country and the importation of that product into another country. *Prerequisite:* MKT 3425.

3492 Product and Price Management (3-0)

A managerial approach to the issues of product innovation, development, commercialization and abandonment. Specific emphasis is given to the product life cycle, product portfolio analysis, and price administration and determination. *Prerequisites:* MKT 3300 and MKT 3302.

3494 Marketing Channels (3-0)

An examination of the decision variables confronting the management of vertical marketing channel structures which link production and consumption. Emphasis will be placed on application of behavioral and analytical techniques which aid decision-making in an interorganizational context. *Prerequisite:* MKT 3300.

Real Estate (REST)

For Undergraduates

3300 Real Estate Principles (3-0)

Theory of supply and demand for real estate, the housing market structure, the equity and mortgage markets, and development and significance of private and governmental institutions financing real estate and the role of credit in real estate markets. *Prerequisite:* Junior standing; consent of instructor.

3304 Insurance Planning (3-0)

Insurance as it applies to the average citizen, with emphasis on general principles, types of policies available, fitting policies to needs, and cost to policyholders. *Prerequisite:* Junior standing or consent of instructor.

3408 Real Estate Appraisal I (3-0)

The theory and practice of property evaluation, cost estimation, investment earnings forecasts, principles and technology. Introduces the fundamentals of appraisal including the three methods of appraisal with emphasis on residential and income property appraisal. *Prerequisite:* REST 3300, consent of instructor.

3415 Real Estate Property Management (3-0)

The course will be an in-depth study of the administration of vacant land, residential and commercial-occupied properties. Specifically, the course will deal with land use and tenant markets, contracts, property assessment and taxation, insurance operating expenses and reporting procedures. *Prerequisite:* REST 3300, consent of instructor.

3450 Real Estate Feasibility Analysis (3-0)

A capstone application of real estate feasibility. Emphasis will be placed on the estimation of demand, revenue, development, and operating costs and investment criteria. These data will be integrated into investment decisions and reports. *Prerequisites:* REST 3300, consent of instructor.

3496 Internship in Real Estate

A course designed to give a business major practical work experience. *Prerequisites:* REST 3300 plus three hours of real estate courses listed 3400 or above; consent of instructor.

3498 Independent Study in Real Estate (3-0)

Prerequisite: REST 3300, consent of instructor.

3499 Current Topics in Real Estate (3-0)

May be repeated for credit when topics vary. *Prerequisite:* REST 3300, consent of instructor.

For Undergraduates and Graduates

3405 Real Estate Finance (3-0)

Principles and methods of financing real estate; kinds, sources, costs, and uses of funds; analysis of the mortgage market; and the role of various financing institutions, both private and governmental. *Prerequisite:* REST 3300.

3410 Real Estate Marketing (3-0)

A study in brokerage activities and management. The course will focus on the role of the buyer in residential and commercial transactions including buyer decision behavior, bases of market segmentation and after-sale service. In addition, the course will include buyer prospecting, effective closing strategies, title recording, real estate promotion, salesperson/broker-client relationships, and brokerage management. *Prerequisites:* MKT 3300 and REST 3300.





Early Childhood Studies
Elementary and Secondary Education Studies
Kinesiology, Health and Sports Studies
Counseling and Special Education Studies
Educational Administration and Policy Studies

Jon M. Englehardt, Dean
Richard W. Burns, Associate Dean
Josefina V. Tinajero, Assistant Dean
Education Building 414
(915) 747-5572

The College of
EDUCATION

Introduction

The College of Education has as its mission the preparation of professionals and attention to the problems and opportunities associated with schools and other youth serving agencies, especially those in multicultural communities.

At the undergraduate level, the College offers programs aimed primarily at providing qualified students an opportunity to attain knowledge and skills needed to enter the teaching profession. The College maintains close ties with the practicing teaching profession through participation in the local Teacher Center and active participation by the faculty in area schools. Teacher preparation programs of the College are endorsed by the local teaching profession and are accredited by both the Texas Education Agency (TEA) and the National Council for Accreditation of Teacher Education (NCATE).

Collegiate programs are administratively offered through five Program Areas: Early Childhood Studies; Elementary and Secondary Education Studies; Kinesiology, Health, and Sports Studies; Counseling and Special Education Studies; and Educational Administration and Policy Studies.

Instructional Facilities

The College of Education is housed in a modern building with excellent classrooms and laboratory facilities. The College administrative offices are located on the fourth floor; program area and faculty offices are on the fifth through ninth floors.

In order to bridge the gap between course presentations and field applications, the College both requires practicum experiences in actual classroom situations and utilizes a variety of laboratories and clinical facilities where students are offered hands-on experiences under controlled or simulated conditions. These facilities include the Reading Center, Bilingual and Special Education Centers, Science, Mathematics and Physical Education Laboratories, two computer laboratories and a new Teaching Resource Center.

Undergraduate Degrees and Certificates

The College offers a Bachelor of Science in Education degree with specializations in Elementary Education, Secondary Education, and All Levels Physical Education. Students who complete the Bachelor of Science in Education are eligible for Texas teacher certification. The College also offers programs leading to Texas teacher certification for students who are working toward or who have completed a bachelor's degree outside the College of Education.

For students planning to graduate Fall 1991 or after, new programs are being designed which will require that students enroll in a degree program other than the Bachelor of Science in Education degree. Such students should consult with the College of Education or the University Academic Advising Center. The programmatic information that follows pertains to the Bachelor of Science in Education degree program; since Texas legislation is involved, it is imperative that the following information be followed only by students who will graduate by Fall 1991.

Admission to Teacher Education Programs

In order to enroll for courses in the Professional Studies area students must be admitted to a teacher education program. To be admitted they must complete the following:

- English 3111-3112 and Speech 3101 or English 6111-3112 with grade of C or better in each course.
- Teacher Education 1201 with a grade of S.
- the Pre-Professional Skills Test (P-PST) or the Texas Academic Skills Program (TASP) with passing scores. These tests measure basic skills in Reading, Mathematics and Writing. To apply, contact the Testing Center, 103 West Union.
- 45 semester hours of college work with a cumulative GPA of at least 2.0
- a degree and/or certification plan.

Until they are admitted to a teacher education program, students will be classified as Pre-Education majors.

Field Experiences and Student Teaching

Field experiences are opportunities to observe and work with children in actual classroom settings and are required as part of some courses. During field experiences, students are able to apply the skills taught in the program and work with master teachers who evaluate their performance. Students must complete a minimum of 45 clock hours of field experiences in the schools as a prerequisite to student teaching.

Student teaching consists of teaching all day, five days per week, in an accredited school for one full semester at the appropriate level of certification. It is the culminating experience in the teacher preparation program in which the competence of the candidate is evaluated by a University supervisor and a master teacher.

The deadline for student teaching applications is May 1 for the Fall semester, and October 1 for the Spring semester. Student teaching is not available in the Summer session. Placement is not guaranteed for applications received after the deadline. Student teaching prerequisites are:

- admission to a teacher education program.
- completion of three-fourths of the courses in the Teaching Field(s) with a GPA of at least 2.5 in each area.
- completion of three-fourths of the following courses in the Professional Studies area with a GPA of at least 2.5:
 - Elementary: EDPC 3301 and 3402; ELED 3302, 3303, 3304, 3306, 3405, 3307; SPED 3425
 - Secondary: EDPC 3301, SCED 3311, 3317, 2310 and an appropriate methods course; RED 3342; SPED 3425
 - All Levels Physical Education-Elementary: EDPC 3301; ELED 3303, 3304, 3306, 3307, 3405; RED 3340 and 3441; PE 3320, 3414, 3303
 - All Levels Physical Education-Secondary: EDPC 3301; SCED 3311 and 3317; PE 3414; PE 3304 or SCED 3467 and/or 3468 if science or mathematics is the second teaching field
 - All Levels Art: EDPC 3301; SPED 3425; ELED 3302, 3307
 - All Levels Art-Elementary: EDPC 3301; ELED 3302, 3303, 3304, 3306, 3405; RED 3340; SPED 3425; ELED 3307, 3406; RED 3441
 - All Levels Music: EDPC 3301; SPED 3425; SCED 3317; RED 3340 or 3442; ELED 3302
 - All Levels Speech, Hearing and Language Disorders: EDPC 3301; SPED 3425; SCED 3317; RED 3340

The maximum University course load while student teaching is 15 semester hours, which includes 9 semester hours of Student Teaching.

Application for Graduation and/or Certification

Students must apply for graduation and/or certification during the first two weeks of the semester in which they intend to complete the program. The fees are: \$15 for graduation and \$20 for Texas certification. Students must register for and pass State certification exit tests (ExCET) during their last semester of course work.

In order to graduate and/or be recommended for certification a student must:

- complete the courses listed in the degree plan (a minimum of 131 semester hours is required) with an overall GPA of at least 2.0 and a grade of C or better in freshman English and Speech.
- have a 2.5 GPA or better in each teaching field, endorsement and Professional Studies area.
- for initial Texas certification all applicants must provide proof of U.S. citizenship or proof of intent to become a U.S. citizen.

Bachelor of Science in Education: Elementary Education

- I. GENERAL REQUIREMENTS (59 semester hours) The following courses do not reflect departmental prerequisites. Communication Arts: ENGL 3111 (or 6111), 3112, 3303, 3454; SPCH 3101 (except when ENGL 6111 is taken). Social Sciences: HIST 3101,

3102; POSC 3110, 3111; GEOG 3110. Mathematics/Science: MATH 3120, 3203; EDEC 3210; BIOL 3105; GEOL 3103; PSCI 3101. Electives: ARTE 3311; SPAN 4102 for non-natives or SPAN 4104 for native speakers; 3 hours of children's literature or Theatre Arts. Education: TED 1201.

- II. TEACHING FIELD AND COMBINATION SUBJECTS (36-45 semester hours) A Teaching Field from the following list and, in addition, complete the following Combination Subjects: RED 3340, 3441; ELED 3406; MUSE 3334; HE 3302; PE 3318 or 3320.
- III. PROFESSIONAL STUDIES (27 semester hours) EDPC 3301, 3402; SPED 3425; ELED 3302, 3303, 3304, 3306, 3307, 3405
- IV. Student Teaching TED 9490 (9 semester hours)

Total: 131-137 semester hours

TEACHING FIELDS IN ELEMENTARY EDUCATION

The student must select one field and should consult an advisor for scheduling of courses.

1. Art: ART 3100; ARTF 3101, 3102; ARTE 3312, 3322, 3421 18
2. Bilingual Education: BED 3438, 3430, 3434, 3435, 3436; LING 3308, 3472; SPAN 3309; plus 3 hours from HIST 3309, 3343 or ENGL 3374, 3310 (must take 3200 level Spanish in lieu of Spanish 4102) 27
3. Biological Sciences: BIOL 3106, 1107, 1108, 3216, 3318, 1319, 3320, 3321 18
4. Early Childhood Education: ECED 3350, 3451, 3452, 3454, 3455; SOCI 3349, HE 3202; plus 3 hours from ENGL 3305, THEA 3350, BED 3436, TED 3450 24 (must take PE 3318 under combination subjects)
5. Earth Science: GEOL 3104, 3304, 3305, 3350, plus 3 hours of Geology and GEOG 3306 18
6. English: 6 hours of 3200-level literature and genre; ENGL 3365; plus 9 hours from ENGL 3311, 3312 3343, 3344, 3417, 3418, 3419, 3422, 3425 18
7. French: FREN 3201, 3202, 3305, 3355, 3357, 3401 18
8. Generic Special Education: SPED 3310, 3333, 3334, 3440, 3479; EDPC 3320; SHLD 3210 or 3315; PE 3414 24
9. German: GERM 3201, 3202, 3357, 3401; plus 6 advanced hours 18
10. History: HIST 3201, 3202, 3317, 3309 or 3328; plus 6 advanced hours 18
11. Life/Earth Sciences: GEOL 3104, 3304, 3305, 3350 (or GEOG 3306); BIOL 3106, 1107, 1108, 3216, 1217; plus 3 advanced hours in biology other than 3490, 3498 24
12. Mathematics: MATH 4110, 3203, 3280, 3300, 3303, 3304 19
13. Physical Education: PE 3318, 3411, 3408, plus 3 hours in PE skills, and 6 hours from: PE 3207, 3208, 3209, 3210, 3321 18 (must take PE 3320 under Combination Subjects and PE 3414 in lieu of SPED 3425)
14. Physical Science: CHEM 4107, 4108; ASTR 3107; PHYS 2343 twice, 2446 twice, 3475, plus 3 advanced hours in Chemistry or Physics 25
15. Reading: RED 3342; 3443; 3446 or 3447; ECED 3455; BED 3437; plus 3 hours from RED 3444, 3445, LING 3220 18 (must take ENGL 3305 under Electives)
16. Social Studies: GEOL 3466; ECON 3203, 3204; POSC 3327, 3341; HIST 3201, 3202, 3317 24 (SOCI 3101 is strongly recommended)
17. Spanish: — non-native speakers — SPAN 3201, 3202, 3355, 3357, 3309; plus 3 advanced hours 18 Spanish: — native speakers — SPAN 3203, 3204, 3356, 3357, 3309; plus 3 advanced hours 18
18. Theatre Arts: THEA 3113, 3110, 3210 (or 3221), 4313, 3325 19 (must take SPCH 3103, 1103 in lieu of SPCH 3101, plus THEA 3350 as an elective under General Requirements)

SAMPLE OF A POSSIBLE SCHEDULE: Courses may be arranged in different order:

FRESHMAN YEAR

1st Semester		Hours
ENGL	3111 Expository English Composition	3
SPCH	3101 Public Speaking (or English 6111)	3
HIST	3101 History of the U.S. to 1865	3
EDEC	3210 Introduction to Educational Computing	3
BIOL	3105 General Biology	3
		15

2nd Semester

ENGL	3112 Research and Critical Writing	3
HIST	3102 History of the U.S. since 1865	3
GEOG	3110 Cultural Geography	3
MATH	3120 Mathematics for the Social Sciences I	3
GEOL	3103 Principles of Earth Science	3
		15

SOPHOMORE YEAR

1st Semester

ENGL	3303 English Grammar and Usage	3
POSC	3110 American Government and Politics	3
MATH	3203 Classroom Mathematics	3
ARTE	3311 Creative Art for the Classroom Teacher	3
TED	1201 Orientation to Education	1
3 hours of English literature or Theatre Arts		3
		16

2nd Semester

ENGL	3454 Teaching Comp. in Elem. and Middle Schools	3
POSC	3111 American Government & Politics	3
PSCI	3101 Principles of Physical Science	3
SPAN	4102 Spanish Two for non-native speakers	4
or 4104 Spanish Two for native speakers		4
3 hours in teaching field		3
		16

JUNIOR YEAR

1st Semester

EDPC	3301 Intro. to Educational Psychology	3
PE	3320 Teaching Physical Ed. in Elementary Schools	3
or PE 3318 Physical Education for Early Childhood		3
ELED	3302 Curriculum Planning and Evaluation	3
MUSE	3334 Teaching Music in Elementary School	3
ELED	3307 Multicultural Ed. in Elementary School	3
3 hours in teaching field		3
		18

2nd Semester

SPED	3425 Special Education for Classroom Teacher	3
HE	3302 Elementary School Health Education	3
RED	3340 Developmental Reading in Elementary School	3
ELED	3405 Mathematics in the Elementary School	3
ELED	3306 Language Arts in the Elementary School	3
3 hours in teaching field		3
		18

SENIOR YEAR

1st Semester

ELED	3303 Social Studies in Elementary School	3
ELED	3304 Science in the Elementary School	3
RED	3441 Diagnostic Teaching of Reading	3
ELED	3406 Diagnosis & Remediation in Teaching Math	3
6 hours in teaching field		6
		18

2nd Semester

TED	9490 Student Teaching in the Elementary School	9
EDPC	3402 Educational Psych. and the Elementary School	3
3 hours in teaching field		3
		15

**Bachelor of Science in Education:
Secondary Education**

- I. GENERAL REQUIREMENTS (49 semester hours) The following courses do not reflect departmental prerequisites.
Communication Arts: ENGL 3111 (or 6111), 3112, plus 6 hours sophomore level English; SPCH 3101 (except when ENGL 6111 is taken).
Social Sciences: HIST 3101, 3102; POSC 3110, 3111.
Mathematics/Science: MATH 3120; EDEC 3210; BIOL 3105; GEOL 3103; PSCI 3101.
Electives: ENGL 3303, plus 3 hours from Art, Music or Theatre Arts.
Education: TED 1201.
- II. TEACHING FIELDS (60 semester hours)
Select two teaching fields or one composite teaching field from the list below.
- III. PROFESSIONAL STUDIES (20 semester hours)
EDPC 3301; RED 3342; SPED 3425, SCED 3317, 3311, 2310; SCED 3312, or one of the following: SCED 3467, 3468, 3469, 3470 (or ADMS 3499), 3455 (or ENGL 3455); PE 3304.
- IV. STUDENT TEACHING TED 9495 (9 semester hours)
Total: 138 semester hours

TEACHING FIELDS IN SECONDARY EDUCATION

The student must select two single fields or one composite field and should consult an advisor for scheduling of courses.

	Hours
1. Bilingual Education: LING 3307, 3308, 3472; SPAN 3309; BED 3430, 3435, 3436, 3437; RED 3441; plus 3 hours from HIST 3309, 3343 or ENGL 3374, 3310 (may not be combined with English)	30
2. Biological Sciences: BIOL 3106, 1107, 1108, 3214, 1215, 3216, 1217, 3318, 1319, 3320, 3321, plus 3 advanced hours other than 3490, 3498	26
(Must take CHEM 3105, 3106, 2106 in lieu of BIOL 3105, GEOL 3103 and PSCI 3101 under General Requirements prior to BIOL 3214, 1215)	
3. Business: ECON 3203; ACCT 3201, 3202; ADMS 3308; BLAW 3301; FIN 3310; MGMT 3310; MKT 3300; plus 3 hours each of advanced typing, advanced shorthand, and office procedures, all with a grade of B	33
(Must take CIS 3225 in lieu of EDEC 3210 under General Requirements)	
4. Chemistry: CHEM 3105, 3106, 2106, 2213, 2214, 3324, 1324, 3325, 1325, 3326, 1326, plus 3 advanced hours from CHEM 3428, 3430, 3432, 3468	27
5. Computer Science: CIS 3225, 3235, 3300, 3315; CS 4101; EDRS 3410; plus 6 advanced CS or CIS hours	25
6. Earth Science: GEOL 3104, 3304, 3305, 3350, GEOG 3306; plus 15 hours in geology and physical geography	30
7. English: ENGL 3215, 3216, 3311, 3312, 3320, 3365, 3456, 6 advanced hours, plus RED 3443	30
(Must take ENGL 3211, 3212 under General Requirements)	
8. French: FREN 3201, 3202, 3305, 3355, 3357, 3320, 3401; plus 9 hours in French literature	30
9. Generic Special Education: SPED 3310, 3320, 3333, 3334, 3440, 3445; SHLD 3315 or 3210; PE 3414	24
10. German: GERM 3201, 3202, 3357, 3320, 3401; plus 6 hours in German literature and 9 advanced hours	30
11. Health Education: HE 3201, 3202, 3307, 3401, 3403, plus 9 hours from HE 3101, 3301, 3303, 3402, 3404, 3405	24
12. History: HIST 3201, 3202, 3317, 3309 or 3328; plus 18 advanced hours (with no more than 9 hours in any one area)	30
13. Journalism: MC 3102, 3201, 3250, 3302, 3303, 3304, 3305, 3307, 3355, and 3 advanced hours	30
14. Life/Earth Sciences: GEOL 3104, 3304, 3305, 3350;	

BIOL 3106, 1107, 1108, 3214, 1215; plus 3 advanced hours in biology other than 3490, 3498	24
(Must take CHEM 3105, 3106, 2106 prior to BIOL 3214, 1215)	
15. Mathematics: MATH 4111, 3112, 3213, 3325, 3328 (geometry), 1282, 3280 or 3480, 3300, 3323; plus 3 hours from MATH 3319, 3341 or 3330 (Statistics)	29
16. Physical Education: PE 3303, 3305, 3311, 3312 (BIOL 4211 and 1212 are prerequisites), 3414, 3411; plus 6 hours from PE 3408, 3206, 3207, 3209, 3210 plus 6 hours in PE skills	30
17. Physical Science: CHEM 4107, 4108, 3326, 1326; PHYS 4103, 4104, 4475; plus 6 advanced hours from PHYS 2343, 2446	30
18. Physics: PHYS 4210 (MATH 4111 is prerequisite), 4211 (MATH 3112 is prerequisite), 1120, 1121, 1218 (may be counted once for credit), 3325, 2343, 3351 (MATH 3226 is prerequisite), 3441 (MATH 3226 is prerequisite), 3455 (MATH 3226 is prerequisite), 4475	29
19. Political Science: POSC 3231, 3224, 3336, 3325, 3328, 3327, 3322, 3340, 3330, 3320	30
20. Psychology: PSYC 3101, 3103, 3210, 3202, 2321, 1321, 3348, 3441, 3304 or 3401 plus 3206 and 3347, or 3206 and 3306, or 3212 and 3302	30
21. Reading: RED 3340, 3441, 3445, 3443, 3444, 3447 or 3446; BED 3437; plus 9 hours from ENGL 3456, THEA 3301, LING 3448, or SPED 3333	30
22. Sociology: SOCI 3101, 3301, 3311, 3401; plus 18 advanced hours	30
23. Spanish: — Non-native speakers: SPAN 3201, 3202, 3355, 3305, 3320, 3357, 3309, 3401, 3472	30
Native speakers: SPAN 3203, 3204, 3356, 3305, 3320, 3357, 3309, 3401, 3472	30
(plus 3 advanced hours for both groups)	
24. Speech: SPCH 1103, 2221, 3205, 3206, 3221, 3222, 3307, 3333, 3334; plus 6 advanced hours	30
(Must take SPCH 3103-1103 in lieu of SPCH 3101 under General Requirements)	
25. Theatre Arts: THEA 3110, 3210, 3113, 3221, 4213, 3325, 3332 or 3342, 3333; plus 6 hours from THEA 3351, 3352, 3353, 3340, 3335, or 3336	31
(Must take SPCH 3103-1103 in lieu of SPCH 3101 under General Requirements)	

COMPOSITE AREAS:

26. English Composite: ENGL 3215, 3216, 3311, 3312, 3320, 3456, 3365 plus 6 advanced hours; RED 3441, 3447 and 3 hours from RED 3443, 3444, 3445; SPCH 3205, 3206, 3221, 3333, 3334; MC 3201, 3302, 3304	60
(Must take ENGL 3211, 3212 under General Requirements)	
27. English — ESL Composite: ENGL 3307, 3311, 3312, 3365, 3310 or 3371 or 3374, and 6 hours in English or American literature, plus 3455 and 3456; LING 3220, 3308, 3448, 3471; BED 3436, 3437; 3 hours from: SOCI 3336, 3357; HIST 3309	48
28. Science Composite: BIOL 3106, 1107, 1108, 3214, 1215; CHEM 3105, 3106, 2106, 3326, 1326; GEOL 3104, 3304, 3305; PHYS 4103, 4104, 4475. Students with Physics emphasis must take PHYS 4210 (MATH 4111 is prerequisite), 4211 (MATH 3112 is prerequisite), 1120, 1121, 1218 twice in lieu of PHYS 4103, 4104; plus one of the following areas of emphasis: Biology Emphasis: BIOL 3318, 1319, 3320, 3321; plus 3 advanced hours other than 3490, 3498	55
Chemistry Emphasis: CHEM 2213, 2214, 3324, 1324, 3325, 1325	54
Earth Science Emphasis: GEOG 3306; GEOL 3350; plus 9 advanced hours in geology and physical geography	57
Physics Emphasis: PHYS 3325, 3455 (MATH 3226 is	

prerequisite), 2343 twice, 447558

29. Social Studies Composite: HIST 3201, 3202, 3317 plus 9 advanced hours; SOCI 3101, 3102; ECON 3203, 3204; GEOG 3110, 3106, or 3411; GEOL 3466; POSC 3327, 3328, 3341, 3336; plus 3 hours from SOCI 3370, POSC 3346, HIST 3391; and 3 hours from SOCI 3259, POSC 3321, HIST 330960

SAMPLE OF A POSSIBLE SCHEDULE: Courses may be taken in different order:

FRESHMAN YEAR

1st Semester

			Hours
ENGL	3111	Expository English Composition	3
SPCH	3101	Public Speaking (or English 6111)	3
HIST	3101	History of the U.S. to 1865	3
EDEC	3210	Introduction to Educational Computing	3
BIOL	3105	General Biology	3
PSCI	3101	Principles of Physical Science	3
			18

2nd Semester

ENGL	3112	Research and Critical Writing	3
HIST	3102	History of the U.S. since 1865	3
3 hours from Art, Music or Theatre Arts			3
MATH	3120	Mathematics for the Social Sciences I	3
GEOL	3103	Principles of Earth Science	3
ENGL	3 hours of 3200 level courses		3
			18

SOPHOMORE YEAR

1st Semester

ENGL	3303	English Grammar and Usage	3
POSC	3110	American Government & Politics	3
TED	1201	Orientation to Education	1
6 hours in first teaching field			6
6 hours in second teaching field			6
			19

2nd Semester

ENGL	3 hours of 3200 level courses		3
POSC	3111	American Government & Politics	3
6 hours in first teaching field			6
6 hours in second teaching field			6
			18

JUNIOR YEAR

1st Semester

EDPC	3301	Introduction to Educational Psychology	3
SCED	2310	Evaluation in Secondary Schools	2
6 hours in first teaching field			6
6 hours in second teaching field			6
			17

2nd Semester

SPED	3425	Special Education for Classroom Teacher	3
SCED	3311	Curriculum Planning in Secondary Schools	3
SCED	3317	Multicultural Ed. in Secondary Schools	3
6 hours in first teaching field			6
3 hours in second teaching field			3
			18

SENIOR YEAR

1st Semester

SCED	3 hours of appropriate methods courses		3
RED	3342	Reading & Study in the Content Areas	3
6 hours in first teaching field			6
6 hours in second teaching field			6
			18

2nd Semester

TED	9495	Student Teaching in Secondary School	9
3 hours in second teaching field			3
			12

Bachelor of Science in Education: Physical Education

Students seeking a Bachelor of Science in Education with a teaching field in Physical Education and All-Levels PE Certification must also complete the requirements for Elementary or Secondary Certification.

- I. GENERAL REQUIREMENTS (49 semester hours) The following courses do not reflect departmental prerequisites. Communication Arts: ENGL 3111 (or 6111), 3112, plus 6 hours sophomore level English (ENGL 3303, 3454 recommended for students working on All-Levels PE and Elementary certification); and SPCH 3101 (unless ENGL 6111 is taken). Social Sciences: HIST 3101, 3102; POSC 3110, 3111. Mathematics/Science: MATH 3120, EDEC 3210; BIOL 3105-1107, and 4211-1212). (Note: BIOL 3106-1108 is prerequisite to 4211-1212). Electives: 3 hours from Art, Music or Theatre Arts; and 3 hours from a Behavioral Science, Economics, Humanities or Languages (SPAN 4102 recommended for students working on All-Levels PE and Elementary certification). Education: TED 1201.
- II. TEACHING FIELD (44 semester hours) PE 3103, 4301, 3305, 3311, 3312, 3318, 3320, 3408, 3409, 3422; plus 6 hours of PE Skills Courses and 6 hours from PE 3206, 3207, 3209, 3210, 3215, 3316, 3321; also PE 3303 (if Elementary) or PE 3304 (if Secondary).

Students seeking All-Levels Physical Education and ELEMENTARY CERTIFICATION must complete the following:

- I. COMBINATION SUBJECTS (21 semester hours) ELED 3303, 3304, 3306, 3405, 3406; RED 3411; HE 3302.
- II. PROFESSIONAL STUDIES (15 semester hours) EDPC 3301; ELED 3307; PE 3414, 3303; RED 3340.
- III. STUDENT TEACHING TED 9848 (9 semester hours)
Total: 138 semester hours

Students seeking All-Levels Physical Education and SECONDARY CERTIFICATION must complete the following:

- I. SECOND TEACHING FIELD: (must choose one field from the list which appears under Secondary Education)
- II. PROFESSIONAL STUDIES (15 or 18 semester hours) EDPC 3301; SCED 3317, 3311; PE 3414, 3304; SCED 3467 or 3468 must be taken in addition to PE 3304 when second teaching field is math or science.
- III. STUDENT TEACHING TED 9498 (9 semester hours)
Total: 147 semester hours

SAMPLES OF POSSIBLE SCHEDULES: Courses may be taken in different order:

All-Levels Physical Education with Elementary certification

FRESHMAN YEAR

1st Semester

			Hours
ENGL	3111	Expository English Composition	3
SPCH	3101	Public Speaking (or English 6111)	3
HIST	3101	History of the U.S. to 1865	3
EDEC	3210	Introduction to Educational Computing	3
BIOL	3105	General Biology	3
BIOL	1107	General Biology Lab	1
PE	2 hours in skills		2
			18

2nd Semester

ENGL	3112	Research and Critical Writing	3
HIST	3102	History of the U.S. since 1865	3
3 hours from Art, Music or Theatre Arts			3
SPAN	4102 or 4104	Spanish II	4
BIOL	4211	Human Anatomy/Physiology	4
BIOL	1212	Exercises in Human Anatomy/Physiology Lab	1
PE	1 hour in skills		1
			19

70/THE COLLEGE OF EDUCATION

SOPHOMORE YEAR

1st Semester			
ENGL	3303	English Grammar and Usage	3
POSC	3110	American Government & Politics	3
TED	1201	Orientation to Education	1
PE		12 hours in teaching field	12
			<u>19</u>

2nd Semester			
ENGL	3454	Teaching Composition in Elem. and Middle School	3
POSC	3111	American Government & Politics	3
MATH	3120	Mathematics for the Social Sciences I	3
PE		6 hours in teaching field	6
			<u>18</u>

JUNIOR YEAR

1st Semester			
EDPC	3301	Introduction to Educational Psychology	3
PE	3414	Special Physical Education	3
RED	3340	Developmental Reading in Elementary School	3
PE		9 hours in teaching field	9
			<u>18</u>

2nd Semester			
ELED	3307	Multicultural ED in Elementary Schools	3
PE	3303	Measurement in Health and PE	3
ELED	3405	Mathematics in the Elementary School	3
RED	3441	Diagnostic Teaching of Reading	3
HE	3302	Elementary School Health Education	3
PE		3 hours in teaching field	3
			<u>18</u>

SENIOR YEAR

1st Semester			
ELED	3306	Language Arts in Elementary School	3
ELED	3406	Diagnosis & Remediation in Teaching Math	3
ELED	3304	Science in the Elementary School	3
PE		9 hours in teaching field	9
			<u>18</u>

2nd Semester			
TED	9498	Student Teaching in All-Levels PE	9
ELED	3303	Social Studies in Elementary School	3
PE		1 hour in skills	1
			<u>13</u>

All-Levels Physical Education with Secondary Certification

FRESHMAN YEAR

1st Semester			
			Hours
ENGL	3111	Expository English Composition	3
SPCH	3101	Public Speaking (or English 6111)	3
HIST	3101	History of the U.S. to 1865	3
EDEC	3210	Introduction to Educational Computing	3
BIOL	3105	General Biology	3
BIOL	1107	General Biology Lab	1
PE		2 hours in skills	2
			<u>18</u>

2nd Semester			
ENGL	3112	Research and Critical Writing	3
HIST	3102	History of the U.S. since 1865	3
		3 hours from Art, Music or Theatre Arts	3
		3 hours from Beh. Sc., Econ., Hum., Lang	3
BIOL	4211	Human Anatomy/Physiology	4
BIOL	1212	Human Anatomy/Physiology Lab	1
PE		1 hour in skills	1
			<u>18</u>

SOPHOMORE YEAR

1st Semester			
ENGL		3 hours from 3200 level courses	3
POSC	3110	American Government & Politics	3
TED	1201	Orientation to Education	1
PE		9 hours in teaching field	9
		3 hours in second teaching field	3
			<u>19</u>

2nd Semester			
ENGL		3 hours of 3200 level courses	3
POSC	3111	American Government & Politics	3
MATH	3120	Mathematics for the Social Sciences I	3
PE		6 hours in teaching field	6
		3 hours in teaching field	3
			<u>18</u>

JUNIOR YEAR

1st Semester			
EDPC	3301	Introduction to Educational Psychology	3
PE	3414	Special Physical Education	3
PE		6 hours in teaching field	6
		6 hours in second teaching field	6
			<u>18</u>

2nd Semester			
SCED	3317	Multicultural Ed. in Secondary Schools	3
SCED	3311	Curriculum Planning in Secondary Schools	3
PE		6 hours in teaching field	3
		6 hours in second teaching field	6
			<u>18</u>

SENIOR YEAR

1st Semester			
PE	3304	Teaching PE in Secondary Schools	3
PE		6 hours in teaching field	6
		9 hours in second teaching field	9
			<u>18</u>

2nd Semester			
TED	9498	Student Teaching in All-Levels PE	9
PE		4 hours in teaching field	4
PE		2 hours in skills	2
			<u>15</u>

SUMMER

PE		3 hours in teaching field	3
		6 hours in second teaching field	6
			<u>9</u>

DEGREE/CERTIFICATION IN ART, MUSIC, SPEECH, HEARING & LANGUAGE DISORDERS OR BUSINESS

Those students pursuing a degree and teacher certification in Art and Music will find information about their degree requirements under the College of Liberal Arts. Those seeking a Speech, Hearing and Language Disorders (SHLD) degree and teacher certification will find this information under the College of Nursing and Allied Health. Those seeking a Business degree and teacher certification will find this information under the College of Business Administration. In order to be recommended for certification, students must meet the standards for admission to the teacher education program listed in this section, have a certification plan prepared by an advisor in the College of Education, and meet all the program requirements including the prerequisites to student teaching. They must also apply for certification in the Certification Office during the first month of the semester in which they intend to complete the program. The fee is \$20. In addition they must register for and pass State certification exit exams (ExCET). Students are eligible to take ExCET tests only when they are enrolled in their last semester or later of a certification program.

CERTIFICATION PROGRAMS FOR STUDENTS WHO HAVE COMPLETED A BACHELOR'S DEGREE

Students who already have a bachelor's degree and wish to be certified to teach in the state of Texas must:

- Apply for admission to the University through the Graduate School.
- Consult an advisor in the College of Education.
- Have completed freshman English and Speech with a grade of C or better in each course.
- Complete TED 1201 with a grade of S.
- Pass the Pre-Professional Skills Test (P-PST) or the Texas Academic Skills Program (TASP).
- Be admitted to a teacher education program and have a certification plan prepared.
- Complete all the courses required by the certification plan with a GPA of at least 2.5 in the teaching field(s) and Professional Studies.
- Apply for certification.
- Register for and pass the State certification exit tests (ExCET).
- Provide proof of U.S. citizenship or proof of intent to become a U.S. citizen.

There are four areas in which all course requirements must be met: General Requirements, Teaching Field, Professional Studies, and Student Teaching.

General Requirements (applied to all certification candidates)

English	12 hours
Speech	3 hours
U.S. History	6 hours
Texas Government	3 hours
Laboratory Science	3 hours
Mathematics	3 hours (college algebra or above)
Computer Science	3 hours
Orientation to Education	1 hour

Teaching Field and Professional Studies Requirements for Elementary Certification

- 18 or 24 hours in an approved teaching field (see list on p. 63)
- 18 hours of Combination Subjects: 6 hours in reading, 3 hours in mathematics methods, 3 hours in music for teachers, 3 hours in health methods, and 3 hours of PE methods
- 27 hours in Professional Studies: 3 hours in special education, 3 hours in multicultural education, 6 hours in educational psychology, 3 hours in curriculum planning and evaluation, 3 hours in language arts methods, 3 hours in mathematics methods, 3 hours in social studies methods, 3 hours in science methods
- 9 hours in student teaching

Teaching Field and Professional Requirements for Secondary Certification

- two teaching fields (see list of approved fields on p. 68) of 30 hours each; or a composite field of 60 hours (see list on pp. 68-69); or one 36-hour field that includes the courses for one of the approved fields listed on p. 64 plus additional advanced hours for a total of 36 hours
- 20 hours in Professional Studies: 3 hours in multicultural education, 3 hours in special education, 3 hours in educational psychology, 3 hours in curriculum planning and 2 hours in evaluation, 3 hours in special methods appropriate to the teaching field(s), and 3 hours in reading
- 9 hours in student teaching

Teaching Field and Professional Studies Requirements for All-Levels PE with Elementary Certification

- 43 hours in physical education
- 21 hours of Combination Subjects: 3 hours in social studies methods, 3 hours in science methods, 3 hours in language arts methods, 6 hours in mathematics methods, 3 hours in reading, and 3 hours in health methods
- 15 hours in Professional Studies: 3 hours in multicultural education, 3 hours in educational psychology, 3 hours in special edu-

cation, 3 hours in curriculum and evaluation, and 3 hours in reading

- 9 hours in student teaching

Teaching Field and Professional Studies Requirements for All-Levels PE with Secondary Certification

- 43 hours in physical education
- 24-30 hours in an approved secondary teaching field (see list on p. 68)
- 15-18 hours in Professional Studies: 3 hours in multicultural education, 3 hours in educational psychology, 3 hours in special education, 3 hours in curriculum planning, and 3 hours in special methods appropriate to the teaching field(s)
- 9 hours of student teaching

Teaching Field and Professional Studies Requirements for All-Levels Art, Music, Speech, Hearing and Language Disorders (SHLD) Certification

- 48 hours in teaching field (Art, Music or SHLD)
- 15 hours in Professional Studies: 3 hours in multicultural education, 3 hours in educational psychology, 3 hours in special education, 3 hours in reading, and 3 hours in methods or curriculum
- 9 hours in student teaching

ENDORSEMENTS

Endorsements are additions consisting of 12 semester hours of college work that are added to a valid Texas certificate. The following endorsement programs are available.

Bilingual Education Endorsement. It may be added to valid provisional elementary teacher certificates, provisional special education certificates or provisional vocational certificates which require a college degree, plus:

- Oral proficiency in the language of the target population, measured by the Language Proficiency Interview (LPI) with a passing score of 3 and written proficiency as determined by the College Level Examination Program (CLEP) test with a passing score of 50.
- 12 semester hours: BED 3430, 3434, 3435, 3436.
- One year of successful classroom teaching experience on a permit in an approved bilingual education program, verified by the employing school district.

English as a Second Language (ESL) Endorsement. It may be added to a valid provisional certificate, provisional special education certificate, or provisional vocational certificate which require a college degree, plus:

- 12 semester hours: BED 3436, 3437 and LING 3471, 3448.
- One year of successful classroom teaching experience on a permit in an approved ESL or bilingual education program as verified by the employing school district.

Kindergarten Endorsement. It may be added to a valid elementary or all-level provisional teacher certificate or provisional vocational home economics certificates which require a college degree, plus:

- 9 semester hours of Kindergarten courses: EDPC 3401, ECED 3451, 3452.
- 3 semester hours of kindergarten student teaching or 3 additional semester hours of kindergarten education courses and one year of successful kindergarten teaching experience on a permit in an accredited school, verified by the employing school district.

TRANSFER STUDENTS SEEKING DEGREES IN EDUCATION

Undergraduate transfer students must submit original copies of their transcripts to the Admission and Evaluation Office (Academic Services Building) for evaluation, prior to consulting an advisor in the College of Education. Graduate students must contact the Graduate School.

OUT OF STATE TEACHERS

Teachers with valid or expired out of state teaching certificates must contact the Texas Education Agency (TEA) directly in order to have their credentials evaluated.

Early Childhood Studies

801 Education Building
(915) 747-5571, ext. 270

PROGRAM COORDINATOR: Daniel A. Kies
PROFESSOR: Milson
ASSOCIATE PROFESSORS: Ainsa, Kies, Tinajero
ASSISTANT PROFESSOR: Louisell

Early Childhood (ECED)

3350 Survey of Day Care (3-0)

History, philosophies, goals and models of public and private day care, including federally-funded early intervention programs; regulation and licensing of day care centers; staff training and program evaluation; relevant research on effectiveness of day care programs.

3451 Curriculum of Early Childhood Education (3-2)

Learning experiences and activities suitable and effective for young children. Objectives, development, implementation, and evaluation of the curriculum for early childhood education. Analysis of successful preschool and kindergarten programs as a background for curriculum development in early primary grades. Field experience required.

3452 Language Development for Young Children (3-0)

Oral and non-verbal communication, with particular attention to children in the Southwest. Techniques to help children develop communication, observation, and listening skills.

3454 Readiness and Beginning Mathematics and Science (3-1)

Classroom processes and procedures to strengthen children's cognitive development during the early childhood years; methods for determining and enhancing readiness for quantitative and qualitative learning, preschool through grade three. Field experience required.

3455 Readiness and Beginning Reading and Writing (3-1)

Methods for developing readiness and beginning skills in reading and writing in cognitive, affective, and psychomotor domains in monolingual and multilingual classrooms. Field experience required.

Teacher Education (TED)

9491 Student Teaching in Kindergarten and the Elementary School (1-30)

Minimum of 225 hours of student teaching in a kindergarten and 225 hours in an elementary classroom plus 15 hours of seminars.

Elementary and Secondary Education Studies

601 Education Building
(915) 747-5571, ext. 216

PROGRAM COORDINATOR: James L. Milson
PROFESSORS EMERITI: Lou Ella Burmeister, William Harold Harris
PROFESSORS: Burns, Ekwall, Engelhardt, Heger, Hernandez, Klingstedt, Milson
ASSOCIATE PROFESSORS EMERITI: Mary Louise Zander Aho, Benny Wesley Collins, John Paul Scarbrough
ASSOCIATE PROFESSORS: Barker, Bixler-Marquez, Descamps, Edwards, Kies
ASSISTANT PROFESSORS: Louisell, Seda, Smith

Teacher Education (TED)

1201 Orientation to Education (1-0)

Designed to orient the prospective teacher education student to the profession of teaching and to provide a basis for selection of teacher education students through the administration of selected instruments. Taken on a pass-fail basis.

1450 to 6450 Educational Workshop (1-0 to 6-0)

Studies in a designated area. May be repeated for credit when topic varies.

9490 Student Teaching in the Elementary School (1-30)

Minimum of 450 hours of student teaching in an elementary school plus 15 hours of seminars.

9493 Student Teaching in Bilingual Education in the Elementary School (1-30)

Minimum of 450 hours of student teaching in a bilingual education classroom plus 15 hours of seminars.

9495 Student Teaching in the Secondary School (3-30)

Minimum of 225 hours of student teaching in each teaching field at the secondary school level for a minimum total of 450 hours. Students must attend a weekly three-hour seminar on classroom management which includes application of psychological principles to the education of the typical child and skills in working with individuals and groups in classroom settings.

9496 Student Teaching in All-Levels Art (3-30)

Minimum of 225 hours of student teaching in an elementary school and 225 hours in a secondary school. Students must attend a weekly three-hour seminar on classroom management which includes application of psychological principles to the education of the typical child and skills in working with individuals and groups in classroom settings.

9497 Student Teaching in All-Levels Music (3-30)

Minimum of 225 hours of student teaching in an elementary school and 225 hours in a secondary school. Students must attend a weekly three-hour seminar on classroom management which includes application of psychological principles to the education of the typical child and skills in working with individuals and groups in classroom settings.

9499 Student Teaching in All-Levels Speech, Hearing, and Language Disorders (3-30)

Minimum of 225 hours of student teaching in an elementary school and 225 hours in a secondary school. Students must attend a weekly three-hour seminar on classroom management which includes application of psychological principles to the education of the typical child and skills in working with individuals and groups in classroom settings.

Elementary Education (ELED)

3302 Curriculum Planning and Evaluation in the Elementary School (3-1)

An introduction to the basic principles of curriculum planning and evaluation in the elementary school. Media laboratory required.

3303 Social Studies in the Elementary School (3-0)

Content, materials, and methods for teaching social studies in the elementary school.

3304 Science in the Elementary School (3-0)

Content, materials, and methods for teaching science in the elementary school.

3305 Children's Literature in the Elementary School (3-0)

Children's literature and the administration of the recreational reading program in relation to the content areas in the elementary school.

3306 Language Arts in the Elementary School (3-2)

Content, materials, and methods for teaching language arts in the elementary school. Field experience required.

3307 Multicultural Education in the Elementary School (3-0)

A survey of cultural education models, instructional methods, and classroom interaction processes in elementary schools that reflect the cultural composition of the U.S.

3405 Mathematics in the Elementary School (3-0)

Content, materials, and methods for teaching mathematics in the elementary school. *Prerequisite:* MATH 3302.

3406 Diagnosis and Remediation in Teaching Mathematics (3-1)

Development of skills in diagnosis and remediation in teaching

mathematics. Use of commercial assessment instruments and implementation of specific instructional techniques to assist students to achieve at a desired level. Practicum with referrals to Mathematics Center required. *Prerequisite:* ELED 3405.

3461 Geometry in the Elementary School (3-0)

Content, methods, and materials for teaching geometry in the elementary school. *Prerequisites:* MATH 3302 and ELED 3405; *Corequisite:* MATH 3304.

3463 Applications and Problem Solving (3-0)

Applications at the elementary school level with emphasis on the development of problem solving skills, particularly inductive, deductive, and inquiry techniques. Emphasis on techniques especially appropriate for superior and gifted children. *Prerequisite:* ELED 3405.

3464 Elementary School Mathematics Practicum (1-6)

Field experience for the observation and demonstration of skills and knowledge for planning, presenting, and evaluating elementary school mathematics. *Prerequisites:* ELED 3405 and 3406.

Secondary Education (SCED)

2310 Evaluation in the Secondary School (2-0)

Development of concepts and basic skills necessary for the construction and use of both formative and summative classroom evaluation instruments.

3311 Curriculum Planning in the Secondary School (3-1)

Basic principles of curriculum planning in the secondary school. Media laboratory required.

3312 General Methods in the Secondary School (3-1)

Selection and usage of instructional methods in the secondary school. Field experience required.

3317 Multicultural Education in the Secondary School (3-0)

A survey of cultural education models, instructional methods, and classroom interaction processes in secondary schools that reflect the cultural composition of the U.S. For secondary and all-levels majors.

3455 Teaching English in the Secondary School: Composition (3-1)

Current composition theories; methods of discovering, arranging, and styling content; practice in composition evaluation; exercises in teaching basic skills. Field experience required. May be taken as ENGL 3455 or SCED 3455.

3456 Teaching English in the Secondary School: Literature (3-1)

Current approaches to teaching poetry, short stories, novels, and plays; practical exercises for applying the approaches in the classroom. Field experience required. May be taken as ENGL 3456 or SCED 3456.

3467 Teaching Math in Secondary School (3-1)

Materials and methods used in teaching mathematics in the secondary school. Skills in analysis and discovery, inquiry, and deductive teaching will be emphasized. Field experience required.

3468 Teaching Science in Secondary School (3-1)

Materials and methods used in teaching natural and physical science in the secondary school. Emphasis will be placed on developing skills in the use of inquiry, process approach, and discovery in teaching science. Field experience required.

3469 Teaching Social Studies in Secondary School (3-1)

Current theories of teaching the social sciences and their application in the secondary school classroom. Field experience required.

3470 Teaching Business in the Secondary School (3-1)

Methods and materials used in teaching business subjects; the place of business in general education. Field experience required. May be counted as ADMS 3499 or SCED 3470.

Bilingual Education (BED)

3430 Principles of Bilingual Education/ESL (3-0)

A survey of the philosophies, theories, and history of bilingual edu-

cation and ESL in the U.S. and selected international settings, to encompass the nature of societal bilingualism as it relates to language and educational policies. The basic instructional models and research findings in bilingual education are emphasized.

3434 Teaching Spanish as a Vernacular (3-0)

Offers opportunity for development of skills in teaching Spanish, including regional dialects, emphasizing techniques for teaching language skills in Spanish.

3435 Bilingual/Bicultural Classroom Instruction, K-6 (3-0)

Offers opportunity for development of skills in teaching literacy in Spanish in the content areas where a specialized vocabulary is required, emphasizing techniques for teaching concepts in the content areas for a given level.

3436 ESL Methodology in the Content Areas (3-1)

A course in the basic principles and methods of teaching English as a Second Language. Emphasis on the development of instructional techniques and materials that enable content area teachers to support and reinforce English as a Second Language programs in grades K-12. Laboratory experience required. *Prerequisite:* LING 3448 or 3308.

3437 Reading and Writing in English as a Second Language (3-1)

Acquisition of reading and writing proficiency in English by literate and non-literate speakers of minority languages in Texas. Emphasis on the diagnosis of reading and writing difficulties encountered by students of limited English ability, and on oral language dominance and proficiency testing. Particular attention will be given to the preparation of language acquisition and literacy skills in grades K-12. Laboratory experience required. *Prerequisite:* RED 3340 or equivalent background.

3438 Microcomputers in Bilingual Education (3-0)

Development, application, and evaluation of software in bilingual education/ESL programs. Software development and modification of commercially available material for integration with non-computer materials are included.

Reading Education (RED)

3340 Developmental Reading in the Elementary School (3-0)

Developmental reading, emphasizing curriculum, methods, and materials for teaching reading in the elementary school. Some attention will be focused on the Spanish speaking child.

3342 Reading and Study in the Content Areas (3-1)

Methods and materials for developing maturity in reading and study skills, especially in the content areas from K-12. Special emphasis is given to the development of interest, the matching of students to proper materials, and instructional techniques for integrating the teaching of skills with the teaching of content. Field experience required.

3441 The Diagnostic Teaching of Reading (3-0)

Standardized and informal materials and techniques for diagnosing reading strengths and weaknesses of individuals and groups, techniques and materials for building specific reading abilities, and methods of individualizing instruction and grouping according to student needs and interests. *Prerequisite:* RED 3340 or 3342; may not be taken for credit by those who have taken CURR 3541 or RED 3541 after 1982.

3443 Teaching Critical-Creative Reading (3-0)

Methods and materials for developing higher level cognitive and affective reading behaviors among students from K-12. Teaching strategies which provide for the development of critical-creative readers in both reading and content area subjects will be designed. *Prerequisite:* RED 3340 or 3342.

3444 Seminar in Reading (3-0)

Theories, materials, and research on topics in reading. *Prerequisite:* RED 3340 or 3342.

3445 Analysis and Evaluation of Reading Materials (3-0)

Classroom reading materials representative of various facets and philosophies in the teaching of reading with a major emphasis focused upon the development of criteria for the selection of

materials appropriate for specific individuals and groups of children.
Prerequisite: RED 3340 or 3342.

3446 Reading Laboratory Experience — Elementary (1.5-3)

Laboratory experience for the application of concepts, media, and evaluation of reading in the elementary school. *Prerequisites:* RED 3340 or 3342, and 3441.

3447 Reading Laboratory Experience — Middle Grades and Secondary (1.5-3)

Laboratory experience for the application of concepts, media, and evaluation of reading in the middle grades, secondary school, and/or community college. *Prerequisites:* RED 3340 or 3342, and 3441.

Kinesiology, Health and Sports Studies

901 Education Building
(915) 747-5571, ext. 244

PROGRAM COORDINATOR: Brian J. Kelly
PROFESSOR EMERITUS: James Gordon Mason
PROFESSOR: Hardin
ASSOCIATE PROFESSORS: B. Kelly, N. Kelly
ASSISTANT PROFESSOR: Smith
INSTRUCTOR: Gamboa

Teacher Education (TED)

9498 Student Teaching in All-Levels Physical Education (3-30)

Minimum of 225 hours of student teaching in an elementary school and 225 hours in a secondary school. Students must attend a weekly three-hour seminar on classroom management which includes application of psychological principles to the education of the typical child and skills in working with individuals and groups in classroom settings.

Health Education (HE)

3101 Health Science Information (3-0)

Scientific information essential to the understanding of individual and community health problems.

3201 First Aid and Safety Education (3-0)

Theory, demonstrations, and practices in techniques of first aid and safety. American Red Cross First Aid Certification may be earned.

3202 Nutrition Education (3-0)

Nutritional needs of school-age children and their families. Factors affecting food choice and meal patterns; the scientific basis for components of an adequate diet; local, national, and world nutritional problems.

3301 Community Hygiene (3-1)

Group health and the social and governmental agencies concerned with environmental control and health protection. Three hours of lecture per week and field trips.

3302 Elementary School Health Education (3-0)

Fundamentals of school health education programs, school environment, school health services, and health instruction.

3303 Current Problems in Health Education (3-0)

Identification and study of current problems in school health education, such as death, consumer education, aging, drugs, alcohol, and tobacco.

3307 Methods and Materials in Health Education (3-0)

Overview of both traditional and innovative teaching methods, materials and resources in health instruction.

3401 Health Education in the Secondary School (3-0)

Responsibilities of schools for health instruction; adolescent health problems and their relationship to instruction; implications for individual mental health.

3402 Field Experiences in Health Education (3-1)

Observation and participation in educational activities of official and voluntary public health agencies. Planning and supervision done jointly with University staff members and agency representatives.
Prerequisite: HE 3301.

3403 Fundamentals of Family Life and Sex Education (3-0)

Basic knowledge, attitudes, and issues regarding psychosocial, historical, and comparative cultural aspects of human sexuality. Consideration will be given to sex education programs in the schools.

3404 Public Health Administration I (3-0)

Administrative considerations of public health agencies; introduction to the application of basic statistical principles related to medical and public health problems.

3405 Public Health Administration II (3-0)

Incidence and prevalence of disease in man, and the principles and current status of comprehensive health planning.

Physical Education (PE)

NOTICE: Physical Education Activity/Skill courses often involve strenuous physical activity and/or participation in activities with inherent risk of personal injury. Students are advised to review their physical condition, consulting with a physician if necessary, before enrollment in such courses. The University is not responsible for illness or injury resulting from participation in these courses.

1101 Activity Course (0-3)

Activity course. Co-educational. May be repeated for credit. Open to all students. Laboratory Fee: \$8 for swimming; \$4 for all other activities.

1201-06 Skill Course for Physical Education Teaching Fields

Development of skills appropriate for physical education majors with each skill course requiring the demonstration of proficiency in three of the areas listed below.

Conditioning	Archery
Football	Badminton
Modern Creative Dance	Gymnastics II
Basketball	Handball
Track	Folkdance
Softball	Swimming II (life saving)
Volleyball	Fencing
Swimming I	Social dance
Wrestling	Judo
Field Hockey	Karate
Gymnastics I	Golf
Tennis	Self-Defense
Basic Dance	Bowling
Soccer	Backpacking

Each skills course earns one-third credit. Each skills course will be one-half semester (eight weeks) in length. The all-levels majors in Health and Physical Education must earn a total of six credits in skills courses.

1207 Modern Dance and Tap Dance (0-3)

Basic skills and techniques of tap and modern dance.

1209 Folk and Ethnic Dance (0-3)

Basic skills and techniques of folk and ethnic dances of the world; their origins, music and costuming.

1211 Creative Dance/Notation/Accompaniment (0-3)

Creative dance with emphasis on original movement; elementary labanotation; accompaniments for movement.

1212 Aerobic Dance (0-3)

Basic skills and techniques of aerobic dance; set routines and development of original routines; scientific basis for aerobic dance.

3103 Introduction to Physical Education (3-0)

Historical and philosophical aspects of physical education internationally and nationally, and the current relationships of physical education to present day education. Orientation to programs in school, college, and community.

3206 Coaching Football, Wrestling, Baseball (3-0)

Coaching methods and problems; fundamentals of varsity play; comparisons of systems; strategy; conditioning; selection of individuals for team positions; responsibility of coaches. *Prerequisite:* Sophomore standing.

3207 Coaching Track/Field, Basketball, Volleyball (1-2)

Coaching methods and problems; fundamentals of varsity team play; comparison of systems; strategy; training; conditioning; selection of individuals for team positions.

3209 Coaching Field Hockey, Soccer, Tennis (1-2)

Coaching methods and problems; fundamentals of varsity team play; strategy; training; conditioning; selection of individuals for team positions.

3210 Coaching Gymnastics, Swimming (1-2)

Coaching methods and problems; fundamentals of varsity team play; strategy; training; conditioning; selection of individuals for team positions.

3215 Historical and Cultural Aspects of Dance (2-1)

Dance from early to modern times with particular focus on American dance in the 20th century.

3401 Exercise Physiology (3-0)

Physiological adaptations of circulatory, respiratory, digestive, endocrine, and muscular systems to exercise, and the relationships of these adaptations to physical education and athletics. *Prerequisites:* BIOL 4211 and 1212.

3303 Measurement in Health and Physical Education (3-0)

Tests, both in health and physical education, their purposes, uses, scoring, and interpretation. *Prerequisite:* Junior standing or permission of the instructor.

3304 Teaching Physical Education in Secondary Schools (3-2)

Methods, teaching techniques, and materials for the teaching of physical education in the secondary schools, with major emphasis on teaching team sports. Field experience required. *Prerequisite:* Completion of four team sports skills courses.

3305 Teaching Physical Education in Secondary Schools (3-0)

Methods, teaching techniques, and materials for teaching dual and individual sports. *Prerequisite:* Completion of four individual sports skills courses.

3311 Organization and Administration of Physical Education (3-0)

Place of a diversified physical education program in the total education program, with emphasis on the administration problems underlying a functional program.

3312 Kinesiology (3-0)

Analysis of movement, specialized skills, and motor coordination in terms of the mechanics of skeletal and muscular movement. *Prerequisite:* BIOL 4211, 1212, and junior standing.

3316 Teaching Modern and Tap Dance (1-2)

Practical experience in teaching modern and tap dance; study and collection of materials, curricula, and music.

3318 Physical Education for Early Childhood (3-0)

Types of activities suitable for the pre-school, kindergarten, and primary grade child, including movement education (basic rhythms), creative dance, singing games, low organized activities, and water confidence.

3319 Dance Practicum (1.5-3)

Observation of and participation in the teaching of dance in the public schools. *Prerequisite:* Five semester hours of dance laboratories.

3320 Teaching Physical Education in Elementary Schools (3-1)

Materials, class management, and instructional techniques in the physical education program for the elementary school. Major emphasis will be on current approaches to teaching physical education, basic movement skill development leading into dance, major and minor games, gymnastics, and individual sports at the intermediate level. Field experience required.

3321 Teaching Hispanic Dance (1-2)

Fundamentals of Hispanic dance (classical, regional, flamenco), their origin and evolution; musical accompaniment, costumes, choreography, performance, production, and methods of teaching.

3408 Sports Officiating (3-0)

Interpretation and application of rules and playing regulations; the mechanics of officiating and the psychological aspects of officiating in selected team sports. *Prerequisite:* Junior standing or permission of the Chairperson of the Department.

3409 Sports Activities, Injuries, Training, and Emergency Care (3-0)

Recognition and prevention of injuries in sports activities as well as emergency care provisions for common physical education and playground injuries. *Prerequisite:* Senior standing or permission of the Chairperson of the Department.

3410 Health and Physical Education Seminar (3-0)

Studies in a designated area of health and physical education. May be substituted for a deficiency in the advanced physical education requirements for physical education teaching fields. *Prerequisites:* Senior standing and permission of the Chairperson of the Department.

3412 Dance Production (1-0)

Choreography, lighting, make-up, programming, accompaniment, sound system, costuming, and set design in the production of dance. *Prerequisite:* PE 3316.

3414 Special Physical Education (2-1)

Provides opportunities for the development of an understanding of atypical children, and programs of physical education adapted to their needs. The nature of physical, mental, emotional, and social disabilities will be discussed with application of corrective, developmental, and remedial physical activities. Practical laboratory experiences are also part of the course. *Prerequisite:* Junior standing.

3415 Advanced Athletic Training (3-0)

Provides opportunities for the development of competence in the uses of common techniques for both the prevention and rehabilitation of athletic injuries. Students will be provided opportunities to demonstrate an understanding of bone and soft tissue injury management and an understanding of the differences between female and male athletes, and their implications for conditioning and injury management. *Prerequisites:* PE 3409, BIOL 4211-1212, and permission of the instructor.

3422 Outdoor Education (3-3)

Class management and organization for field trips. Topics examined are back-packing, nature study, fishing techniques, group sanitation, and safety. A three-day field trip and a paper concerning contemporary environmental issues are required.

Counseling and Special Education Studies

701 Education Building
(915) 747-5571, ext. 202

PROGRAM COORDINATOR: Sharon R. Morgan

PROFESSOR EMERITUS: James F. Day

PROFESSOR: Walker

ASSOCIATE PROFESSORS: Duran, Morgan

ASSISTANT PROFESSOR: Gallegos

Educational Psychology and Counseling (EDPC)

For Undergraduate Credit Only

3301 Introduction to Educational Psychology (3-1)

Principles of learning based on typical patterns of physical, social,

emotional, and intellectual growth; required of all elementary, secondary, and all-levels teacher certification candidates; field experience required.

3401 Educational Psychology and Early Childhood Education (3-0)

Application of psychological principles to the education of the typical pre-school child; emphasizes child development, including the development of self-concept, play, and learning.

3402 Educational Psychology and the Elementary School (3-1)

Application of psychological principles to the education of the typical elementary school child; includes working with individuals and groups in classroom settings and classroom management. *Prerequisite:* EDPC 3301.

3428 Introduction to Counseling (3-0)

Overview of history, theory, research, and practice of counseling; emphasizes personality development, learning, social influence, and the helping relationship. *Prerequisite:* 12 semester hours of upper division coursework in Education or the Social/Behavioral Sciences.

1450-6450 Workshop in Educational Psychology and Counseling

Special Education (SPED)

For Undergraduate Credit Only

3310 The Exceptional Child (3-0)

Introduction to the field of special education for school personnel; attention to behavioral and learning characteristics of the child with physical, sensory, intellectual, and/or emotional differences.

3320 Soclocultural Issues in Special Education (3-0)

Identification of professional, community, governmental, and political organizations and the socio-cultural issues that influence change in special education. *Prerequisite:* SPED 3310.

3333 Teaching the Exceptional Child (3-1)

Analysis of school curriculum, curriculum materials, and teaching methods for the exceptional child; includes planning techniques and classroom designs. Field experiences required. *Prerequisite:* SPED 3310.

3334 Classroom Management of the Exceptional Child (3-0)

Focuses on unique behaviors of the exceptional child; presents a wide range of techniques to improve behavior including classroom management and parent involvement. *Prerequisite:* SPED 3310.

3405 Characteristics of the Visually Impaired Person (3-0)

Theory, characteristics assessment, and educational implications for teaching the visually impaired; includes personal history, developmental needs and perceptual differences. *Prerequisite:* SPED 3310.

3406 Education of the Visually Impaired Person (3-0)

Examination of materials and special equipment for teaching the visually impaired; includes programming and adapting materials as well as information about available equipment. *Prerequisite:* SPED 3405.

3407 Communication Skills for the Visually Impaired Person (1-4)

Communication techniques for visually impaired including Braille, use of slate and stylus, numerical codes, and manual communication. *Prerequisite:* SPED 3405.

3408 Practicum: The Visually Impaired Person (1-4)

Introduces models of instruction for the visually impaired and provides opportunities to apply these models in a tutorial setting; intensive training in all components of systematic assessment and instruction emphasized; data recording and program modification included. *Prerequisite:* SPED 3405.

3425 Special Education for the Classroom Teacher (3-0)

Characteristics of the exceptional child with emphasis on the mildly handicapped in the regular classroom; individualization of instruction and adaptation of classroom techniques to meet the particular needs of this child.

3440 Vocational Education for the Exceptional Child (3-1)

Designed to provide special education teachers an understanding of terms and concepts of vocational education and training for the exceptional child; describes vocational education program models; field experience required. *Prerequisite:* SPED 3310.

3445 Practicum: Vocational Education for the Exceptional Child (1-4)

Introduces models and techniques of vocational training for the exceptional child; provides application in tutorial and classroom settings; includes data recording and program modification. *Prerequisites:* all courses in Generic Special Education teaching field with a GPA of 2.5 or better, and permission of instructor.

1450-6450 Independent Reading in Special Education (1-0 to 6-0)

Area of study will be designated; may be repeated for credit when topic changes.

3479 Practicum: Exceptional Child (1-4)

Identifies models of instruction for the exceptional child and provides an opportunity to apply these models in a tutorial situation; emphasizes all components of systematic assessment and instruction including data recording and program modification. *Prerequisites:* completion of all other courses in the Generic Special Education teaching field with a cumulative GPA of 2.5 or better, and permission of instructor.

Teacher Education (TED)

9492 Student Teaching in Special Education and the Elementary School (1-30)

Minimum of 225 hours of student teaching in a special education room and 225 hours in an elementary classroom plus 15 hours of seminars.

Educational Administration and Policy Studies

508 Education Building
(915) 747-5571, ext. 238

PROGRAM COORDINATOR: Ronald Lindahl

PROFESSORS: Heger, Klingstedt

ASSOCIATE PROFESSORS: Ball, Brooks, N. Kelly, Lindahl

Educational Research and Statistics (EDRS)

For Undergraduate Credit Only

3400 Elementary Educational Statistics (3-0)

Basic statistical concepts applied to education; includes descriptive and inferential statistics; measures of central tendencies, variables, correlations, elementary statistical inference through two-way analysis of variance.

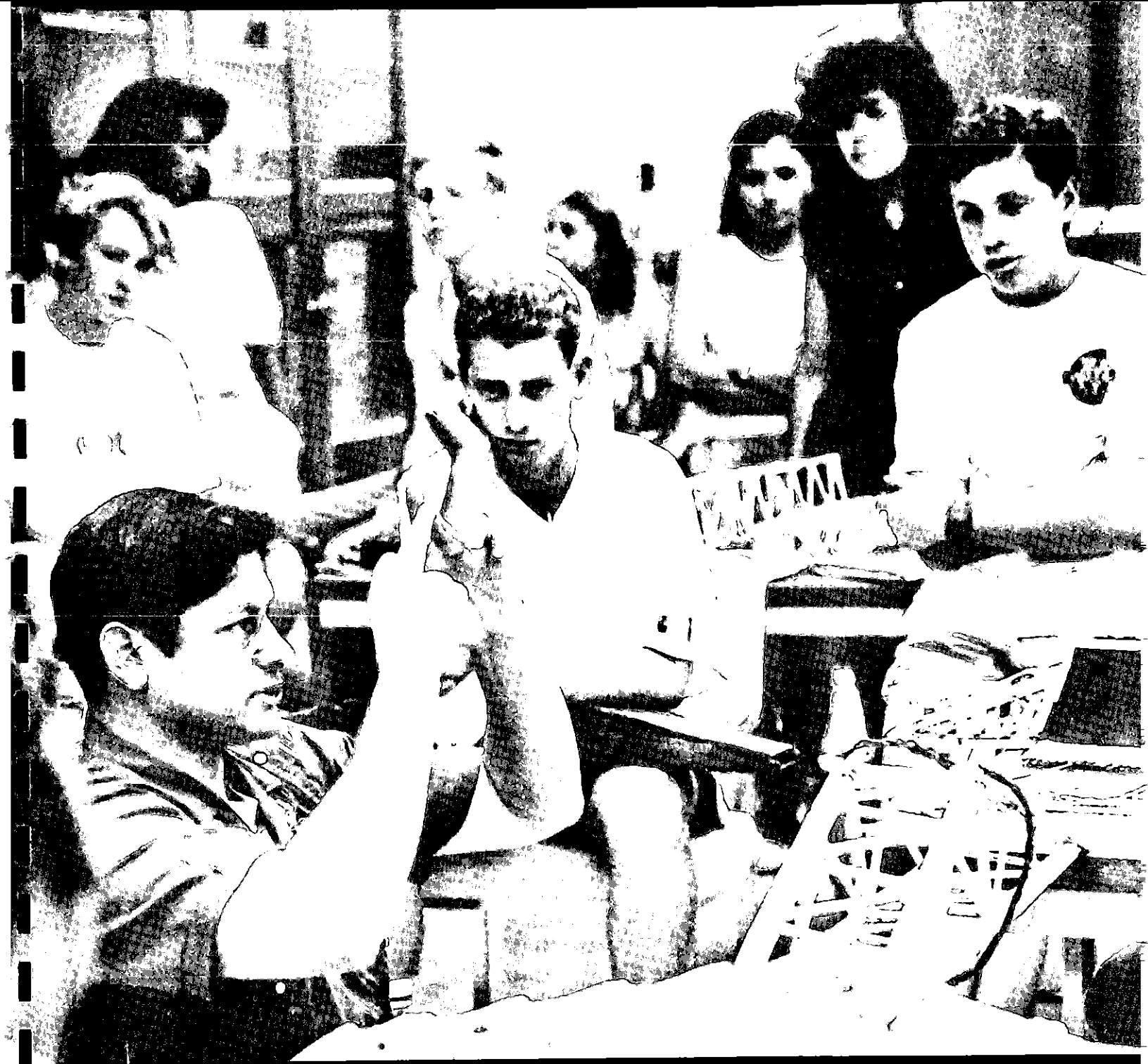
3410 Classroom Applications of Computer Technology (3-1)

Identifies effective application of computer hardware and software to elementary and secondary classroom tasks; develops knowledge and skills related to Computer Assisted Instruction (CAI) and Computer Managed Instruction (CMI); prepares classroom teachers to evaluate software for instructional use; computer laboratory required. *Prerequisite:* CS 3110, or permission of instructor.

Educational Computing (EDEC)

3210 Introduction to Educational Computing (3-0)

This course will address (1) the use of computers as instructional tools; (2) social, ethical, and educational implications of information technology; (3) appropriate software selection; and (4) the use of computers in teaching problem solving. An introduction to programming will be included to provide a better understanding of the functioning of technology.



**Civil Engineering
Computer Science
Electrical Engineering
Mechanical and Industrial Engineering
Metallurgical Engineering**

**Robert B. Grieves, Dean
Darrell C. Schroder, Assistant Dean
Engineering Building 230
(915) 747-5460**

**The College of
ENGINEERING**

General Information

Engineers enjoy one satisfaction that not everyone can claim — they can point to tangible evidence of their efforts. Every modern structure, computer, jet aircraft, power-generating plant, or new automobile design is a lasting testimonial to the engineers responsible for it. Thus, to a great extent, our current standard of living and high level of technology are due to the diligent and innovative efforts of engineers. Future accomplishments could help increase energy and food supplies, develop more contamination-free power plants, aid in medical science's fight against disease, and expand our computational and design skills beyond imagination. A notable researcher once capsuled the engineer's career satisfaction in pointing out that while scientists "explore what is," engineers "create what never has been."

The future for engineering graduates remains very bright. Our rapid pace of technological and industrial developments has established an ever-increasing need for highly talented and qualified professional engineers. In addition, the increasing demand for goods and services has imposed new challenges to present and future engineers. To provide these things and at the same time conserve resources and minimize environmental impact, engineers must recognize that solutions to long-standing societal problems are only found by thorough planning and study. With a capacity for problem solving, engineers may be the best qualified persons to address society's problems.

The complexities of today's economy and environment are such that all resources must be used in the best manner. Thus, the College of Engineering, through its curricula, strives to educate and train engineers who have the desire to learn and the breadth of vision to formulate and solve the problems of today and tomorrow. It is expected that a student who applies himself or herself and successfully completes one of the engineering or computer science programs will not only be technically prepared but also broadly educated, and thus ready to make a significant contribution to the world.

The College offers many programs of study which should be selected on the basis of personal ambitions, interests, and abilities. The student may choose the traditional B.S. degree and also consider advanced research-oriented graduate programs leading to the M.S. degree. Within the College, the undergraduate programs in electrical, civil, industrial, mechanical, and metallurgical engineering are accredited by the Accreditation Board for Engineering and Technology (ABET). The breadth of modern computer technology is covered by B.S. and M.S. degrees in Computer Science and a computer engineering option in Electrical Engineering. The program leading to the degree B.S.C.S. is accredited by The Computer Science Accreditation Commission.

To recognize outstanding achievement and encourage professional activities, each department has one or more active student sections of the appropriate professional and honor societies. Additionally, there are campus chapters and professional societies which cover all fields of engineering. Participation in these groups provides a valuable educational and professional experience and students are encouraged to participate to the extent of their eligibility.

Mathematics and English Preparation

In addition to the usual preparatory work, applicants to the College of Engineering are expected to have at least two years of algebra, one year of geometry, and one semester of trigonometry in preparation for their freshman year. Mathematics 4110 and English 3110 are not counted for credit toward any engineering degree. Students requiring these courses are urged to complete them during the summer term before entering the regular freshman program.

Transfer Course Work

A student may transfer a maximum of 66 semester hours, limited to lower division courses, from two-year junior or community colleges. A maximum of 100 semester hours of courses is transferable from accredited U.S. colleges and universities. Transfer credit for engineering courses is restricted to ABET accredited curricula or is awarded on the basis of departmental recommendation. Transfer students may be required to take competency exams and/or take specified courses which the department feels they must have in order to establish the quality of their degree. Credit for Upper Division engineering courses will be given only on the basis of departmental recommendation.

The academic records of all transfer students are reviewed by the College of Engineering to determine eligibility for admission into an engineering program. The minimum requirement for admission into the College is an overall GPA of 2.5 for all institutions attended. International students must meet the additional requirement of an overall minimum GPA of 3.0 in mathematics, chemistry, physics and engineering for all institutions attended.

All transfer credit that is to be applied toward undergraduate engineering degree requirements must be evaluated and approved by the Dean of Engineering. Transfer credit evaluation should be done when the student transfers to the College or before completion of the lower division requirements.

Change of Major

1. All petitions for change of major to or within the College of Engineering are subject to the approval of the chairman of the department gaining the student.
2. Any student enrolled in a non-engineering program at the University may change his or her major to a department in the College of Engineering if he or she has a minimum overall GPA of 2.5, has demonstrated an aptitude for the engineering profession and is qualified to enroll for Mathematics 4111 in his or her first semester of engineering.
3. Any student enrolled in an engineering program at the University may change his or her major to another department in the College of Engineering if he or she has a minimum overall GPA of 2.0 and earned a minimum GPA of 2.0 in the semester previous to applying for change of major.
4. All students entering the College of Engineering must follow the catalog (or a later catalog) that is in effect at the time of their transfer.

Lower Division Program

1. A student entering the College of Engineering must complete the designated lower division course block prior to enrolling in the upper division engineering sequence or any junior/senior classes.
 - a. Enrollment in the upper division courses prior to completion of the lower division requires permission of the student's department chairman and the Dean's Office.
 - b. Substitutions for the lower division course requirements require the permission of the student's department chairman and the Dean's Office.
2. Completion of the lower division block also requires a minimum 2.0 GPA for the lower division courses designated by the department and a 'C' or better in certain specified courses.
3. Any student who does not satisfy the 'C' minimum rule in the appropriately designated courses must repeat those courses.
4. Any student who has not met the requirements for satisfactory completion of the lower division block as stated above or who fails to make satisfactory progress toward a degree will be denied subsequent enrollment in the College of Engineering.

Course Repeat Policy

Any course taken by an engineering student may be repeated; generally, all grades earned in the course will remain on the student's record and will be used in the student's GPA calculation. There are two exceptions to this rule.

Upon approval of a petition by the student's department chairman and the Dean of Engineering, any course above freshman level may be repeated; all grades in the course will remain on the student's record, but the previously earned grade will not be used in the student's GPA calculation. The petition must be presented and approved before the student enrolls in a course for the second time. The petition will be approved only for the most exceptional circumstances.

Upon approval of a petition by the Dean of Engineering, any freshman level course may be repeated one time with the previously earned grade not used in the student's GPA calculation. The petition will be routinely approved. Upon approval of a petition by the student's department chairman and the Dean of Engineering, the course may be repeated a second time, and the previously earned grades will not be used in the student's GPA calculation. The petition for the second repeat of the course will only be approved for the most exceptional circumstances.

The following are deemed exceptional circumstances:

1. Death in the immediate family
2. *Serious illness — with sufficient supporting documentation*
3. Verifiable family or personal crisis.

Limit on Engineering Course Enrollments

The maximum number of times an engineering course can be taken is three. All enrollments in a course that result in a grade of A, B, C, D, F, or W will be counted. Once a student has reached the maximum of three enrollments, he or she will not be allowed to enroll in the course a fourth time. If the course is required in the student's degree plan, the student will not be able to complete the requirements for that degree.

Cooperative Education

Cooperative education is a program which integrates a student's formal academic study with special periods of practical work experience in business, industrial, governmental, professional, or service organizations. These work experiences are an integral part of the student's education, supplementing academic knowledge and promoting and encouraging personal development and professional preparation. The academic value of work completed under the cooperative education program is recognized by allowing credit to be earned for completion of three work periods and submission of a summary report. Contact the Dean of Engineering for information on the availability of co-op work assignments.

Five-Year Bachelor/Master of Science Program

The College of Engineering provides an opportunity for qualified students to participate in a five-year bachelor/master of science degree program. The program is structured presently to allow qualified engineering students the advantage of entering a graduate research or design program during the senior year of the bachelor's degree. During this fourth year the student may reserve certain courses for graduate credit, work actively on a research project for nine months, and may be considered for employment as a teaching or research assistant at the appropriate salary. Both the bachelor's and master's degrees can be completed in five years.

Graduate Study

Students who rank high in their undergraduate class should give serious consideration to developing their full intellectual potential in engineering by continuing with advanced studies at the graduate level. For those students interested in the practice of professional engineering, the master of science in engineering (MSE) degree should be given serious consideration. The program involves 33 hours of coursework without a thesis. Possible areas of specialization include business management, operations research, computer science and others.

The more traditional master of science (MS) degree is available in civil engineering, computer engineering, computer science, electrical engineering, industrial engineering, mechanical engineering, and metallurgical engineering. This degree is more research-oriented, normally requiring a thesis and up to 27 hours of graduate coursework.

Bachelor of Science in Civil Engineering

The Civil Engineering Program at the undergraduate level is broad based and provides courses in the major divisions of Civil Engineering, while at the same time offering an opportunity for specialization through junior and senior electives. These electives in (1) Environmental Studies, (2) Structures-Design, (3) Geotechnical Engineering, and (4) Transportation Engineering permit more in-depth study.

FRESHMAN YEAR

1st Semester		Hours
CE	3103 Introduction to Civil Engineering	3
CHEM	3105+ General Chemistry	3
ENGL	3111+ Expository English Composition	3
CE	3105 Graphic Fundamentals in Engineering Design	3
MATH	4111+ Calculus	4
		<hr/> 16

2nd Semester		Hours
ENGL	3112+ Research and Critical Writing	3
CS	4120+ Computer Programming for Scientists & Engineers	4
MATH	3112+ Calculus	3
HIST	3101 or 3103	3
CHEM	3106 ¹ + General Chemistry	3
CHEM	2106 ¹ + General Chemistry Lab	2
		<hr/> 18

SOPHOMORE YEAR

1st Semester		Hours
CE	3215+ Engineering Mechanics I	3
HIST	3102 or 3104	3
MATH	3213+ Calculus	3
PHYS	4211 Fields and Waves	4
POSC	3110 American Government	3
		<hr/> 16
2nd Semester		Hours
MECH	3238+ Engineering Mechanics II	3
CE	3234+ Mechanics of Materials I	3
MECH	3375+ Thermodynamics	3
MATH	3226+ Differential Equations	3
POSC	3111 American Government	3
		<hr/> 15

JUNIOR YEAR

1st Semester		Hours
CE	3313 Engineering Measurements	3
CE	3343 Structural Analysis I	3
MET	3203 ² Materials Selection	3
GEOL	3321 Geology for Engineers	3
Electives ³		6
		<hr/> 18
2nd Semester		Hours
IE	3326 Engineering Economy	3
MECH	4354 Fluid Mechanics	4
CE	4448 Soil Mechanics	4
CE	1336 Materials Laboratory	1
CE	3440 Transportation Engineering	3
Electives ³		3
		<hr/> 18

SENIOR YEAR

1st Semester		Hours
CE	3435 Structural Design I	3
CE	3441 Water Supply Engineering	3
EE	4377 Basic Electrical Engineering	4
CE	1495 Senior Professional Orientation	1
Electives ³		6
		<hr/> 17
2nd Semester		Hours
CE	4456 Hydraulic Engineering	4
CE	3442 Wastewater Engineering	3
CE	1453 Water & Waste Laboratory	1
CE	3461 Structural Design II	3
CE	3488 Senior Design	3
Electives ³		3
		<hr/> 17

Total Semester Credit Hours 135

+Grade of C or better required in these courses.
¹BIOL 3105+ and 1107+ or PHYS 4210+ may be substituted.
²Environmental program students should substitute Science elective approved by advisor.
³Students, in consultation with their advisor, should elect 18 hours of electives including 6 hours of Humanities or Social Sciences, 3 hours of Mathematics, 3 hours of Science, 3 hours of CE courses, 3 hours of additional electives approved by advisor.

Bachelor of Science in Computer Science

The Computer Science Program at the undergraduate level is designed to provide a strong base in programming skills, problem solving, theoretical understanding of computer science and practical experience in applying the computer to the solution of problems. Specialization is provided through numerous upper division electives.

FRESHMAN YEAR

		Hours
1st Semester		
CS	4101+ Introduction to Computer Science	4
ENGL	3111+ Expository English Composition	3
MATH	4111+ Calculus	4
POSC	3110 American Government	3
	Free elective	3
		17

2nd Semester		
MATH	3112+ Calculus	3
PHYS	4210+ Mechanics and Thermal Physics	4
PHYS	1120+ Physics Laboratory I	1
ENGL	3112+ Research and Critical Writing	3
HIST	3101 American History	3
	Free elective	3
		17

SOPHOMORE YEAR

1st Semester		
CS	4201+ Programming and Algorithms	4
MATH	3200+ Discrete Mathematics	3
MATH	3213+ Calculus	3
PHYS	4211+ Fields and Waves	4
PHYS	1121+ Physics Laboratory II	1
	Humanities/Social Science elective	3
		18

2nd Semester		
CS	3202+ Data Structures	3
CS	3220+ Introduction to Computer Architecture	3
MATH	3323 Matrix Algebra	3
POSC	3111 American Government and Politics	3
HIST	3102 American History	3
		15

JUNIOR YEAR

1st Semester		
CS	4332 Assembler Language Programming	4
CS	3330 Problem Oriented Programming Languages	3
MATH	3330 Probability or	3
EE	3484 Probabilistic Methods in Engineering & Science	3
	Technical elective	3
	Humanities/Social Science elective	3
		16

2nd Semester		
CS	3360 Design and Implementation of Programming Languages	3
CS	3335 Systems Programming	3
EE	4360 Computer Organization and Design	4
	Technical elective	3
	Humanities/Social Science elective	3
		16

SENIOR YEAR

1st Semester		
CS	3410 Software Engineering I	3
CS	1495 Senior Professional Orientation	1
MATH	3429 Numerical Analysis	3
CS	3350 Automata, Computability, & Formal Languages	3
	Technical elective	3
	Humanities/Social Science Elective	3
		16

2nd Semester		
CS	3411 Software Engineering II	3
IE	3389 Deterministic Operations Research	3
	Technical elective	3
	Technical elective	3
	Humanities/Social Science elective	3
		15
Total semester credit hours		
		130

For graduation a minimum GPA of 2.0 is required in the upper division Computer Science courses.

+Grade of C or better is required in these courses. Technical Electives must be advanced-level computer science or computer-related Electrical Engineering courses.

Humanities and/or Social Science Electives must be from the list approved by the Office of the Dean of Engineering.

Bachelor of Science in Electrical Engineering

The Electrical Engineering program includes two options, the General Electrical Engineering Option and the Computer Engineering Option. Both options are divided into two-year lower and upper divisions. The lower division provides diverse courses covering a broad base of technical subjects while the upper division provides the more specialized courses. The first option is more flexible and allows some specialization in communications, control, electronics, electrical power systems and computer systems. The Computer Engineering Option provides intense specialization in computer systems.

General Option

Freshman Year		
1st Semester		
EE	3105+ Introduction to Electrical Engineering	3
ENGL	3111+ Expository English Composition	3
CHEM	3105+ General Chemistry	3
MATH	4111+ Calculus	4
	Humanities and Social Science Electives	3
		16

2nd Semester		
ENGL	3112+ Research and Critical Writing	3
CHEM	3106+ General Chemistry	3
MATH	3112+ Calculus	3
HIST	3101 or 3103 American History	3
CS	4120+ Computer Programming for Scientists & Engineers	4
		16

SOPHOMORE YEAR

1st Semester		
MATH	3213+ Calculus	3
HIST	3102 or 3104 American History	3
POSC	3110 American Government	3
EE	1205+ Measurements Lab	1
PHYS	4210+ Mechanics and Thermal Physics	4
		14

2nd Semester

EE	3251+ Networks I	3
EE	1251+ Basic EE Lab	1
MATH	3226+ Differential Equations	3
POSC	3111 American Government	3
PHYS	4211+ Fields and Waves	4
MECH	3239+ Engineering Dynamics	3
		<hr/>
		17

JUNIOR YEAR

1st Semester

EE	1309 Computation Lab	1
EE	3339 Electronics I	3
EE	3352 Networks II	3
EE	3484 Probabilistic Methods	3
EE	3321 Electromagnetic Field Theory	3
PHYS	3325 Intro. to Modern Physics	3
		<hr/>
		16

2nd Semester

EE	2310 Electrical Engineering Lab I	2
EE	3340 Electronics II	3
	Approved Elective ¹	3
EE	3385 Energy Conversion	3
EE	3347 Electromagnetic Energy Transmission & Radiation	3
EE	3329 Electronic Materials	3
		<hr/>
		17

SENIOR YEAR

Two Semesters

EE	1495 Senior Professional Orientation	1
EE	2411 Electrical Engineering Lab II	2
EE	2412 Senior Project Lab	2
EE	3441 Communication Systems	3
EE	3450 Solid State Physical Electronics	3
EE	3464 Systems & Controls	3
IE	3326 Engineering Economy	3
	Approved Electives ¹	3
		<hr/>
		18
		<hr/>
		35

Total Semester Credit Hours 131

+Grade of C or better required in these courses.

¹Twenty-four hours of approved electives are required. Nine hours of electives must be in Humanities and Social Sciences. Three hours of electives must be in Mathematics. Twelve hours of electives must be technical courses and should normally be chosen from three and four hundred level courses. At least nine hours of technical electives must be in Electrical Engineering. The other technical elective must be in Engineering or the Biological or Physical Sciences.

Computer Engineering Option

FRESHMAN YEAR

1st Semester

		Hours
CHEM	3105+ General Chemistry	3
EE	3105+ Introduction to Electrical Engineering	3
MATH	4111+ Calculus	4
ENGL	3111+ Expository English Composition	3
	Humanities and Social Science Elective	3
		<hr/>
		16

2nd Semester

CHEM	3106+ General Chemistry	3
MATH	3112+ Calculus	3
ENGL	3112+ Research and Critical Writing	3
HIST	3101 or 3103 American History	3
POSC	3110 American Government	3
EE	1205+ Measurements Lab	1
		<hr/>
		16

SOPHOMORE YEAR

1st Semester

PHYS	4210+ Mechanics and Thermal Physics	4
MATH	3213+ Calculus	3
POSC	3111 American Government	3
HIST	3102 or 3104 American History	3
CS	4120+ Computer Programming for Scientists & Engineers	4
		<hr/>
		17

2nd Semester

PHYS	4211+ Fields and Waves	4
EE	3251+ Networks I	3
MATH	3226+ Differential Equations	3
	Approved Elective ¹	3
EE	1251+ Basic EE Lab	1
MATH	3323+ Matrix Algebra	3
		<hr/>
		17

JUNIOR YEAR

1st Semester

EE	1309 Computation Lab	1
EE	3376 Microcomputer Instrumentation	3
EE	1376 Microcomputer Instrumentation Lab	1
PHYS	3325 Introduction to Modern Physics	3
EE	3321 Electromagnetic Field Theory	3
EE	3352 Networks II	3
EE	3339 Electronics I	3
		<hr/>
		17

2nd Semester

EE	3329 Electronic Materials	3
EE	3369 Digital Systems Design I	3
EE	2310 Electrical Engineering Lab I	2
EE	3340 Electronics II	3
EE	3473 Minicomputers	3
EE	3484 Probabilistic Methods	3
		<hr/>
		17

SENIOR YEAR

1st Semester

EE	1495 Senior Professional Orientation	1
EE	3450 Solid-State Physical Electronics	3
EE	3478 Microprocessors and Interfacing	3
EE	1478 Microprocessors and Interfacing Lab	1
EE	3474 Operating Systems Design	3

2nd Semester

IE	3326 Engineering Economy	3
EE	3342 Digital Systems Design II	3
EE	1442 Digital Systems Design Lab	1
EE	2441 Electrical Engineering Lab II	2
EE	2412 Senior Project Lab	2
	Approved Electives ¹	12
		<hr/>
		34

Total Semester Credit Hours 134

+Grade of C or better required in these courses.

¹Eighteen hours of approved electives are required. Nine hours of electives must be in Humanities and Social Sciences. Nine hours must be either Electrical Engineering or Computer Science courses and must be chosen from three- or four-hundred level courses. At least three hours of electives must be in Electrical Engineering.

Bachelor of Science in Industrial Engineering

The Industrial Engineering Curriculum is designed for students who desire to enter industry or pursue advanced studies. The curriculum provides a broad range of courses in the areas of management of human resources, plant design, and operations research.

82/THE COLLEGE OF ENGINEERING

FRESHMAN YEAR

1st Semester		Hours
CE	3105 Graphic Fundamentals	3
IE	3101 Introduction to Industrial Engineering	3
ENGL	3111+ Expository English Composition	3
MATH	4111+ Calculus	4
HIST	3101 History of U.S. to 1865	3
		<u>16</u>

2nd Semester		
CS	4120+ Computer Programming for Scientists & Engineers	4
PHYS	4210+ Mechanics & Thermal Physics	4
ENGL	3112+ Research and Critical Writing	3
MATH	3112+ Calculus	3
CHEM	3105 General Chemistry	3
		<u>17</u>

SOPHOMORE YEAR

1st Semester		
CE	3215+ Engineering Mechanics I	3
PHYS	4211+ Fields & Waves	4
MATH	3213+ Calculus	3
Science Elective, GEOL 3101, 1101; BIOL 3105, 1107;		
CHEM	3106, 2106	4(5)
HIST	3102 History of U.S. since 1865	3
		<u>17(18)</u>

2nd Semester		
MECH	3238+ Engineering Mechanics II	3
IE	3216+ Ergonomics	3
IE	3236+ Manufacturing Processes	3
CE	3234+ Mechanics of Materials I	3
MATH	3226+ Differential Equations	3
POSC	3110 American Government & Politics	3
		<u>18</u>

JUNIOR YEAR

1st Semester		
ECON	3204 Principles of Economics	3
MECH	3375+ Thermodynamics I	3
IE	3377 Methods Engineering	3
MATH	3323 Matrix Algebra	3
ACCT	3309 Survey of Accounting	3
POSC	3111 American Government & Politics	3
		<u>18</u>

2nd Semester		
IE	3389 Deterministic Operations Research	3
EE	3484 Probabilistic Methods	3
EE	4377 Basic EE	4
MECH	4354 Fluid Mechanics	4
IE	3326 Engineering Economy	3
		<u>17</u>

SENIOR YEAR

1st Semester		
IE	3492 Probabilistic Operations Research	3
IE	3491 Production and Inventory Control	3
IE	3432 Safety Engineering	3
IE	1495 Senior Professional Orientation	1
Physics Elective (PHYS 3320, 3323, 3325, 3428, 3448)		3
Humanities Elective		3
		<u>16</u>

2nd Semester		
IE	3484 Industrial Layout	3
IE	3485 Statistical Quality Control and Reliability	3
IE	4466 Senior Design	3
IE	3493 Engineers and Managing	3
Humanities Elective		3
		<u>16</u>

Total Semester Credit Hours 135(136)

+Grade of C or better required in these courses.
 1Approved IE Technical Electives: MECH 3305, 3376, 3411, 3468; CE 3313, 4390, 3438; MET 3309; EE 3473; CS (any 33XX or 34XX course); MATH 34XX; MGMT 3315, 3300; BLAW 3301; FIN 3410.

Bachelor of Science in Mechanical Engineering

The Mechanical Engineering curriculum is designed for students who desire to enter industry or pursue advanced studies. The curriculum provides a broad range of courses in the areas of thermal sciences, fluid mechanics, and mechanical design.

FRESHMAN YEAR

1st Semester		
CE	3105 Graphic Fundamentals	3
MECH	3101+ Introduction to Mechanical Engineering	3
ENGL	3111+ Expository English Composition	3
MATH	4111+ Calculus	4
POSC	3110 American Government and Politics; or HIST 3101 or 3103 History of U.S.	3
		<u>16</u>

2nd Semester		
CS	4120+ Computer Programming for Scientists & Engineers	4
PHYS	4210+ Mechanics and Thermal Physics	4
ENGL	3112+ Research and Critical Writing	3
MATH	3112+ Calculus	3
CHEM	3105 General Chemistry	3
		<u>17</u>

SOPHOMORE YEAR

1st Semester		
CE	3215+ Engineering Mechanics I	3
MATH	3213+ Calculus	3
Science Elective, GEOL 3101, 1101; BIOL 3105, 1107;		
CHEM	3106, 2106	4(5)
MET	3203 Materials Selection	3
POSC	3110 American Government and Politics; or HIST 3101 or 3103 History of U.S.	3
		<u>16(17)</u>

2nd Semester		
MECH	3238+ Engineering Mechanics II	3
IE	3236 Manufacturing Processes	3
MECH	3241+ Engineering Analysis	3
MATH	3226+ Differential Equations	3
POSC	3111 American Government and Politics; or HIST 3102 or 3104 History of U.S.	3
Humanities Elective		3
		<u>18</u>

JUNIOR YEAR

1st Semester		
PHYS	4211 Fields & Waves	4
CE	3234+ Mechanics of Materials I	3
MECH	3363 Kinematics of Mechanisms	3
MECH	3375+ Thermodynamics I	3
POSC	3111 American Government and Politics; or HIST 3102 or 3104 History of U.S.	3
		<u>16</u>

2nd Semester		
EE	4377 Basic Electrical Engineering	4
MECH	3367 Dynamics of Machinery	3
MECH	3305 Basic Measurements and Instrumentation	3
MECH	4354 Fluid Mechanics	4
MECH	3376 Thermodynamics II	3
		<u>17</u>

SENIOR YEAR

1st Semester		
MECH	4451 Heat Transfer	4
MECH	3464 Senior Analysis	3
IE	3326 Engineering Economy	3
Math Elective, MATH 3335 or 3436		3
Humanities Elective		3
MECH	1495 Senior Professional Orientation	1
		<u>17</u>

2nd Semester

	Physics Elective, PHYS 3323, 3351, 3325, or 3448	3
MECH	4466 Senior Design	4
	Approved Electives ¹	6
MECH	4465 Dynamic Responses	4
		<u>17</u>
Total Semester Credit Hours		134(135)

+Grade of C or better required in these courses.
¹Approved electives are: MECH 3411, 3412, 3442, 3455, 3456, 3468, 3471, 3487; IE 3432, 3389, 3465, 3484, 3485, 3493; MET 3416.
 A student may petition the departmental Curriculum Committee for an exception to the above list.

Bachelor of Science in Metallurgical Engineering

The Metallurgical Engineering curriculum is a broad based program designed to provide a basic education in the three areas of metallurgy — extractive, process and physical. The student can specialize in one or more areas in the junior and senior year by taking appropriate elective courses. The program is well suited for a career in industry or as a basis for graduate study. Courses related to advanced materials topics are also available.

FRESHMAN YEAR

1st Semester

		Hours
CHEM	3105+ General Chemistry	3
ENGL	3111+ Expository English Composition	3
MATH	4111+ Calculus	4
MET	3101+ Introduction to Metallurgy	3
CE	3105 Graphic Fundamentals	3
		<u>16</u>

2nd Semester

CHEM	3106+ General Chemistry	3
CHEM	2106+ Chemistry Lab	2
ENGL	3112+ Research and Critical Writing	3
MATH	3112+ Calculus	3
MET	3102+ Metallurgical Engineering Fundamentals	3
CS	4120 Computer Programming for Scientists & Engineers	4
		<u>18</u>

SOPHOMORE YEAR

1st Semester

MET	3205+ Chemical & Metallurgical Process Analysis	3
MET	3203+ Materials Selection	3
MATH	3213+ Calculus	3
PHYS	4210 Mechanics and Thermal Physics	4
CE	3215+ Mechanics I	3
		<u>16</u>

2nd Semester

MET	3206+ Transport Processes	3
MET	3208+ Applied Thermodynamics	3
MATH	3226+ Differential Equations	3
PHYS	4211 Fields & Waves	4
POSC	3110 American Government and Politics	3
		<u>16</u>

JUNIOR YEAR

1st Semester

MET	4306+ Physical Metallurgy I	4
CHEM	3351 Physical Chemistry	3
CE	3234+ Mechanics of Materials	3
HIST	3101/3103 History of U.S. to 1865	3
	Humanities/Social Science Elective ¹	3
		<u>16</u>

2nd Semester

MET	4304+ Process Metallurgy I	4
MET	4307+ ³ Physical Metallurgy II	4
MET	3309+, 3314+ or 3315+ or 3321+ ⁴	3
POSC	3111 American Government and Politics	3
HIST	3102/3104 History of U.S. from 1865	3
		<u>17</u>

SENIOR YEAR

1st Semester

MET	4305 Process Metallurgy II	4
MET	1495 Senior Professional Orientation	1
MET	4417 Instruments & Control	4
	Math Elective ²	3
	Metallurgy Elective ^{4,5}	3
	Humanities/Social Science Elective ¹	3
		<u>18</u>

2nd Semester

MET	4413 Structural Characterization	4
MET	4418 Metallurgical Design	4
	Metallurgy Electives ^{4,5}	6
IE	3326 Engineering Economy	3
		<u>17</u>

Total Semester Credit Hours 134

+Grade of "C" or better required. A "C" or better is required in all Metallurgy courses through the junior year.

¹Humanities/Social Science Electives: Check current list of approved courses.

²Math Elective: MECH 3241, MATH 3280, 3323, 3335 or a MATH course approved by advisor.

³Students in the materials engineering option should substitute MET 4405 for MET 4307 and take MET 3309 or 3314 as electives.

⁴Students interested in physical metallurgy take MET 3321, and those following the materials engineering option take MET 3309 and 3314.

⁵Electives offered are Physics of Materials (3309), Advanced Materials Concepts (3314), Engineering Alloys (3321), Corrosion (3409), Materials Fabrication (4405), Failure Analysis (3416).

Civil Engineering

201B Engineering Science Complex
 (915) 747-5464

CHAIRMAN: Wayne F. Echelberger, Jr.
 PROFESSORS EMERITI: Howard G. Applegate, Ralph M. Coleman
 PROFESSORS: Bartel, Echelberger, Grieves, Hassler
 ASSOCIATE PROFESSORS: Fuentes, Oey, Rozendal, Tarquin
 ASSISTANT PROFESSORS: Nazarian, Osegueda, Picornell-Darder

Civil Engineering (CE)

For Undergraduates
General prerequisite: All upper division undergraduate courses (X3XX, X4XX) in Civil Engineering have an additional prerequisite: Junior standing in Civil Engineering or written permission of the instructor.

3103 Introduction to Civil Engineering (3-0)
 A general introduction to the fields of Civil Engineering; the responsibilities and duties of the professional Civil Engineer; and a preparation for the study of Civil Engineering.

3105 Graphic Fundamentals in Engineering Design (2-4)
 Freehand projection, fundamentals of multiview projections, auxiliaries, sections, detailed drawings, dimensioning, and pictorials.

3215 Engineering Mechanics I (3-0)
 Forces in space, equilibrium of particles and rigid bodies, friction, centroids, centers of gravity. *Prerequisite:* MATH 4111.

3234 Mechanics of Materials I (3-0)

Study of stress, strain, torsion, shear, moment, flexure, combined stresses and column action. *Prerequisite:* CE 3215.

3301 Pollution and Natural Resources (3-2)

Study of man's environment and its demands upon our resources. Emphasis will be on pollutants and their effect upon air, water and food resources. Open to all students. Not an approved technical elective for engineering majors.

3313 Engineering Measurements (2-3)

Theory and practice of surveying measurements with emphasis on precision, errors, and significant figures, the use of the level, transit, and engineer's tape. *Prerequisites:* CE 3105 and a knowledge of FORTRAN. Laboratory Fee: \$8.

3314 Route Surveying (2-3)

Theory of simple, compound, reverse, and spiral curves, and computation of earth work. *Prerequisite:* CE 3313. Laboratory Fee: \$8.

3325 Environmental Engineering Fundamentals (3-0)

Introduction to the engineering aspects of environmental systems to include such topics as water quality management, air pollution and control, solid and hazardous waste management, environmental impact assessment, and governmental regulation. *Prerequisite:* Junior standing in engineering or science.

1336 Engineering Materials Laboratory (0-3)

Laboratory practice in manufacture and testing of concrete, steel, wood, and plastic specimens; instrumentation work in the measurement of stresses and strains. *Prerequisite:* CE 3234. Laboratory Fee: \$8.

3343 Structural Analysis (3-0)

A study of framed structures, trusses, girders, beams including applications of static and moving loads and bridges. *Prerequisite:* CE 3234.

4390 Introduction to Air Pollution (3-3)

Classification of air pollutants and their effects on man, animals, plants and the environment; meteorological aspects of air pollution; sources of air pollution; plume characteristics; units of measurement; physical properties of dusts, gases, and aerosols. *Prerequisites:* Junior standing in engineering or sciences and approval of instructor. Laboratory Fee: \$8.

2396 Air Pollution Laboratory (1-3)

Sampling and analytical technique; atmospheric sampling equipment for dusts, aerosols, and gases; meteorological instruments; quantitative field measurements of air pollutants, air quality survey. *Prerequisites:* Junior standing in engineering or science and approval of instructor. Laboratory Fee: \$8.

For Undergraduates and Graduates

2425 Construction Equipment, Methods, and Project Control (2-0)

An introduction to the equipment, methods of construction and techniques of project control in the construction industry. Building, highway, and heavy-type construction equipment, methods of construction, operating characteristics, project safety, and project quality control will be discussed.

3435 Structural Design I (3-0)

Reinforced concrete theory; design of beams, columns, slabs, footings and retaining walls using current design specifications. *Prerequisites:* CE 3343 and 1336.

3438 Traffic Engineering Fundamentals (3-0)

Study and planning of ground, water, and air transportation facilities with emphasis on traffic investigations control and operation. *Prerequisite:* Junior standing.

3440 Transportation Engineering (3-0)

Study of planning, economics, finance, location, design and administration of transportation systems. *Prerequisite:* CE 3313 or concurrent enrollment.

3441 Water Supply Engineering (3-0)

Principles of water supply and the application of those to the design and operation of municipal and industrial water systems. *Prerequisites:* IE 3326, MECH 4354.

3442 Wastewater Engineering (3-0)

Principles of waste-water collection, treatment and disposal and their application to the design and operation of municipal and industrial waste-water systems. *Prerequisites:* IE 3326, and MECH 4354.

3446 Engineering Law (3-0)

A study of the law of contracts, sales, negotiable instruments, insurance, property, torts, agency and business organizations. *Prerequisites:* Senior standing in engineering and approval of the instructor.

3447 Ethics in Engineering (3-0)

A case study of ethics and ethical relationships as they apply to the practicing engineer. *Prerequisites:* Senior standing, and permission of the instructor.

4448 Soil Mechanics (3-3)

Physical and mechanical properties of soils, plasticity, shrinkage, permeability, seepage consolidation shear strength. Rankine and Coulomb earth pressure, braced cuts. *Prerequisites:* CE 3234, MECH 4354, GEOL 3321. Laboratory Fee: \$8.

3449 Foundation Engineering (3-0)

Subsoil exploration spread footings, mat foundations, retaining wall, sheet pile structures, braced cuts, pile foundations, caissons. *Prerequisite:* CE 4448.

1453 Water and Waste Laboratory (0-3)

Laboratory analysis of water and wastes. *Prerequisites:* Concurrent enrollment in CE 3441 or 3442. Laboratory Fee: \$8.

4456 Hydraulic Engineering (3-3)

Essential principles of hydraulics and hydrology, demonstrated in the laboratory and applied to the design of hydraulic structures. *Prerequisite:* MECH 4354.

4460 Structural Analysis II (3-3)

Analysis of statically indeterminate structures including continuous beams and frames. *Prerequisite:* CE 3343.

3461 Structural Design II (3-0)

Design of steel structures including the application of plastic design methods using current design specifications. *Prerequisite:* CE 3343.

4470 Mechanics of Materials II (3-3)

Analysis of problems dealing with energy methods, curved bars, torsion of noncircular sections, fatigue, stress concentration, stress and strain, and experimental methods of stress determination. *Prerequisites:* CE 3234 and Senior standing.

1471-2471-3471 Engineering Problems—Seminar (1-0) (2-0) (3-0)

Original investigation of special problems in the student's field, the problem to be selected by the student with the approval of the head of the department. *Prerequisites:* Senior standing and consent of the head of the department. Can be repeated for credit.

1481-1482-1483 Co-op Work Experiences (1-0)

Work experience in business, industrial, governmental, professional, service, or other organizations to provide on-the-job training and professional preparation in the student's area of interest. A report covering the work experience must be submitted by the student to the departmental Co-op coordinator at the end of each work period. Upon completion of his or her third work period and submission of a report summarizing the total work experience, a student can use three hours of Co-op Work Experience in his or her degree plan in place of a technical elective or elective in the major. *Prerequisite:* Selection by the Co-op Coordinator, department chairman and employer.

3488 Senior Design (1-6)

Conceptual, preliminary and final design projects. *Prerequisites:* Minimum of 115 hours of Civil Engineering Curriculum completed.

1495 Senior Professional Orientation (1-0)

Introduction to the Engineering profession with emphasis on job placement, professional ethics and an engineering field examination. Required of all students prior to graduation.

See the *Graduate Studies Catalog* for graduate programs and courses.

Computer Science

301 Engineering Science Complex
(915) 747-5470

CHAIRMAN: Stephen Riter

ASSOCIATE PROFESSORS: Bernat, Gelfond, Patterson,
Przymusinska, Williams

ASSISTANT PROFESSORS: Cooke, Starner

LECTURER: Bell

Computer Science (CS)

For Undergraduates

4101 Introduction to Computer Science (3-3)

An introduction to computers, problem solving, programming environments including editors, compilers and loaders, and to elementary Pascal through arrays. Prerequisite to all other courses for the major in Computer Science. *Corequisite: MATH 4110.*

3105 Computers and Society (3-0)

An introduction to computers, their uses by individuals, businesses and government and their potential for abuse. Provides a framework for understanding the potential impact of computers on society. May not be counted towards the major in Computer Science.

3110 Introduction to Computer Programming (3-0)

Fundamentals of computers including software, hardware, impact on society and beginning programming in a high-level language, such as FORTRAN, BASIC, LOGO, etc. Designed for students not engaged in mathematically oriented studies. *Prerequisite: MATH 4109 or equivalent.*

4120 Computer Programming for Scientists and Engineers (3-3)

Introduction to computers and problem solving with digital computers. A detailed study of the FORTRAN language with applications to selected numerical methods. Emphasizes solution of scientific and engineering oriented problems. Includes the BASIC language. *Corequisite: MATH 4111.*

4201 Programming and Algorithms (3-3)

Continuation of CS 4101 including the remainder of the PASCAL language. Introduction to algorithmic analysis including searching, sorting, string processing and recursion. *Prerequisites: CS 4101 and MATH 4111.*

3202 Data Structures (3-0)

Abstract data types, representation of data using sets, lists, trees and graphs. Storage allocation and collection techniques. *Prerequisites: CS 4201 and MATH 3200.*

3220 Introduction to Computer Architecture (3-0)

The organization and structuring of the major hardware components of computers; the mechanics of information transfer and control within a digital computer system; the fundamentals of logic design; machine instructions; addressing techniques. *Prerequisites: CS 4201 or CIS 3235 and MATH 3200.*

3330 Problem Oriented Programming Languages (3-0)

A detailed study of one or more modern programming languages (C, Ada, Module-2, LISP, PROLOG, etc.), which is of particular value in a student's area of interest. Languages will be taught in rotation. May be repeated once for credit as a technical elective when the application area of the programming language differs. *Prerequisite: CS 3202.*

4332 Assembler Language Programming (3-3)

Symbolic coding of instructions and data, macro definition and use, subroutines and linkage, input/output handling at the assembly level, and the structure of assemblers. *Prerequisite: CS 3220.*

3333 Basic Concepts In Computer Science (3-0)

Introduction to the fundamentals of data types (lists, trees, sets, graphs, etc.), searching and sorting, context-free languages, finite automata, and Turing Machines. May not be counted toward the major in Computer Science. *Prerequisite: CS 4120 or CIS 3235 and CS 4201.*

3335 Systems Programming (3-0)

The design and implementation of the programming environment including editors, compilers, loaders and linkers, debuggers and operating systems. *Prerequisites: CS 3202 and CS 4332.*

3350 Automata, Computability and Formal Languages (3-0)

Languages and their grammars. Chomski's classification of abstract languages. The connections between languages, machines, and neural networks. Finite and infinite automata; their structure, capabilities and limitation. *Prerequisites: CS 3202 or CS 3333, and MATH 3323.*

3360 Design and Implementation of Programming Languages (3-0)

Design features of modern programming languages including flow control mechanism and data structures; techniques for implementation of these features. *Prerequisite: CS 3330.*

3370 Computer Graphics (3-0)

An introduction to representation and display of graphical information including line, character and curve generation. Emphasis on two-dimensional techniques. *Prerequisites: CS 3202 or CS 3333, and MATH 3323.*

3410 Software Engineering I (3-0)

Design techniques including top-down design and development, information security and stepwise refinement. Organizing and managing software system development including milestones, estimating, teams, walk-throughs and documentation. *Prerequisite: CS 3335.*

3411 Software Engineering II (3-0)

Implementation of the project designed in CS 3410 providing practical experience in the design and implementation of large programming projects. *Prerequisite: CS 3410.*

3416 Computer Networks (3-0)

Introduction to data communication topics, including data transmission, encoding, link control, multiplexing, switching, network topologies, protocols, internetworking, data security, and distributed systems. Examples of systems such as ALOHA, ARPANET, and ETHERNET are studied. *Prerequisite: MATH 3330, or EE 3484, or equivalent.*

3420 Artificial Intelligence (3-0)

Introduction to basic concepts and techniques of artificial intelligence including knowledge representation, search strategies, symbolic logic, expert systems and applications. *Prerequisite: CS 3350 or 3333.*

3442 Data Base Management (3-0)

Introduction to data base concepts, hierarchical, network and relational data models, data description and query languages, file and index organization, and file security and integrity. Both mainframe and small computer approaches will be covered. *Prerequisite: CS 3202 or CS 3333.*

3450 Systems Simulation (3-0)

Introduction to the topic and techniques of systems simulation. Topics include modeling, continuous-system and discrete-system simulation and the simulation languages GPSS and SIMSCRIPT. *Prerequisites: CS 3202 or CS 3333 and MATH 3330.*

3452 Translation of Programming Languages (3-0)

The structure of compilers and interpreters. Lexical analysis, syntax analysis and formal description of programming languages. Semantic analysis, intermediate languages and optimization. Compiler writing languages and bootstrapping. *Prerequisite:* CS 3333 or CS 3350.

1471-3471 Computer Science Problems (1-0, 3-0)

Original investigation of special problems in the student's area of interest, the problem being selected by the student in consultation with the instructor and with the permission of the Chairman of the Computer Science Department. *Prerequisites:* Senior standing in Computer Science and permission of the instructor.

3475 Theory of Operating Systems (3-0)

Topics include multiprocessing, time sharing and real time systems, scheduling and resource allocation, virtual memory, paging and segmentation, file management. *Prerequisite:* CS 3335 or CS 3330.

1481-1482-1483 Co-op Work Experiences (1-0)

Work experience in business, industrial, governmental, professional, service, or other organizations to provide on-the-job training and professional preparation in the student's area of interest. A report covering the work experience must be submitted by the student to the departmental Co-op coordinator at the end of each work period. Upon completion of his or her third work period and submission of a report summarizing the total work experience, a student can use three hours of Co-op Work Experience in his or her degree plan in place of a technical elective or elective in the major. *Prerequisite:* Selection by the Co-op Coordinator, department chairman and employer.

3490 Special Topics in Computer Science (3-0)

Selected topics of current interest in Computer Science. May be repeated once for credit when topic varies. *Prerequisites:* Senior standing in Computer Science and permission of the instructor.

1495 Senior Professional Orientation (1-0)

Introduction to the Computer Science profession with emphasis on job placement and professional ethics. Senior standing in Computer Science. Required of all students prior to graduation. Offered in the Fall semester only.

See the *Graduate Studies Catalog* for graduate programs and courses.

Electrical Engineering

301 Engineering Science Complex
(915) 747-5470

CHAIRMAN: Stephen Riter

PROFESSORS: Austin, Gibson, McDonald, Pierluissi, Riter, Schroder

ASSOCIATE PROFESSORS: Liu, Manoli, Singh, Williams

ASSISTANT PROFESSORS: Alafodimos, Izquierdo, Nemir, Shadaram

Electrical Engineering (EE)

For Undergraduates

General Prerequisite: Junior standing for all 300 or 400 level courses.

3105 Introduction to Electrical Engineering (3-0)

An exposure to the mathematical and physical concepts which are essential to the field of electrical engineering. Includes applications at an elementary level in the areas of networks, measurements, semiconductor electronics, energy conversion and digital computers. *Prerequisite:* MATH 4110. Must be taken prior to registration for EE 3251.

1205 Measurements Laboratory (1-2)

Introduction to Electrical Engineering laboratory procedures, causes, and correction of errors in measurements, theory of operation and usage of basic Electrical Engineering test instruments, report writing. *Prerequisite:* EE 3105. Laboratory Fee: \$8.

1251 Basic Electrical Engineering Laboratory (1-2)

Introduction to oscilloscopes, oscillators and function generators, transient RLC network experiments and nodes, fundamental laboratory procedures, laboratory manual preparation. *Prerequisite:* EE 1205 concurrently with EE 3251. Laboratory Fee: \$8.

3251 Networks I (3-0)

Theory and analysis of electrical networks including basic fields and circuits concepts, Kirchhoff's laws, mesh and nodal analysis, and an introduction to the sinusoidal steady state. *Prerequisites:* MATH 3226 or concurrently.

1309 Computation Laboratory (1-2)

Introduction to the use of microcomputer systems in solving electrical engineering problems to include program documentation, the use of text editors, operating systems and utility programs. *Prerequisites:* CS 4120, EE 3251.

2310 Electrical Engineering Laboratory I (1-4)

Introduction to experimental analysis of bipolar junction transistors, junction field effect transistors, switching power supplies, amplifiers and oscillators. Includes digital circuits and introduction to transducers. *Prerequisite:* EE 3339. Laboratory Fee: \$8.

3321 Electromagnetic Field Theory (3-0)

Fundamentals of static electric and magnetic fields, time-varying fields and Maxwell's equations, motion of charged particles in electromagnetic fields. *Prerequisite:* EE 3251.

3329 Electronic Materials (3-0)

Study of dielectric, magnetic and optical properties of materials used in electrical engineering. *Prerequisites:* PHYS 3325 and EE 3321.

3339 Electronics I (3-0)

Electronic properties of materials, terminal characteristics of semiconductor devices, graphical methods, two-port network analysis, small-signal equivalent circuits, frequency response methods, root-locus analysis. *Prerequisite:* EE 3251.

3340 Electronics II (3-0)

Application of the concepts and methods developed in Electronics I to large- and small-signal tuned amplifiers and broad-band amplifiers. Concepts of wave-shaping, waveform generation, and switching are developed. *Prerequisites:* EE 3339 and 3352.

3352 Networks II (3-0)

Continuation of theory and analysis of electrical networks. Includes sinusoidal steady state analysis, frequency plots, Fourier analysis, network theorems, two-port networks. *Prerequisite:* EE 3251.

4360 Computer Organization and Design (3-3)

Introduction to Boolean Algebra and digital circuit design, microprocessor architecture and programming, and general computer organization. Laboratory exercises in digital logic and practical applications of microprocessors. Not intended for EE majors. *Prerequisite:* CS 4120 or equivalent or permission of the instructor. Laboratory Fee: \$8.

4377 Basic Electrical Engineering (3-3)

Principles of electric circuits, transformers, generators and motors, including motor applications with static and automatic feedback control thereof. Not intended for EE majors. *Prerequisite:* Junior standing in engineering or permission of the instructor. Laboratory Fee: \$8.

For Undergraduates and Graduates

Prerequisite for graduate credit: At least twelve semester hours of undergraduate credit in Engineering.

3347 Electromagnetic Energy Transmission and Radiation (3-0)

Derivation and application of the general transmission-line equations, propagation and reflection of plane waves, analysis of waveguide transmission systems, electromagnetic radiation and simple antenna systems. *Prerequisite:* EE 3321.

3369 Digital Systems Design (3-0)

Design and synthesis of digital systems using both combinational and sequential circuits. *Prerequisites:* EE 3376 or concurrently.

3376 Microcomputer Instrumentation (3-0)

Introduction to digital design and microprocessors. Topics include traditional digital systems design techniques including Boolean algebra and logic design and an introduction to microprocessors. *Prerequisites:* EE 3105, CS 4120 and EE 1376 concurrently.

1376 Microcomputer Instrumentation Laboratory (0-3)

Design and implementation of microprocessor systems. *Prerequisite:* EE 3376 concurrently.

3385 Energy Conversion (2-3)

Theory and performance characteristics of electro-mechanical energy conversion equipment to include transformers and both d-c and a-c generators and motors and the control devices employed therewith. (2 credit hours lecture and 1 credit hour laboratory.) *Prerequisite:* EE 3352. Laboratory Fee: \$4.

2411 Electrical Engineering Laboratory II (1-4)

Experimental introduction to modulation, communication and IF transformers, transmission lines, wave guides and antenna measurements. Emphasis on laboratory investigation using specialized instrumentation. *Prerequisite:* EE 2310 and 3340 or concurrently. Laboratory Fee: \$8.

2412 Senior Project Laboratory (1-4)

Laboratory development of special projects concerned with various electrical systems. Small group or individual semester projects are stressed. *Prerequisite:* EE 2411. Laboratory Fee: \$8.

3441 Communication Systems (3-0)

Advanced topics in communications, including frequency analysis of signals, modulation, noise, information, transmission, and statistical methods in system analysis. *Prerequisites:* EE 3352 and 3484.

3442 Digital Systems Design II (3-0)

Advanced topics in digital systems design. Emphasis is placed on the design and implementation of digital systems with standard MSI and LSI integrated circuits. *Prerequisite:* EE 3369 and 1442, concurrently.

1442 Laboratory for Electrical Engineering 3442 (0-3)

Design and laboratory implementation of digital systems using standard, integrated circuits. *Prerequisite:* EE 3442 concurrently.

3443 Design with Linear Integrated Circuits (3-0)

Emphasis on the characteristics and design applications of standard linear integrated circuits, including amplifier, communications, control systems, signal processing, optoelectronics, digital systems interfacing and transducer applications. *Prerequisite:* EE 3340.

3450 Solid-State Physical Electronics (3-0)

Theory and application of solid-state physical electronics; p-n junctions, surface controlled devices, integrated circuits, optoelectronics, switching and microwave devices. *Prerequisite:* EE 3329.

3464 Systems and Controls (3-0)

Continuous systems: transfer functions, characteristics, stability, methods of design. Discrete systems; z-transforms, relation to continuous systems, state variable concepts, characteristics, stability and methods of design. *Prerequisites:* MECH 3238 and EE 3352 and EE 3484.

1471-1471 Engineering Problems--Seminar (1, 2, 3-0)

Original investigation of special problems in the student's field, the problem to be selected by the student with the approval of the head of the department. *Prerequisite:* Senior standing or consent of the head of the department. May be repeated for credit.

3473 Minicomputers (3-0)

Minicomputer architecture, introduction to interfacing, assembler language programming, and real-time operating systems. *Prerequisite:* Assembler language programming experience.

3474 Operating Systems Design (3-0)

Study, design and implementation of operating systems. Topics include interrupt handling, system resource management, file organization and hardware consideration. A case study of an existing real time operating system. *Prerequisite:* EE 3473 or concurrently.

3478 Microprocessors and Interfacing (3-0)

A study of microprocessors and their companion LSI devices, detailed examination and use of a selected microcomputer with emphasis on programming and interfacing. *Prerequisites:* EE 3369, 3442 or consent of instructor and EE 1478 concurrently.

1478 Laboratory for Electrical Engineering 3478 (0-3)

The use of microcomputer development system and microprocessor-based design stations. *Prerequisite:* EE 3478 concurrently.

3480 Microwave Communications (3-0)

Primarily a terminal undergraduate course concerning high frequency energy generation and transmission. Topics include microwave oscillators, principles of solid-state microwave devices, propagation of radio waves in the atmosphere and the ionosphere, and atmospheric absorption of radio wave energy. *Prerequisite:* EE 3347 or equivalent.

1481-1482-1483 Co-op Work Experiences (1-0)

Work experience in business, industrial, governmental, professional, service, or other organizations to provide on-the-job training and professional preparation in the student's area of interest. A report covering the work experience must be submitted by the student to the departmental Co-op coordinator at the end of each work period. Upon completion of his or her third work period and submission of a report summarizing the total work experience, a student can use three hours of Co-op Work Experience in his or her degree plan in place of a technical elective or elective in the major. *Prerequisite:* Selection by the Co-op Coordinator, department chairman and employer.

3481 Electro-Optical Engineering (3-0)

A general introduction to the principles, techniques, and systems that deal with the portion of the electromagnetic spectrum between optical and radio waves. Special emphasis is placed on laser and maser physics and applications. *Prerequisite:* EE 3347 or concurrently.

3482 Antenna Engineering (3-0)

A broad introduction to antenna engineering with emphasis on design principles and applications, includes radiation fundamentals used in modern array systems, reflectors and frequency independent antennas, together with the associated measurements of their characteristics. *Prerequisite:* EE 3347 or concurrently.

3483 Digital Signal Processing (3-0)

Introduction to discrete systems, signals and signal processing. Topics include digital filter design, z-transforms and fast Fourier transforms (FFT) as well as the applications of FFT's. *Prerequisite:* EE 3352.

3484 Probabilistic Methods In Engineering and Science (3-0)

Problems involving discrete and continuous random variables, distribution functions, moments, and statistical dependence. Emphasis to be on formulation of physical problems.

3485 Biomedical Instrumentation (3-0)

An introduction to basic concepts in biomedical instrumentation, blood flow measurements, biopotential amplifiers and electrodes as well as electrical safety of medical equipment. *Prerequisite:* EE 3340.

3486 Power System Analysis (3-0)

A study of the characteristics of transmission lines and their current and voltage relations; generalized circuit constants; representations of power systems; load flow studies; faults on lines and machines; and stability problems. *Prerequisite:* EE 3385 or permission of instructor. Offered Fall semesters.

3487 Computational Techniques for Power Systems Analysis (3-0)

The solution of complex networks using computationally efficient algorithms. Modeling and simulation of power system components under dynamic conditions. The use of minicomputer in analysis and control of power systems. Examples using University and departmental computer facilities. *Prerequisite:* EE 3385 or permission of instructor.

3495 Special Topics in Electrical Engineering (3-0)

Selected topics of current interest in Electrical Engineering. May be repeated once for credit when topic varies. *Prerequisites:* Senior standing in engineering and permission of the instructor.

1495 Senior Professional Orientation (1-0)

Introduction to the engineering profession with emphasis on job placement, professional ethics and an engineering field examination. Required of all students prior to graduation.

See the *Graduate Studies Catalog* for graduate programs and courses.

Mechanical and Industrial Engineering

101 Engineering Science Complex
(915) 747-5450

CHAIRMAN: J. P. Hsu

PROFESSORS EMERITI: Kenneth Scott Edwards, John A. Whitacre, Jr.
PROFESSORS: Dowdy, J.P. Hsu, Levosky, McLean

ASSOCIATE PROFESSORS: Bhaduri, Craver, Herrera, Hu, Johnson, Swift

ASSISTANT PROFESSORS: Hasiuk, Hawkins, T. W. Hsu, Villeda

Mechanical Engineering (MECH)

For Undergraduates

General Prerequisite: Junior standing for all 300 or 400 level courses.

3101 Introduction to Mechanical Engineering (3-0)

A general introduction to Mechanical Engineering; engineering problem presentations and solutions in the areas of energy, mechanics, and thermodynamics; the application of mathematical principles to engineering problem solutions.

3104 Preview of Engineering (2-3)

Role of the engineer in modern society. Engineering math, demonstrations in Civil, Electrical, Industrial, Mechanical, and Metallurgical Engineering. Elementary computer programming.

3238 Engineering Mechanics II (2-3)

Principles of dynamics and their application, work and energy, impulse and momentum, and kinetics and kinematics of particles and rigid bodies. *Prerequisites:* CE 3215 and MATH 3112.

3239 Engineering Dynamics (3-0)

A broad coverage of dynamics applied to engineering problems; a review of vector algebra; kinematics of particles; kinetics of particles including Newton's second law, work and energy, impulse and momentum; mechanical vibrations, electrical analogues. *Prerequisite:* MATH 3213.

3241 Engineering Analysis (3-0)

Applications of mathematical principles to the analysis of engineering problems; derivation and solution of mathematical models of physical systems occurring in the study of Mechanical Engineering. *Prerequisites:* CS 4120 and MATH 3226 or concurrently.

3305 Basic Measurements and Instrumentation (2-3)

The theory and fundamentals of physical measurements, study of characteristics of dynamics signals, study of basic detector-transducer elements and applied mechanical measurements. *Prerequisites:* MATH 3226, MECH 3238, and CE 3234. Laboratory Fee: \$6.

4354 Fluid Mechanics (3-3)

Fluid properties and definitions, fluid statics, fluid flow concepts and basic equations, dimensional analysis and dynamic similitude, viscous effects; fluid resistance, laminar and turbulent boundary layers, flow through pipes and fluid measurement. *Prerequisites:* MECH 3375, MATH 3226. Laboratory Fee: \$6.

3363 Kinematics of Mechanisms (2-3)

Analysis of displacement, velocity, and acceleration in mechanisms; technology and design of gears, gear trains, cams, linkages. *Prerequisites:* MECH 3238 and 3241 or concurrently.

3367 Dynamics of Machinery (3-0)

Forces in machine members, balance of machinery; critical speeds; three dimensional analysis; gyroscopic forces. *Prerequisite:* MECH 3363.

3375 Thermodynamics I (3-0)

Principles of thermodynamics of single and multi-phase systems of pure substances. *Prerequisites:* MATH 3112, CHEM 3105, PHYS 4210.

3376 Thermodynamics II (3-0)

Continuation of MECH 3375. Application of principles of cycles and reactive systems; energy relationships and equilibrium requirements. *Prerequisite:* MECH 3375.

For Undergraduates and Graduates

Prerequisite for graduate credit: At least twelve hours of undergraduate credit in Engineering.

3411 Automatic Controls (3-0)

A study of classical control theory including transfer function, stability and time response, error analysis and sensitivity functions, root locus, Nyquist diagrams and Bode Plots; the analog computer as a simulation tool particularly as pertains to non-linear control systems. Also, an introduction to modern control theory is presented. *Prerequisites:* Senior standing and permission of instructor.

3412 Fluid Power and Control Systems (3-0)

Fundamentals of fluid power system design; fluid power transmissions; basic circuit and control components; fluid power circuits and circuit design. *Prerequisite:* MECH 4354 or permission of instructor.

3442 Introduction to Hybrid Computation (3-0)

Introduction to hybrid computer applications. Solution to mechanical engineering problems using modern analog-digital methods. *Prerequisite:* MATH 3226.

3443 Robotics and Automated Manufacturing (2-3)

The use of robots and other automated equipment in manufacturing including feeding systems, input-output mechanisms and the design of parts for automatic assembly. *Prerequisites:* Senior standing in Engineering and permission of the instructor.

4451 Heat Transfer (3-3)

Introduction to heat transfer by conduction, convection, and radiation; steady and transient states; steady periodic states. Heat transfer in engineering apparatus. *Prerequisites:* MECH 3241, 3305, and 4354. Laboratory Fee: \$6.

3455 Gas Dynamics (3-0)

A study of the flow of compressible fluids. One-dimensional steady flow, supersonic flow, normal and oblique shock, flow with heating and cooling, measurement of fluid properties and flow parameters. *Prerequisites:* MECH 4354, 3376 and 3241.

3456 Applications of Solar Energy (3-0)

A study of the uses of solar energy with emphasis on the heating and cooling of residences and commercial buildings. Team projects in the design of systems and subsystems. *Prerequisite:* MATH 3226 or permission of instructor.

3464 Senior Analysis (2-3)

Stress analysis; deflection analysis; strength of mechanical elements; design of screws, fasteners, and joints, clutches, brakes, and couplings, shafting. *Prerequisites:* CE 3234, MECH 3241 and 3305.

4465 Dynamic Response (3-3)

Fundamentals of vibration theory and system response. Single and multiple degrees of freedom, damping, isolation. *Prerequisites:* MECH 3305 and 3367.

4466 Senior Design (2-6)

Conceptual, preliminary and final design solutions to problems furnished by industry, handled on team basis. *Prerequisites:* MECH 3464 and 4451.

3468 Environmental Control Engineering (3-0)

A study of theory and practice leading to the design of heating and air conditioning systems to control environments in buildings for human comfort. *Prerequisites:* Senior standing in engineering and permission of instructor.

3471 Engineering Problems—Seminar (0-9)

Original investigation of special problems in the student's field; the problems to be selected by the student with approval of the department chairman. *Prerequisites:* Senior standing and permission of the department chairman. *May be repeated for credit.*

1481-1482-1483 Co-op Work Experiences (1-0)

Work experience in business, industrial, governmental, professional, service, or other organizations to provide on-the-job training and professional preparation in the student's area of interest. A report covering the work experience must be submitted by the student to the departmental Co-op coordinator at the end of each work period. Upon completion of his or her third work period and submission of a report summarizing the total work experience, a student can use three hours of Co-op Work Experience in his or her degree plan in place of a technical elective or elective in the major. *Prerequisite:* Selection by the Co-op Coordinator, department chairman and employer.

3487 Aerodynamics (3-0)

Introduction to the aerodynamics of flight vehicles. One-dimensional flow of a perfect gas, shock, and expansion waves, converging-diverging nozzles; subsonic, supersonic, and hypersonic flows. Evaluation of aerodynamic loads on flight vehicles, including aerodynamics and characteristics of various types of power plants for a wide range of Mach numbers. *Prerequisites:* MECH 4354 and 3376 or permission of instructor.

3495 Special Topics in Mechanical Engineering (3-0)

Selected topics of current interest in Mechanical Engineering. May be repeated once for credit when topic varies. *Prerequisites:* Senior standing in engineering and permission of the instructor.

1495 Senior Professional Orientation (1-0)

Introduction to the Engineering profession with emphasis on job placement, professional ethics and an engineering field examination. Required of all students prior to graduation.

See the *Graduate Studies Catalog* for graduate programs and courses.

Industrial Engineering (IE)

For Undergraduates

3101 Introduction to Industrial Engineering (3-0)

A general introduction to Industrial Engineering; engineering problem presentations and solutions in the areas of manufacturing, production control, quality control, operations research, and methods engineering; a preparation for the study of Industrial Engineering.

3216 Ergonomics (2-3)

Introduction to design of man-machine systems; application of ergonomics to manufacturing environment; use of anthropometric data in design; limitations of human performance; effects of environmental stress on work performance, safety and health. Laboratory Fee: \$6.

3236 Manufacturing Processes (2-3)

Theory and practice of metal cutting, finishing, product measurement and inspection; shop demonstrations and visits to area factories. Laboratory Fee: \$6.

3326 Engineering Economy (3-0)

Application of economics to engineering and industrial problems which require a knowledge of engineering for their solution. *Prerequisite:* MATH 3112.

3377 Methods Engineering (2-3)

Study of operations analysis, methods analysis, and work design techniques used in manufacturing and service industries. Macro and micro motion analyses, systematic time standards, labor standard data development, and their relations to line balancing, machine loading, and management control are studied. *Prerequisite:* IE 3236. Laboratory Fee: \$6.

3389 Deterministic Operations Research (3-0)

An introduction to deterministic optimization models. These include the concepts of operations research modeling, classical optimization, linear and dynamic programming, network analysis. Current topics in deterministic modeling are included. *Prerequisite:* MATH 3323.

For Undergraduates and Graduates

3432 Safety Engineering (3-0)

A study of man-machine environment and the accident cause-effect relationship. Provides an analytic structure through which safety decision-making can be performed in light of changes in the legal, management, and technical aspects of industrial safety. *Prerequisite:* Senior standing.

3465 Project Planning and Control (3-0)

Application of quantitative techniques to the planning and control of engineering projects. Includes PERT/CPM, project scheduling and control, linear programming, and queuing theory. Open only to non-BSIE students. *Prerequisite:* MATH 3226.

4466 Senior Project (2-6)

A detailed investigation and analysis of industrial engineering problems furnished by industry, handled on a team basis. A formal written report presenting the solution to the problem is required. *Prerequisite:* Senior standing.

3471 Undergraduate Seminar (0-9)

Original investigation of special problems in the student's field; the problem to be selected by the student with approval of the head of the department. *Prerequisites:* Senior standing and permission of the head of the department. *May be repeated for credit.*

1481-1482-1483 Co-op Work Experiences (1-0)

Work experience in business, industrial, governmental, professional, service, or other organizations to provide on-the-job training and professional preparation in the student's area of interest. A report covering the work experience must be submitted by the student to the departmental Co-op coordinator at the end of each work period. Upon completion of his or her third work period and submission of a report summarizing the total work experience, a student can use three hours of Co-op Work Experience in his or her degree plan in place of a technical elective or elective in the major. *Prerequisite:* Selection by the Co-op Coordinator, department chairman and employer.

3484 Industrial Layout (2-3)

The design, selection and layout of buildings and equipment for proper utilization in manufacturing. *Prerequisite:* Senior standing or permission of instructor.

3485 Statistical Quality Control and Reliability (3-0)

The statistical design of systems for prescribed quality levels and prevention of defects. *Prerequisite:* EE 3484 or equivalent.

3491 Production and Inventory Control (3-0)

A study of the principles and theory used in the design and maintenance of production operations and inventory systems. These include forecasting techniques, inventory models, production control models and assembly line balancing. *Prerequisites:* IE 3389 and EE 3484 or equivalent.

3492 Probabilistic Operations Research (3-0)

An introduction to probabilistic optimization including queuing theory, Monte Carlo techniques of simulation, project scheduling and basic Markov processes. Current topics in probabilistic modeling are included. A project is an integral part of the course. *Prerequisite:* EE 3484 or equivalent.

3493 Engineers and Managing (3-0)

Study of industrial organizations, supervision and compensation of personnel, labor unions and group interaction, from the engineering management viewpoint. *Prerequisite:* Senior standing.

3495 Special Topics in Industrial Engineering (3-0)

Selected topics of current interest in Industrial Engineering. May be repeated once for credit when topic varies. *Prerequisites:* Senior standing in engineering and permission of the instructor.

1495 Senior Professional Orientation (1-0)

Introduction to the Engineering profession with emphasis on job placement, professional ethics and an engineering field examination. Required of all students prior to graduation.

See the *Graduate Studies Catalog* for graduate programs and courses.

Metallurgical Engineering

M201 Engineering Science Complex
(915) 747-5468

INTERIM CHAIRMAN: Stephen W. Stafford
PROFESSORS EMERITI: Lonnie L. Abernethy, Joseph C. Rintelen, Jr.
PROFESSOR: Stafford
ASSOCIATE PROFESSORS: Bronson, Fisher, Varma
ASSISTANT PROFESSORS: McClure, Mutso

Metallurgical Engineering (MET)

For Undergraduates

General Prerequisite: Junior standing for all 300 or 400 level courses.

3101 Introduction to Metallurgy (3-0)

An elementary course describing the role of materials in society, the extraction of metals from ores, the fabrication of metals and alloys into useful products, and the selection and application of metals and alloys for industrial applications. Open to all students.

3102 Metallurgical Engineering Fundamentals (3-0)

Classroom demonstrations and group projects will be used to develop the methods of problem solving; data collection, analysis and presentation; and technical communication. *Prerequisites:* CHEM 3105, MATH 4111 or permission of instructor, MET 3101 and ENGL 3111 or concurrently.

3203 Materials Selection (3-0)

An introduction to the relationship between structure and composition and the physical and mechanical properties of metals, ceramics and plastics. Emphasis is placed on selection and application of materials for a variety of engineering problems. *Prerequisite:* CHEM 3106.

3205 Chemical and Metallurgical Process Analysis (3-0)

Introduction to stoichiometry, process variables, data analysis and the first law of thermodynamics. Application of material and energy balances to chemical and metallurgical processes. *Prerequisites:* MATH 4111, CHEM 3106 and MET 3102.

3206 Transport Processes in Metallurgical Engineering (3-0)

Introduction to reaction kinetics, fluid flow and heat transfer with applications to metallurgical processes. *Prerequisites:* MET 3102 and MATH 3112.

3208 Applied Thermodynamics (3-0)

A continued study of thermodynamics in which the first, second and third laws of thermodynamics are applied to metallurgical and chemical systems. Topics include thermochemistry, chemical equilibria, phase equilibria, activity, solutions, electrolytes and electrochemical potential. *Prerequisite:* MET 3205.

For Undergraduates and Graduates

3301 Materials and Society (3-0)

This course is intended to introduce students in non-engineering fields to the role of materials in modern society. Topics that will be covered include sources of materials, use and importance of strategic materials, dependence of modern society on materials supply,

mining and metals recovery vs. environmental considerations, the role of materials in international relations, recycling of materials and other topics of current interest. This course may not be counted toward a degree in engineering.

4304 Process Metallurgy I (3-3)

Analysis of unit operations involved in mineral processing, hydrometallurgy and electrometallurgy using the principles of material and energy balance, fluid flow, heat transfer, reaction kinetics and thermodynamics. *Prerequisites:* MET 3205, 3206, 3208 or CHEM 3351. Laboratory Fee: \$10.

4305 Process Metallurgy II (3-3)

Analysis of the unit processes involved in pyrometallurgy, vapor phase metallurgy, gas treatment and material recycling using the principles of material and energy balance, fluid flow, heat transfer, reaction kinetics and thermodynamics. *Prerequisite:* MET 4304. Laboratory Fee: \$6.

4306 Physical Metallurgy I (3-3)

The underlying principles of physical metallurgy dealing with structure-property relationships will be covered. Topics will include structure and elementary electron theory, defects, annealing, solid solutions, diffusion, nucleation and growth, solidification and phase analysis. *Prerequisites:* MET 3203 and 3206. Laboratory Fee: \$10.

4307 Physical Metallurgy II (3-3)

The basic relationships introduced in MET 4306 are extended in order to permit the student to relate specific processes to the metallic state. Topics will include twinning, martensite, Fe-C system, fracture, creep, dislocation theory, plastic deformation, strengthening mechanisms and mechanical testing. *Prerequisite:* MET 4306 or permission of instructor. Laboratory Fee: \$10.

3309 Physics of Materials (3-0)

A study of the solid state emphasizing the electrical semiconductor, magnetic, optical and superconductor properties of materials. *Prerequisites:* PHYS 4210 and 4211. May be taught in alternate years.

3314 Advanced Materials Concepts (3-0)

The nature, properties, processing and applications of ceramic and polymeric materials. *Prerequisite:* MET 4306 or concurrently or permission of instructor.

3316 Extractive Metallurgy (3-0)

This course is designed for science students minoring in metallurgical engineering and engineering students who desire a background in metal recovery and refining techniques. This course will cover unit operations basic to metal extraction and refining. Emphasis will be placed on the extractive metallurgy of iron, copper, aluminum, magnesium, uranium and titanium. Other metals will be discussed to a limited extent. This course may not be counted toward a degree in metallurgical engineering. *Prerequisites:* CHEM 3105 and 3106.

3321 Engineering Alloys (3-0)

The study of the selection and specification of engineering alloys for use in industrial applications. Topics related to ferrous and non-ferrous metals in the cast, wrought, powder and particle state will be covered. *Prerequisite:* MET 4306 or permission of instructor.

4405 Materials Fabrication (3-3)

Fundamentals of metalworking, forging, rolling, extrusion and drawing; sheet metal forming, welding, joining and casting. *Prerequisites:* MET 3203 and upper division standing. Laboratory Fee: \$10.

3409 Corrosion (3-0)

Application of electrochemistry and engineering principles to the corrosion, passivity and protection of metals and alloys. *Prerequisite:* MET 3203 or permission of instructor.

4413 Structural Characterization (3-3)

The application of modern instrumentation and techniques to structural characterization problems. Both theory and operation will be stressed. X-Ray analysis, electron microscopy (TEM-SEM) and electron probe analysis will be included. *Prerequisite:* MET 4307 or permission of instructor. Laboratory Fee: \$10.

3416 Failure Analysis (3-0)

The mechanisms of materials failure, failure analysis techniques and non-destructive testing methods are discussed with emphasis on analysis and interpretation of case studies. *Prerequisites:* MET 3203 and CE 3234.

4417 Instruments, Measurements and Control in Metallurgical Processes (3-3)

Basic electrical circuits and electronics. Theory and application of instrumentation to measurement problems in metallurgical engineering including interface of measurement and control devices with a digital computer. Experiments employ basic devices to measure quantities such as temperature, pressure, force, strain, gas and liquid flow, and electrochemical potential. *Prerequisites:* MET 3205, 3206, PHYS 4210 and 4211. *Laboratory Fee:* \$10.

4418 Metallurgical Design (3-3)

Fundamentals of metallurgical process design including materials development, plant design, cost estimation and profitability. The Lab involves design problems assigned to small groups and will require intermediate reports, a final report and an oral presentation. *Prerequisites:* MET 4304, 4305, 4306, 4307 and IE 3326 or concurrently.

1471-3471 Special Engineering Problems Seminar (1-0, 2-0, 3-0)

Original investigation of special problems in the student's field, the problem to be selected by the student with the approval of the head of the department. *Prerequisites:* Senior standing and consent of the head of the department. May be repeated for credit up to 6 hours.

1475-3475 Undergraduate Research in Metallurgy

Supervised individual research. May be repeated for credit as study topic changes. Can only be substituted for Metallurgy electives or technical electives. *Prerequisite:* Senior standing, a 3.0 grade point average and permission of the faculty member who is to supervise the research.

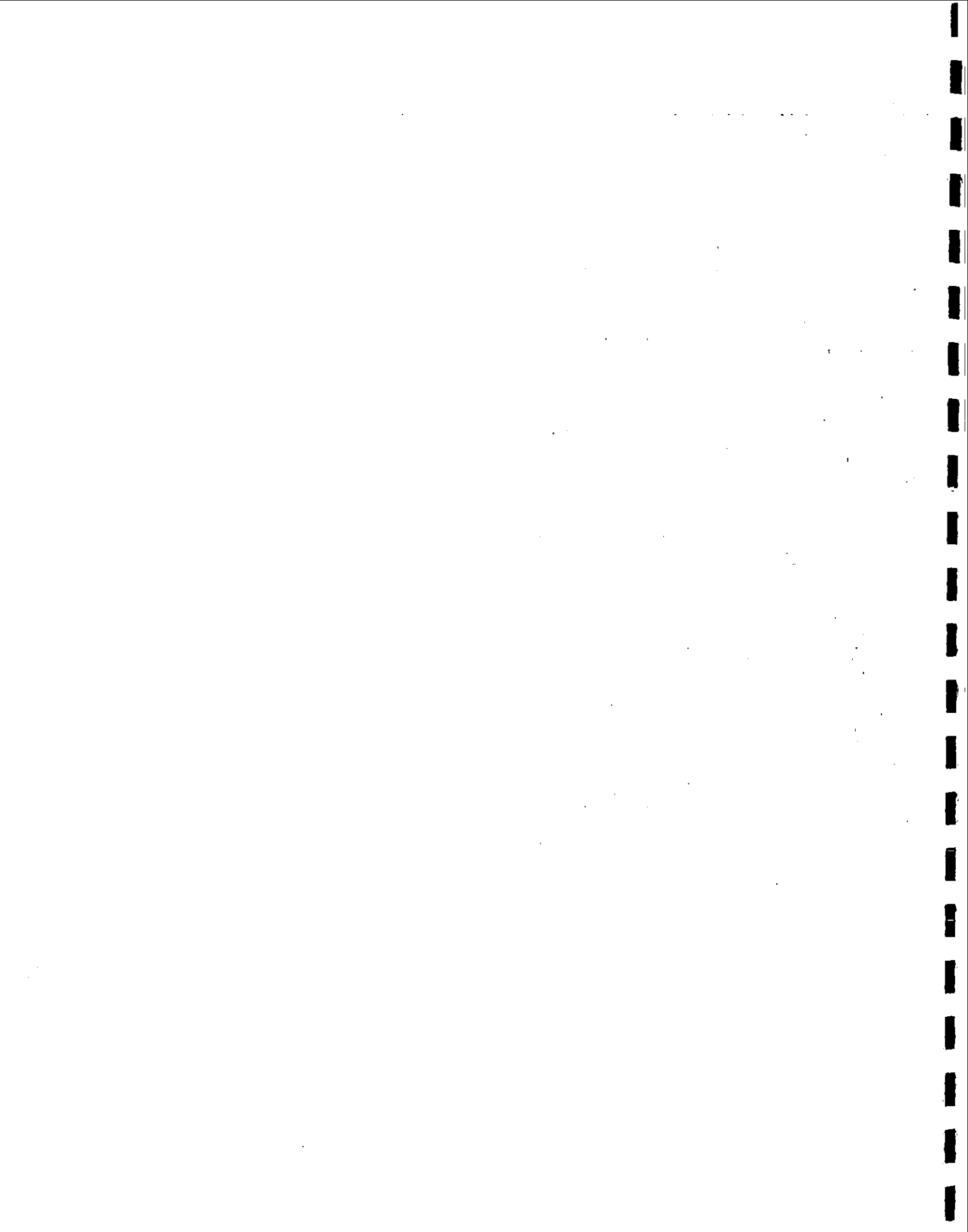
1481-1482-1483 Co-op Work Experiences (1-0)

Work experience in business, industrial, governmental, professional, service, or other organizations to provide on-the-job training and professional preparation in the student's area of interest. A report covering the work experience must be submitted by the student to the departmental Co-op coordinator at the end of each work period. Upon completion of his or her third work period and submission of a report summarizing the total work experience, a student can use three hours of Co-op Work Experience in his or her degree plan in place of a technical elective or elective in the major. *Prerequisite:* Selection by the Co-op Coordinator, department chairman and employer.

1495 Senior Professional Orientation (1-0)

Introduction to the engineering profession with emphasis on job placement, professional ethics and an engineering field examination. Required of all students prior to graduation.

See the *Graduate Studies Catalog* for graduate programs and courses.





Aerospace Studies
Art
Chicano Studies
Communication
Criminal Justice
English
History
Latin American Studies
Languages and Linguistics
Military Science
Music
Philosophy

Psychology
Religious Studies
Social Work
Sociology and
Anthropology
Theatre Arts
Western Cultural Heritage
Women's Studies

James V. Devine, Dean
Ralph W. Ewton, Assistant Dean
Kathleen A. Staudt, Assistant Dean
Ray Small, Dean Emeritus
Liberal Arts Building 350
(915) 747-5666

The College of LIBERAL ARTS

Introduction

The College of Liberal Arts, the largest of the six undergraduate colleges, traces its origins to the earliest days of the State School of Mines. Courses in such areas as history, English, Spanish, and art were offered almost from the beginning of the school's history. In July 1931 the institution (then known as The Texas College of Mines and Metallurgy) was authorized to offer the Bachelor of Arts degree; by 1940-41, students taking courses in the arts and sciences far outnumbered those in engineering. The change of name in 1949 to Texas Western College served as recognition of the institution's development as primarily a college of arts and sciences. In 1967, when the School of Arts and Sciences was divided into four Schools — Liberal Arts, Business Administration, Education, and Science — Liberal Arts became a separate academic unit. The name "School" was changed to "College" in 1974.

The College of Liberal Arts offers a wide range of programs and courses in the humanities, the fine arts, and the social sciences. These programs include major fields of specialized study and minor fields in both specific academic areas and interdisciplinary study. Elective courses taught within the College provide students with further opportunities for intellectual and aesthetic growth.

The College faculty, through teaching, research, and performance on a variety of levels, exemplify their commitment to the values of liberal arts education: a focus on what is fundamental and enduring in human civilization; a respect for and fostering of intellectual diversity; and the development of skills in communication, analysis, and evaluation. Students who receive a liberal arts education are exposed to certain values which offer them an opportunity for success in a wide variety of fields, a foundation for later professional study, and the crucial ability to adapt to change. The College seeks to prepare students for their professional careers and for a lifetime of learning, intellectual growth, and personal enrichment.

Degrees and Majors

Bachelor of Arts

The BA degree is offered in the following major fields: Anthropology, Art, Broadcasting, Chicano Studies, English, French, German, History, Journalism, Latin American Studies, Linguistics, Music, Philosophy, Political Science, Psychology, Sociology, Spanish, Speech, and Theatre Arts; also Biology, Chemistry, Economics, Geology, Mathematics and Physics.

Requirements for the Bachelor of Arts degree are designed to provide an essential unity in the programs of all Liberal Arts students and at the same time to offer each student substantial latitude in course selection. The degree consists of a minimum of 128 semester hours, including at least 45 at the advanced (300-400) level. Twenty-four of the last 30 hours must be taken in residence. No course taken to satisfy one degree area requirement (general education core, major, minor) may be used to satisfy any other area requirement.

General Education Core (65-68 hours)

- 9-12 Communication Skills: ENGL 3111, 3112 and SPCH 3101; or ENGL 6111 and 3112; or ESOL 3111-2111, 3112-2112, 3104, and 3203 (for international students and others who are not native speakers of English).
- 6 U.S. History: HIST 3101-3102 or 3103-3104.
- 6 Government: POSC 3110 and 3111.
- 6 One Modern or Classical Language, complete 3201-02 in French, German, Italian, Latin, Portuguese, Russian; in Spanish either 3201-02 or 3203-04.
- 9 Western Cultural Heritage: HUMN 3301, 3302, 3303.
- 3 Mathematics/Statistics: any course offered by the Department of Mathematical Sciences except MATH 3105, 3121, 3203, 3303, and 3304 — MATH 3120 is recommended for liberal arts majors; or PSYC 3103; or SOCI 3212.
- 8 Science: to be selected from BIOL 3105-1107, 3106-1108; CHEM 4107, 4108; GEOG 3106; GEOL 3101-1101, 3102-1102; PHYS 4103, 4104; or ASTR 3107-1107, 3108-1108. (Hyphenated courses should be taken concurrently.)
- 6 Social/Behavioral Science: select one three-hour course from each of two of the following disciplines: Anthropology, Economics, Geography (3110, 3309, 3311, 3312), Linguistics (3220, 3307, 3357), Psychology, or Sociology.

- 6 Fine Arts: select one three-hour course from each of two of the following disciplines: Art, Music, or Theatre Arts.
- 3 Literature: to be selected from advanced (300-400) level literature courses offered by the English Department or the Languages and Linguistics Department (French, German, Italian, Latin, Portuguese, Russian, Spanish).
- 3 Philosophy: to be selected from PHIL 3302, 3311, 3313, 3314, 3325, or 3335.

Students who are not familiar with the use of computers are encouraged to enroll in a Computer Science course (preferably CS 3110).

Credit for courses taken to fulfill these general education core requirements may not also be used to satisfy major or minor field requirements.

Major Field (27-36 hours)

Complete a major prescribed by an academic department in the College of Liberal Arts (or Science or Business Administration [for the Economics major]) of at least 27 hours, 18 of which must be advanced (300-400 level). See individual departmental listings in this Catalog for specific major field requirements.

Nine of the advanced hours in the major must be completed in residence within three years prior to the date of graduation. No course taken on a Pass/Fail basis may be counted for the major, even though the student changes majors after having taken the course. A completed degree plan must include a minimum grade point average of C (2.0) in the major. Credit for courses taken to fulfill the major field requirements may not also be counted to satisfy general education core or minor field requirements.

Minor Field (18 hours)

Complete a minor of at least 18 hours, nine of which must be advanced (300-400 level). The minor field must be selected from a discipline different from that of the major field. Credit for courses taken to fulfill the minor field requirements may not also be counted to satisfy general education core or major field requirements. No course taken on a Pass/Fail basis may be counted for the minor, even though the student changes minors after having taken the course. A completed degree plan must include a minimum grade point average of C (2.0) in the minor. See individual departmental listings in this Catalog for specific minor requirements.

Liberal Arts minor fields are available in Anthropology, Art History, Communication, Criminal Justice, English, French, German, History, Linguistics, Music, Philosophy, Political Science, Psychology, Sociology, Spanish, and Theatre Arts. See departmental listings for requirements.

Interdisciplinary minors are also available. However, no more than six hours from a student's major field may be counted toward such a minor, and courses so counting may not help satisfy the major requirement. In addition, no more than nine hours from any one discipline will be counted as part of such a minor. Students electing an interdisciplinary major may not elect an interdisciplinary minor. The following are approved interdisciplinary minors: Asian and African Studies, Border Studies, Chicano Studies, Latin American Studies, Military Studies, Religious Studies, Soviet and East European Studies, Translation (Spanish/English), Urban Studies, and Women's Studies. (See Interdisciplinary Minors, p. 95.)

Minors may also be selected from the following approved disciplines in other colleges:

General Business Minor — 18 hours: BLAW 3301; ACCT 3309; MKT 3300; MGMT 3310; FIN 3310; MGMT 3321. Students selecting this minor field should also enroll in ECON 3204 to fulfill the Social Science requirement and in MATH 3120, 3201, or 3280 to fulfill the Mathematics/Statistics requirement.

Accounting Minor — 18 hours: ACCT 3201, 3202; CIS 3225; plus 3 courses selected from ACCT 3320, 3321, 3322, 3323, 3327, 3401, 3404, 3405, 3428.

Economics Minor — 18 hours: ECON 3203; 3204; 3302 or 3303; plus 3 courses selected from ECON 3300 or 3400 level courses.

Management Minor — 21 hours: ACCT 3201; ECON 3204; CIS 3225; MKT 3300; MGMT 3310; plus 2 courses selected from: MGMT 3300, 3311, 3321; MKT 3302, 3310, 3316.

Computer Science Minor — CS 3110, 4101, 4201, 3202, 3220 or 3 advanced hours in Computer Science, MATH 3200.

Elementary Education Minor — complete 18 semester hours from among the following courses: EDPC 3402; ELED 3302, 3303, 3304, 3306, 3307, 3405. Note: to achieve certification in Elementary Education students must also complete 24 hours of combination subjects, a specialization area, and TED 9490 (Student Teaching). See p. 67 for details. New requirements are being developed for students who will graduate Fall 1991 or after; such students should consult with the College of Education or the University Academic Advising Center.

Secondary Education Minor — complete 20 semester hours as follows: EDPC 3301; RED 3342; SPED 3425; SCED 3317, 3311, 2310; SCED 3312 or one of the following: SCED 3467, 3468, 3470 (or ADMS 3499), 3455 (or ENGL 3455) or PE 3304. NOTE: to achieve certification in Secondary Education, students must also complete from 48 to 60 semester hours in two teaching fields (or one composite teaching field) and TED 9495 (Student Teaching). See pp. 68-69 for details. New requirements are being developed for students who will graduate Fall 1991 or after; such students should consult with the College of Education or the University Academic Advising Center.

The following requirements apply to both the Elementary and Secondary Education Minors. Prior to admission to Teacher Education and/or professional education courses, students must complete the following: (1) English 3111-3112 and Speech 3101 with grades of C or better; (2) Teacher Education 1201 with grade of S; (3) minimum of 45 semester hours college work completed with a cumulative G.P.A. of at least 2.0 at UT El Paso; (4) Pre-Professional Skills Test (P-PST) or the Texas Academic Skills Program (TASP) with passing scores; and (5) degree and/or certification plan on file in the Certification Office. In order to be recommended for certification, a student must complete the following: (1) an approved degree program and be approved for graduation; (2) ExCET tests in teaching field(s) and professional education with passing scores in each test; (3) cumulative G.P.A. of 2.0; and (4) 2.5 G.P.A. in teaching field(s) and in professional education.

Minor in Speech, Hearing and Language Disorders for Bachelor of Arts (Liberal Arts) Students: SHLD 1110, 3110, 3210, 3315, 3409 (13 hours), and two courses selected from SHLD 3312, 3313, 3314, 3317, 3410 (6 hours).

Science Minors are available in Biology, Chemistry, Geology, Mathematics, and Physics. See College of Science departmental listings for details.

Electives

Complete electives as needed to bring the total semester hours of credit to at least 128. Elective credit cannot also be used in meeting any other degree requirement. Electives of advanced (300-400) level may, however, be applied toward satisfaction of the requirement of 45 advanced hours.

BACHELOR OF FINE ARTS

This professional Art degree is offered with the following areas of specialization:

MAJOR: Ceramics, Graphic Design, Metals, Painting, Printmaking, Sculpture

MINOR: Art Education, Art History, Ceramics, Graphic Design, Metals, Painting, Printmaking, Sculpture.

The BFA graduation exhibition will be considered for outstanding art majors. Art students will be selected by the Art Faculty and given an opportunity to participate in the honors exhibition program during their senior year. For specific requirements see the Art Department Section.

BACHELOR OF MUSIC

Students may pursue this professional Music degree in one of three areas:

Music Education — choral and instrumental (All-Levels Teaching Program);

Performance — orchestra and band instruments, keyboard instruments, voice or ballet;

Theory and Composition.

For specific requirements, see the Music Department section.

BACHELOR OF SCIENCE IN CRIMINAL JUSTICE

The BS in Criminal Justice is an applied, interdisciplinary degree designed to offer students the opportunity to prepare themselves for professional careers in the field of Criminal Justice. For specific requirements, see the Department of Criminal Justice section.

BACHELOR OF SOCIAL WORK

The Social Work Program offers a major related to a professional career in Social Work. Students electing the BSW degree must satisfy the general requirements of the College of Liberal Arts for the BA degree. For specific requirements, see the Social Work section.

GRADUATE STUDIES

Graduate degrees are offered in most Liberal Arts disciplines, including Art, English, History, Interdisciplinary Studies, Linguistics, Music, Political Science, Public Administration, Psychology, Sociology, Spanish, Speech, and Theatre Arts. Details of graduate programs are contained in the Graduate Studies Catalog and are available from individual departments and the Graduate School.

Interdisciplinary Minors

The College offers several interdisciplinary programs of study that can be pursued in conjunction with any major. These minors require the completion of a minimum of 18 semester hours:

ASIAN AND AFRICAN STUDIES

The Asian and African Studies minor is a broad, interdisciplinary course of study for students interested in Asian and African cultures or in careers in international business, government service, international health, or in teaching overseas. The core courses are designed to encompass a study of both Asia and Africa (except for the specific area-oriented historical surveys).

Students must take nine hours of courses from the following list that constitutes the core. At least three disciplines must be represented by the core courses. The remaining nine hours may be taken from the core courses not taken to satisfy the core requirement or from the list of optional courses. No more than nine hours may be taken from any one discipline. No more than six hours may be taken from a student's major area.

Core Courses include: ENGL 3215, 3216; HIST 3330, 3336, 3337, 3440; PHIL 3340; POSC 3342; SOCI/ANTH 3318.

Optional Courses include: MICR 3230, 3459; ZOO 2364; ECON 3367; HIST 3324, 3339; MGMT 3425; POSC 3440; HIST 3331; ANTH 3302.

CHICANO STUDIES

The Chicano Studies minor offers students the choice of four options: Social Science, Humanities, Education, and Interdisciplinary. Specific requirements may be found under Chicano Studies.

LATIN AMERICAN AND BORDER STUDIES

Minors are available in both Latin American Studies and in Border Studies; they provide a student with any other major the opportunity to take advantage of the University's rich resources in these areas. Specific requirements are listed in the Latin American Studies section.

MILITARY STUDIES

The Military Studies minor is intended for students with an interest in the military as a social institution and in its policies and problems, not solely as reflected in formal military, air or naval science instruction but, particularly, as illuminated by the social sciences and humanities.

Students are required to complete all three of the core courses and to elect nine hours from among the optional courses. Not more than six hours of the optional courses may be selected from a single department; nor may a student elect courses from both Military Science and Aerospace Studies.

Core Courses include: HIST 3313; POSC 3420 and SOCI 3340.

Optional Courses include: AS 3401-3402; GEOG 3208, 3411; HIST 3305, 3311-3312, 3324, 3369; MS 3401-3402; POSC 3324, 3338, 3343; SOCI 3455.

RELIGIOUS STUDIES

The Religious Studies minor is designed to provide a broad, interdisciplinary framework within which students can take courses that explore the nature of religion and its impact on human culture, past and present. Courses are academic and non-sectarian in nature. Specific course listings and requirements may be found under Religious Studies.

SOVIET AND EAST EUROPEAN STUDIES

The Soviet and East European Studies minor is a broad, interdisciplinary plan designed to help acquaint students from any major with the Soviet and East European world. It is especially recommended for students who plan advanced study in Soviet and East European fields at the graduate level or who plan careers in business, education, or government agencies dealing with the Soviet and East European area.

Core Courses include: HIST 3332 or 3333; POSC 3324 or 3338; and one course chosen from RUSS 3301, 3303, 3350; ENGL 3381, 3382.

Optional Courses include: ECON 3492; HIST 3202, 3369, 3374; POSC 3426; RUSS 3320; SOCI 3425; GEOG 3110, 3411.

TRANSLATION AND INTERPRETATION (Spanish/English)

The Translation and Interpretation Program crosslisted in the Departments of English and Languages and Linguistics is designed to provide qualified students with the opportunity to acquire basic skills of the fields. Translation Certificates in either Spanish or English or both will be awarded to those who pass professional level competency examinations. Consultation with the Program Coordinator is necessary for students to be admitted into the Program. Details of the Program are listed in the Languages and Linguistics section.

URBAN STUDIES

The Urban Studies minor is intended for students with an interest in the modern city as a phenomenon and a social entity. It is appropriate supporting study not only for the full range of social and behavioral science majors but also for the humanities. Students whose vocations may lead them to depend upon urban phenomena for success both in their personal and professional lives and who recognize that understanding the city, under such circumstances, is as important as understanding individual human beings, may find this program particularly beneficial.

Students are required to complete all four of the core courses and to elect six hours from among the optional courses. No more than six hours, as between the core and optional courses, may be taken from any one department.

Core Courses include: ECON 3435, POSC 3322, 3421; SOCI 3303.

Optional Courses include: HIST 3306, 3309, 3328, 3343; POSC 3345, 3351; SOCI 3327; SOWK 3311.

WESTERN CULTURAL HERITAGE

The College of Liberal Arts offers a special sequence of interdisciplinary courses required to fulfill the Western Cultural Heritage area of the General Education Core. Details on these courses, the creation of which was facilitated by grants from the National Endowment for the Humanities, can be found under the Western Cultural Heritage section.

WOMEN'S STUDIES

The Women's Studies Program provides a broad, interdisciplinary minor in which students can take coursework to specialize in issues of gender and/or women. Specific requirements are listed under Women's Studies.

Special Programs

HONORS

The University Honors Program, now a campus-wide endeavor involving students from all the colleges, began as a Liberal Arts Honors Program. Even today it remains most closely allied with the humanities disciplines, fostering academic excellence as well as intellectual curiosity and debate, establishing meaningful faculty-student dialogue, and building a sense of scholarly community. Honors courses, taught

by outstanding faculty and limited in size, have been offered by the departments of Communication, Criminal Justice, English, History, Languages and Linguistics, Music, Philosophy, Political Science, Psychology, Sociology/Anthropology, and Theatre Arts. Moreover, History, Political Science and Psychology offer departmental honors upon completion of an Honors thesis. Besides enrolling in courses restricted to program participants, Honors students may avail themselves of options for independent study or Honors contracts, in which special projects are carried out under faculty supervision. Through its close alliance with the University Honors Program, the College of Liberal Arts strengthens its commitment toward providing students with the satisfaction of having exercised their intellectual capabilities to the fullest.

PRE-LAW

The University of Texas at El Paso is a very good place to prepare for law school. Law schools generally seek undergraduate students who have acquired a critical understanding of human institutions and values, demonstrated ability as creative thinkers, mastered certain skills such as comprehension, written and oral expression, and obtained a broad education. Any course or major that helps individuals acquire these skills is appropriate for pre-law students, and consequently no specific courses or majors are required. You should select a major that interests you, and since plans for a law career may change, you may also want to consider the career alternatives provided by the various majors. The most demanding courses will likely provide the best preparation for law schools.

While the Association of American Law Schools and the Law School Admissions Council do not prescribe courses or majors for pre-law students, they do advise against taking many law courses at the undergraduate level; however, the particular course of subject matter (as long as it is substantial) is far less important than the intensity with which the student devotes himself to it.

For advice on which courses may be of greatest value to you personally, you should consult with the undergraduate advisor in your major department. If you have not yet selected a major, contact the Academic Advising Center (915) 747-5290.

In addition to seeking advice from the departmental undergraduate advisors, counsel should be sought from faculty who have special interest and expertise in legal education. A listing of official Pre-law Advisors is printed in the Schedule of Classes each semester or session.

MILITARY SCIENCE

Military Science courses are designed to afford the student an opportunity to become a commissioned officer in the U.S. Army. These ROTC courses provide opportunities for leadership training and experience required of an Army officer. Specific courses and requirements are listed under the departmental section for Military Science.

AEROSPACE STUDIES

The Aerospace Studies curriculum includes the Air Force ROTC education program leading to a commission as second lieutenant in the Air Force. The Air Force ROTC Commissioning Program is open to all qualified male and female students in all academic majors leading to a bachelor's degree. Specific courses and requirements are listed under the departmental section for Aerospace Studies.

TEACHER CERTIFICATION

Liberal Arts students who plan to teach in the elementary or secondary schools upon completion of the bachelor's degree must complete additional coursework and fulfill specific requirements through the College of Education. The following programs for teacher certification currently are available to Liberal Arts majors:

All-Levels Teaching Programs: Art, Music.

Elementary Certification: Art, English, French, German, History, Spanish, Theatre Arts.

Secondary Certification: English, French, German, History, Journalism, Political Science, Psychology, Sociology, Spanish, Speech, Theatre Arts. Composite Teaching Fields for secondary certification include English/English as a Second Language, and Social Studies.

Prior to admission to Teacher Education and/or professional edu-

education courses, students must complete the following: (1) English 3111-3112 and Speech 3101 with grades of C or better; (2) Teacher Education 1201 with grade of S; (3) minimum of 45 semester hours college work completed with a cumulative G.P.A. of at least 2.0 at UT El Paso; (4) Pre-Professional Skills Test (P-PST) or the Texas Academic Skills Program (TASP) with passing scores; and (5) degree and/or certification plan on file in the Certification Office. In order to be recommended for certification, a student must complete the following: (1) an approved degree program and be approved for graduation; (2) ExCET tests in teaching field(s) and professional education with passing scores in each test; (3) cumulative G.P.A. of 2.0; and (4) 2.5 G.P.A. in teaching field(s) and in professional education.

More comprehensive information concerning certification is listed under the College of Education as well as the specific Liberal Arts departments. Students wishing to pursue certification should consult with the Office of the Dean of Liberal Arts and the Certification Officer of the College of Education.

New requirements are being developed for students who will graduate Fall 1991 or after; such students should consult with the College of Education or the University Academic Advising Center.

Aero pace Studies

200 Graham Hall
(915) 747-5232/5493

CHAIRMAN: Lieutenant Colonel John P. Lockney

PROFESSOR: Lockney

ASSISTANT PROFESSORS: Buck, Gutierrez, Page

The college Air Force Reserve Officer Training Program Curriculum (AFROTC) provides preprofessional preparation for future Air Force officers. It is designed to motivate and prepare college men and women for their initial active duty assignments as Air Force commissioned officers. The curriculum is designed to give the student an understanding of the military instrument of national power with emphasis on the United States Air Force and how it fits into American society. Inherent in course content and methodology are opportunities for the student to develop the capacity to think creatively, speak and write effectively, and lead and manage efficiently.

The Air Force ROTC Commissioning Program is open to all qualified male and female students in all academic majors leading to a bachelor's degree. The program is also open to graduate students who have two years remaining at the University. The program is divided into the General Military Course (Basic Course) and the Professional Officer Course (Advanced Course).

Scholarships: AFROTC offers 3 1/2, 3, 2 1/2, and 2 year scholarships to qualified individuals. These scholarships pay tuition, books, fees and \$100.00 a month.

General Military Course (GMC): The first two years of Air Force ROTC (AS 1121-1122 and AS 1221-1222) form the basic course known as the GMC. Basic courses are normally taken during the freshman and sophomore years. There is no military obligation associated with basic courses and they count as free elective credit. Courses may be taken out of sequence and students may compress GMC courses by concurrent enrollment. Credit for all or part of the basic courses may be granted for participation in high school ROTC or for active military service. Scholarships are available for qualified students.

Professional Officer Course (POC): The last two years (AS 3301-3302 and 3401-3402) form the advanced course known as the POC. The POC requires two academic years to complete. The two academic years can be a combination of junior-senior, senior-graduate or all graduate years. Students must be physically and mentally qualified for POC entry and have a desire to be commissioned in the Air Force. Completion of the GMC is not a prerequisite for the POC. All POC cadets must demonstrate proficiency in math reasoning before

completion of the program. This requires the completion of MATH 3105, its equivalent or a higher level of proficiency if math placement scores dictate enrollment in a higher level math course. In addition, all scholarship cadets must agree to complete a minimum of two semesters of college instruction in an Indo-European or Asian language before commissioning. Students who have credit for the GMC must attend a four-week summer orientation course before entering the POC. Students who have not completed GMC requirements attend a six-week summer orientation course. Advanced courses may be taken out of sequence, but compressed or dual enrollment is prohibited. POC cadets are paid \$100.00 per month for a maximum of 30 months. Cadets also receive payment for the summer orientation course. Two-year scholarships are available for qualified students.

Leadership Training: This training is an integral and mandatory portion of the Aerospace Studies curriculum. Within the framework of the cadet corps, it provides a progression of experiences designed to develop each student's leadership potential and serves as an orientation to active duty.

Aerospace Studies (AS)

BASIC COURSES

1121-1122 The Air Force Today (1-0)

Introduction to U.S. Military practices and policies, to USAF customs and courtesies; doctrine; mission; and total force structure of the Air Force; U.S. Strategic Offensive and Defensive Forces; General Purpose Forces; and USAF Aerospace Support Forces.

1221-1222 The Development of Air Power (1-0)

This course is a study of air power from balloons and dirigibles through the jet age; a historical review of air power employment in military and nonmilitary operations in support of national objectives; and a look at the evolution of air power concepts and doctrines.

ADVANCED COURSES

3301-3302 Air Force Management and Leadership (3-0)

An integrated management course emphasizing the concepts and skills required by the successful manager and leader. The curriculum includes individual motivational and behavioral processes, leadership, communication, and group dynamics, providing the foundation for the development of the junior officer's professional skills (officership). Course material on the fundamentals of management emphasizes decision-making, the use of analytic aids in planning, organizing, and controlling in a changing environment, as necessary professional concepts. Organizational and personal values (ethics), management of change, organizational power, politics, and managerial strategy and tactics, are discussed within the context of the military organization. Actual Air Force case studies are used throughout the course to enhance the learning and communication process.

3401-3402 National Security Forces in Contemporary American Society (3-0)

The military profession; interaction with the civil sector of society; international and domestic backdrop bearing on defense policy; development of defense strategy; variables in the formulation and implementation of national security policy; case studies in policy making; organization considerations; and the Uniform Code of Military Justice.

3403 Flight Instruction (3-0)

Ground school: theory of flight, preflight facts, meteorology, use of the flight computer, FAA regulations, radio communications and navigation. Open to qualified POC members only.

4301 Summer Field Training

Four/six week field training course stressing military skills, career orientation, aircraft orientation, marksmanship, survival, physical fitness and the practical application of leadership and management skills. (Counts for free elective credit only. Prerequisite: 4-week FT course — completion or accreditation of General Military Course and qualification for Professional Officer Course entry is mandatory; 6-week FT course — qualification for Professional Officer Course entry is mandatory.)

Art

350 Fox Fine Arts
(915) 747-5181

CHAIRMAN: Charles E. Fensch

PROFESSORS EMERITI: Clarke Garnsey, Wiltz Harrison, Robert Massey

PROFESSOR: Fensch

ASSOCIATE PROFESSORS: Arnold, Segal, Thiewes, Wong

ASSISTANT PROFESSORS: Kemp, Parish

GALLERY DIRECTOR: DAVID ANDERSEN

The Department of Art offers a comprehensive program in the visual arts. We award the Bachelor of Fine Arts (BFA) and the Bachelor of Arts (BA) degrees. Students interested in certification as an art teacher may meet this goal through either the BFA or BA degree tracks. Students may elect majors in the following areas: Art Education, Ceramics, Graphic Design, Drawing, Metals, Painting, Printmaking, and Sculpture. It is possible to minor in any of the above areas and in Art History.

The Department of Art is housed in the Fox Fine Arts Center with over 30 studios, lecture room, and two art galleries making it one of the finest facilities in the Southwest.

Bachelor of Fine Arts

- General Requirements (42 hours)
 - Communication Skills
ENGL 3111, 3112 and SPCH 3101; or ENGL 6111 and 3112; or ESOL 3111, 3112, 3104, and 3203 (for students who are not proficient in English).
 - Social Sciences
HIST 3101, 3102, or 3103, 3104; POSC 3110, 3111; plus 3-hour social science elective from Anthropology, Cultural Geography, Psychology or Sociology.
 - Mathematics/Science
MATH 3120; CS 3110; plus 3-hour Biology elective
 - Humanities
PHIL 3208; plus 6 hours of upper-division English: creative writing or literature.
- Art Foundations (54 hours)
ARTF 3101, 3102, 3103, 3104, 3315; ARTH 3105, 3106, 3319, 3329; ARTG 3206; CERM 3204; DRAW 3208, 3218, 3410; MTLN 3203; PNTG 3201; PRNT 3205; SCUL 3202.
- Major Art Area (21 hours) To be selected from Ceramics, Drawing, Graphic Design, Metals, Painting, Printmaking, or Sculpture; 18 hours must be upper-division.
- Minor Art Area (12 hours) To be selected from a field other than the major; 9 hours must be upper-division.
- Art Electives (9 hours) All must be upper-division.

Total Semester Hours: 138

BFA degree with All Levels Art Certification

The BFA degree may be combined with certification in Art Education by completing the courses listed below, for a total of 154 semester hours. In this degree option, twelve hours of Art Education may be used to satisfy the minor art area required for the BFA, and nine of the required 25 hours of Professional Studies may substitute for nine hours of Art electives.

- Professional Studies (25 hours)
EDPC 3301; ELED 3302; RED 3340; SCED 3317; SPED 3425; TED 1201, 9496.
- Art Education (12 hours) ARTE 3312, 3321, 3322, 3421.

Prior to admission to Teacher Education and/or professional education courses, students must complete the following: (1) English 3111-3112 and Speech 3101 with grades of C or better; (2) Teacher Education 1201 with grade of S; (3) minimum of 45 semester hours college work completed with a cumulative G.P.A. of at least 2.0 at UT El Paso; (4) Pre-Professional Skills Test (P-PST) or the Texas Academic Skills Program (TASP) with passing scores; and (5) degree and/or certification plan on file in the Certification Office. In order to be recommended for certification, a student must complete the following: (1) an approved degree program and be approved for graduation; (2) ExCET tests in teaching field(s) and professional education with passing scores in each test; (3) cumulative G.P.A. of 2.0; and (4) 2.5 G.P.A. in teaching field(s) and in professional education.

ing scores in each test; (3) cumulative G.P.A. of 2.0; and (4) 2.5 G.P.A. in teaching field(s) and in professional education.

Bachelor of Arts

The BA degree may be earned with a major in Art by completing the 65-hour general requirement block listed in the Liberal Arts introductory section, plus the following, for a total of 131 semester hours. The Fine Arts requirement of the BA must be met with one 3-hour course in Music and one 3-hour course in Theatre Arts.

- Art Foundations (24 hours)
ARTF 3101, 3102, 3103, 3104, ARTH 3105, 3106; DRAW 3208, 3218
- Major Area (21 hours)
To be selected from one or two of the following: Ceramics, Drawing, Graphic Design, Metals, Painting, Printmaking, or Sculpture; 18 hours must be upper-division.
- Minor area (18 hours)
- Elective (3 hours)

Art History Minor

Liberal Arts students pursuing the BA degree may elect a minor in Art History by completing the 18-hour requirement as follows: ARTH 3105, 3106, 3319, 3329; plus 6 hours from ARTH 3309, 3310, 3409, 3419.

BA Degree in Art Education

The BA degree may be combined with All-Levels certification in Art Education by completing the program listed below, for a total of 130 semester hours:

- General Requirements (39 hours)
 - Communication Skills
ENGL 3111, 3112, and SPCH 3101; or ENGL 6111 and 3112.
 - Social Sciences
HIST 3101, 3102 or 3103, 3104; POSC 3110, 3111.
 - Mathematics/Science
MATH 3120; CS 3110; plus 6 hours of science electives
 - Humanities
6 hours of upper-division English: creative writing or literature.
- Professional Studies (25 hours)
EDPC 3301; ELED 3302; RED 3340; SCED 3317; SPED 3425; TED 1201, 9496
- Art Foundations (54 hours)
ARTF 3101, 3102, 3103, 3104, 3315; ARTH 3105, 3106, 3319; ARTG 3206; CERM 3204; DRAW 3208, 3218; MTLN 3203; PNTG 3201; PRNT 3205; SCUL 3202; plus 6 hours Art electives.
- Art Education (12 hours)
ARTE 3312, 3321, 3322, 3421

The BA in Art Education may also be combined to include Elementary Certification by completion of the following 18-hour sequence for a degree/certification total of 148 semester hours:

ELED 3303, 3304, 3306, 3405, 3406; RED 3441.

Prior to admission to Teacher Education and/or professional education courses, students must complete the following: (1) English 3111-3112 and Speech 3101 with grades of C or better; (2) Teacher Education 1201 with grade of S; (3) minimum of 45 semester hours college work completed with a cumulative G.P.A. of at least 2.0 at UT El Paso; (4) Pre-Professional Skills Test (P-PST) or the Texas Academic Skills Program (TASP) with passing scores; and (5) degree and/or certification plan on file in the Certification Office. In order to be recommended for certification, a student must complete the following: (1) an approved degree program and be approved for graduation; (2) ExCET tests in teaching field(s) and professional education with passing scores in each test; (3) cumulative G.P.A. of 2.0; and (4) 2.5 G.P.A. in teaching field(s) and in professional education.

General Courses (ART)

General prerequisite: Junior standing for all 3300 and 3400 level courses.

3100 Art Appreciation (3-0)

A course, with slides and text, designed to give the general university student an understanding of the great historic styles in the arts. May be used by art majors as elective credit only.

3110 Introduction to Art (non-majors) (3-0)

This course should provide for the enjoyment of Art through a

familiarization with modern art history; the visual elements of art; the various media through which art is expressed; and studio problems.

3307 Special Topics In Art (3-6)

Lecture or studio art course on topic not included in regular curriculum. May be repeated for credit when topic varies. *Prerequisite:* Permission of instructor. When the topic is in studio art, an appropriate fee will be assessed.

3339 Special Studies (0-6)

Special course work in new or experimental offerings for which there is immediate need and for which special resources and faculty are available. May be repeated for credit for varied subject matter. Primarily for art majors.

Art Education (ARTE)

3311 Creative Art for the Classroom Teacher (3-0)

For non-art majors only, the course is designed for the prospective classroom teacher. The course will encourage an understanding of the visual/artistic growth and development of children as well as an exploration of the methods and materials available to the elementary teacher. Laboratory Fee: \$4.

3312 Elementary Art Education (2-2)

A survey of a variety of media and materials applicable to the elementary school child. Special emphasis will be placed on the creative and aesthetic application of the media. Laboratory Fee: \$4.

3321 Secondary Art Education (2-2)

This course will emphasize the media and materials applicable to the secondary art student. Particular attention will be placed on crafts. Laboratory Fee: \$4.

3322 Methods of Teaching Art (3-0)

A survey of the methods and practices involved in the effective and creative approach to art education. Special emphasis will be placed on demonstration techniques and opportunities to teach as a part of a group and on an individual basis. Each student will observe in both elementary and secondary art classrooms. This course must be taken prior to student teaching.

3421 Teaching of Art (3-0)

An examination of the theories and literature in art education. The course will also explore the creative growth and development of children. A survey of research in the field will be conducted and each student will be involved in a research project. The course may be taken concurrently with student teaching or after the field experience. *Prerequisites:* ARTE 3321 and 3322.

3451 Special Problems in Art Education (0-6)

Stress on individual direction and achievement. *Prerequisites:* ARTE 3311, 3312, 3321 and 3322 or permission of instructor. May be repeated for credit if problems vary.

Basic Studies (ARTF)

3101 Basic Design I (0-6)

A study of the basic visual elements and principles of two-dimensional design. Suggested: Take concurrently with ARTE 3102; 6 hours in studio per week. Laboratory Fee: \$4.

3102 Basic Drawing I (0-6)

A summary of basic drawing skills including study of proportion, scale, light and shade rendering, and control of illusion of space. Experimentation of drawing media. Suggested: Take concurrently with ARTF 3101. 6 hours in studio per week. Laboratory Fee: \$4.

3103 Basic Design II (0-6)

Continuation of the elements and principles studied in Design I and their application to a three-dimensional visual image. *Prerequisite:* ARTF 3101. Suggested: take concurrently with ARTF 3104. 6 hours in studio per week. Laboratory Fee: \$4.

3104 Basic Drawing II (0-6)

Continuation of Basic Drawing Skills, working toward achieving effective composition. Stress of shape factors. *Prerequisite:* ARTF 3102.

Suggested: Take concurrently with ARTF 3103. 6 hours in studio per week. Laboratory Fee: \$4.

3315 Advanced Design (0-3)

In-depth study of the fundamental elements and principles of two and three dimensional design. Emphasis on individual direction and self-expression. *Prerequisite:* Junior standing.

Ceramics (CERM)

3204 Ceramics I (0-6)

Exploring the design principles in the clay media, with major emphasis on hand building in stoneware; an introduction to potter's wheel techniques and glaze theory and application. *Prerequisites:* ARTF 3101, 3102 or permission of instructor. May be taken concurrently with ARTF 3103, 3104. 6 hours in studio per week. Laboratory Fee: \$8.

3214 Ceramics II (0-6)

Stressing wheel production for throwing techniques. Emphasis toward increasing the student's proficiency, control, and aesthetic development. Kiln firing. *Prerequisite:* CERM 3204 or permission of instructor. 6 hours in studio per week. Laboratory Fee: \$8.

3304 Ceramics III (0-6)

Continuation of Ceramics II with emphasis on exploration of utilitarian form and surface treatment in series with further investigation of glaze materials and techniques. *Prerequisite:* CERM 3214 or permission of the instructor. 6 hours in studio per week. Laboratory Fee: \$8.

3314 Ceramics IV (0-6)

Continuation of Ceramics III with concentration on designing and fabrication of related functional forms. *Prerequisite:* CERM 3214 or permission of instructor. 6 hours in studio per week. Laboratory Fee: \$8.

3324 Ceramics V (0-6)

Exploration of clay from the non-utilitarian aspects, stressing sculptural relationship of joined forms, both thrown and hand built. Research into clay and clay bodies. *Prerequisite:* CERM 3314 or permission of instructor. 6 hours in studio per week. Laboratory Fee: \$8.

3404 Ceramics VI (0-6)

Continuation of Ceramics V. *Prerequisite:* CERM 3324 or permission of instructor. 6 hours in studio per week. Fine Arts Fee: \$10.

3414 Ceramics VII (0-6)

Emphasis upon individual direction and achievement. *Prerequisite:* 12 semester hours in ceramics or permission of instructor. Fine Arts Fee: \$10.

3424 Special Problems in Ceramics (0-6)

Emphasis upon individual direction and achievement in ceramics. May be repeated for credit when problem varies. *Prerequisite:* 12 semester hours in ceramics or permission of instructor. Fine Arts Fee: \$10.

Graphic Design (ARTG)

3206 Introduction to Graphic Design (2-4)

Students will explore the fundamental theories, principles, skills vocabulary in graphic design. Emphasis is placed on line, shape and color as used in symbols and letter forms. *Prerequisites:* ARTF 3101, 3102, or permission of instructor. May be taken concurrently with ARTF 3103, 3104. Laboratory Fee: \$4.

3216 Intermediate Graphic Design (2-4)

This is a further course application of design concepts, principles and techniques used in the effective solving of problems in visual communication. *Prerequisite:* ARTG 3206. Laboratory Fee: \$4.

3316 Advanced Graphic Design (2-4)

This advanced design course emphasizes the importance of effective, and economical solutions to visual problems commonly encountered in the graphic design field. *Prerequisite:* ARTG 3216. Laboratory Fee: \$4.

3326 Illustration (1-5)

The goal of this course is to prepare the student in solving visual problems that require an understanding of current techniques and media used by illustrators. *Prerequisite:* ARTG 3316. Laboratory Fee: \$4.

3336 Layout and Art Reproduction (0-6)

This course provides basic information regarding various technical problems faced by the graphic designer in the preparation of art work for reproduction. The student will study the different printing methods, the platemaking process, type composition, the elements of the mechanical, single and multi-color printing. *Prerequisite:* ARTG 3206. Laboratory Fee: \$4.

3406 Graphic Design Internship (0-6)

This course will be an internship with a design firm, art studio, television station, or advertising agency. It will provide an opportunity for the student to gain actual experience "on a board" or in another phase of the studio's operation. *Prerequisites:* ARTG 3206, 3216, 3316, 3326, or instructor permission. Laboratory Fee: \$4.

3416 Special Problems in Graphic Design (0-6)

Emphasis will be on individual direction and achievement in Graphic Design. May be repeated for credit when problem varies. *Prerequisite:* 12 hours in Graphic Design or permission of instructor. Laboratory Fee: \$4.

3426 Portfolio Design (0-6)

This course will give the student the opportunity to organize a professional portfolio for presentation. All phases of graphic design may be encountered. *Prerequisite:* Design Internship. Laboratory Fee: \$4.

History of Art (ARTH)

3105 Art History of the Western World I (3-0)

A survey of western art including painting, sculpture, and architecture from prehistoric times to the early Renaissance.

3106 Art History of the Western World II (3-0)

A survey of western art including painting, sculpture, and architecture from the early Renaissance to the mid-twentieth century.

3309 History of American Art (3-0)

A study of the principal monuments of architecture, painting, sculpture, and the minor arts of the United States from the 1600s to the present. Various European and native influences will be emphasized. *Prerequisite:* Junior standing. Offered in alternate Fall semesters.

3310 History of Latin-American Art (3-0)

Seminar on aspects of Latin American painting, sculpture and architecture from pre-Columbian times to the present. *Prerequisite:* Junior standing.

3319 History of Modern Art (0-3)

A critical survey of Western painting, sculpture, and architecture from the mid-nineteenth century to World War II (Realism/Impressionism to Abstract Expressionism). Emphasis will be placed upon an analysis of the specific artworks and stylistic groups of this period in terms of their relation to changing cultural conditions; e.g., philosophical, scientific, technological, political, and economic factors.

3329 History of Contemporary Art (0-3)

A critical survey of Western painting, sculpture, and architecture from World War II to the present. *Prerequisite:* ARTH 3106.

3409 Research Problems in Art History (3-0)

A seminar for the advanced student exploring various phases or aspects of art history beyond the regular offerings. May be repeated for credit if problems vary. *Prerequisites:* ARTH 3105 and 3106.

3419 Special Problems in Art History (3-0)

A course for the advanced student which allows the student and the instructor to set up individual problems. May be repeated for credit when problem varies. *Prerequisite:* 12 semester hours in art history or permission of instructor.

Drawing (DRAW)

3208 Life Drawing I (0-6)

Fundamentals of drawing and human figure; academic study of the skeleton and superficial muscles; also some study from the live model. *Prerequisites:* ARTF 3101 and 3102, or permission of instructor. May be taken concurrently with ARTF 3103, 3104. Laboratory Fee: \$8.

3218 Life Drawing II (0-6)

Drawing the human figure from live model(s). Emphasis upon rendering of form through use of line and value, using varied perceptual approaches. Some mixed media experience. *Prerequisite:* DRAW 3208 or permission of instructor. Laboratory Fee: \$8.

3308 Life Drawing III (0-6)

Drawing the human figure from the live model(s). Emphasis upon placing the figure in composition, the use of varied media, and encouragement of individual direction. *Prerequisite:* DRAW 3218 or permission of instructor. Laboratory Fee: \$8.

3318 Life Drawing IV (0-6)

Study of animal forms. Emphasis upon learning the differences and similarities among vertebrates. Includes research, gestural sketches, studies and finished compositions. *Prerequisite:* DRAW 3218 or permission of instructor. Laboratory Fee: \$8.

3410 Advanced Drawing I (0-6)

Exploration of mixed drawing techniques. Expansion of subject matter capabilities with emphasis on personal expression. Studies and finished compositions. *Prerequisite:* DRAW 3308 or permission of instructor. Fine Arts Fee: \$10.

3420 Advanced Drawing II (0-6)

Individual assignments. Emphasis upon the combining of drawing techniques/media with the techniques/media from the student's major art area. *Prerequisite:* DRAW 3410 or permission of instructor. Fine Arts Fee: \$10.

3430 Special Problems in Life Drawing (0-6)

Individual direction in drawing from living forms. May include human, animal or plant forms. May be repeated for credit. *Prerequisite:* 12 semester hours in life drawing or permission of instructor. Fine Arts Fee: \$10.

Metals (MTLS)

3203 Metals I (0-6)

An examination of several basic metal techniques — sawing, soldering, forming, cold connections, surface finishes. *Prerequisites:* ARTF 3101 and 3102 or permission of instructor. May be taken concurrently with ARTF 3103, 3104. 6 hours in studio per week. Laboratory Fee: \$8

3213 Metals II (0-6)

Exploration of forging and hollow construction techniques first half of semester. Last six weeks will cover the basics of lost wax casting with various metal alloys. *Prerequisite:* MTLS 3203. 6 hours in studio per week. Laboratory Fee: \$8.

3303 Metals III (0-6)

Concentrated work on metal construction techniques including marriage of metals, hammer inlay, mokume and mechanisms. *Prerequisite:* MTLS 3213. 6 hours in studio per week. Laboratory Fee: \$8.

3313 Metals IV (0-6)

Continuation of Metals III with emphasis on the die-forming, repousee and chasing. *Prerequisite:* MTLS 3303. 6 hours in studio per week. Laboratory Fee: \$8.

3323 Metals V (0-6)

Concentration on various forming techniques, angle raising, shell forming and construction, and work on series problem. *Prerequisite:* MTLS 3313. 6 hours in studio per week. Laboratory Fee: \$8.

3403 Metals VI (0-6)

Emphasis on advanced metal design with individual investigation. *Prerequisite:* MTLS 3323. 6 hours in studio per week. Fine Arts Fee: \$10.

3413 Metals VII (0-6)

Advanced techniques in jewelry design and construction. Methods of gem cutting, identification, and setting. Advanced techniques in silversmithing. Exploration of design theories and construction of tools and devices for hollow ware and flatware production. *Prerequisites:* MTL 3403 and permission of instructor. Minimum of 6 hours in studio per week. May be repeated for credit if problems vary. Fine Arts Fee: \$10.

3423 Special Problems in Metals (0-6)

Emphasis on individual direction and achievement. *Prerequisites:* MTL 3403 and permission of instructor. Minimum of 6 hours in studio per week. May be repeated for credit if problems vary. Fine Arts Fee: \$10.

Painting (PNTG)**3201 Painting I (0-6)**

Painting in oil, with concentration upon learning paint characteristics and the handling of painting tools. *Prerequisites:* ARTF 3101 and 3102 or permission of instructor. May be taken concurrently with ARTF 3103, 3104. 6 hours in studio per week. Laboratory Fee: \$4.

3231 Painting II (0-6)

Painting in varied media, with concentration upon learning the inherent characteristics and the handling of painting tools. *Prerequisite:* PNTG 3201. 6 hours in studio per week. Laboratory Fee: \$4.

3301 Painting III (0-6)

Development of visual structure in painting with emphasis upon studies of color structure systems. *Prerequisite:* PNTG 3231. 6 hours in studio per week. Laboratory Fee: \$4.

3331 Painting IV (0-6)

Concentration on specific problems involving form, color, structure with emphasis upon clear expression of artistic intent. *Prerequisite:* PNTG 3301. 6 hours in studio per week. Laboratory Fee: \$4.

3341 Painting V (0-6)

Investigation of depth of materials and techniques of painting, to include study of all major areas of painting media and their development. *Prerequisite:* PNTG 3331. 6 hours in studio per week. Laboratory Fee: \$4.

3401 Painting VI (0-6)

Continuation of Painting V. *Prerequisite:* PNTG 3341. 6 hours in studio per week. Laboratory Fee: \$6.

3431 Painting VII (0-6)

Emphasis upon individual direction and achievement. *Prerequisite:* 12 semester hours in painting or permission of instructor. Fine Arts Fee: \$10.

3441 Special Problems in Painting (0-6)

Emphasis on individual direction and achievement in painting. May be repeated for credit when problem varies. *Prerequisite:* 12 semester hours in painting or permission of instructor. Fine Arts Fee: \$10.

Printmaking (PRNT)**3205 Printmaking I (0-6)**

An examination of the various printmaking techniques — etching, engraving, drypoint, aquatint, and the execution of original works in these media. *Prerequisites:* ARTF 3101 and 3102 or permission of instructor. May be taken concurrently with ARTF 3103, 3104. 6 hours in studio per week. Laboratory Fee: \$8.

3225 Printmaking II (0-6)

Continuation of Printmaking I, with emphasis upon execution of original works. *Prerequisite:* PRNT 3205. 6 hours in studio per week. Laboratory Fee: \$8.

3305 Printmaking III (0-6)

Concentrated work in printmaking media including collography, serigraphy, and various relief processes and the planographic processes. *Prerequisite:* PRNT 3225. 6 hours in studio per week. Laboratory Fee: \$8.

3325 Printmaking IV (0-6)

Concentrated work in printmaking media including collography, serigraphy, and various relief processes and the planographic process. *Prerequisite:* PRNT 3305. 6 hours in studio per week. Laboratory Fee: \$8.

3335 Printmaking V (0-6)

A continuation of Printmaking IV, with emphasis on lithography. *Prerequisite:* PRNT 3325. 6 hours in studio per week. Laboratory Fee: \$8.

3405 Printmaking VI (0-6)

Special problems in printmaking. *Prerequisite:* 4 courses in printmaking. A minimum of 6 hours in studio per week. Fine Arts Fee: \$10.

3425 Printmaking VII (0-6)

Emphasis upon individual direction and achievement. *Prerequisite:* 12 semester hours in printmaking or permission of instructor. Fine Arts Fee: \$10.

3435 Special Problems in Printmaking (0-6)

Emphasis upon individual direction and achievement in printmaking. May be repeated for credit when problem varies. *Prerequisite:* 12 semester hours in printmaking or permission of instructor. Fine Arts Fee: \$10.

Sculpture (SCUL)**3202 Sculpture I (0-6)**

An introduction to basic sculptural concepts and materials with emphasis on simple manipulation of wood, steel and found objects. *Prerequisite:* ARTF 3101 and 3102 or permission of instructor. May be taken concurrently with ARTF 3103, 3104. 6 hours in studio per week. Laboratory Fee: \$8.

3232 Sculpture II (0-6)

Continued exploration of Sculptural concepts through the use of combining traditional sculptural materials. *Prerequisite:* SCUL 3202. 6 hours in studio per week. Laboratory Fee: \$8.

3302 Sculpture III (0-6)

Sculptural fabrication through the manipulation of steel. To include steel cutting, forging, welding, and safety procedures. *Prerequisite:* SCUL 3202 or permission of instructor. 6 hours in studio per week. Laboratory Fee: \$8.

3332 Sculpture IV (0-6)

Experimentation in the casting for non-ferrous metals to include a variety of techniques and safety procedures. *Prerequisite:* SCUL 3302 or permission of instructor. 6 hours in studio per week. Laboratory Fee: \$8.

3342 Sculpture V (0-6)

The exploration of Sculptural form through the use of non-traditional materials. *Prerequisite:* SCUL 3202 or permission of the instructor. 6 hours in studio per week. Laboratory Fee: \$8.

3402 Sculpture VI (0-6)

Investigation into the facets of public Sculpture and formal proposal writing. *Prerequisite:* SCUL 3202 or permission of the instructor. 6 hours in studio per week. Fine Arts Fee: \$10.

3432 Sculpture VII (0-6)

Advanced sculptural investigation emphasizing individual directional development. *Prerequisite:* 9 hours of sculptural background. 6 hours in studio per week. Fine Arts Fee: \$10.

3442 Special Problems in Sculpture (0-6)

Continued individual direction in Sculpture. May be repeated for credit when problem varies. *Prerequisite:* 12 semester hours of Sculpture. Fine Arts Fee: \$10.

See the *Graduate Studies Catalog* for graduate programs and courses.

Chicano Studies Research Program

104 Graham Hall
(915) 747-5462

INTERIM DIRECTOR: Dennis J. Bixler-Marquez
PARTICIPATING FACULTY:

English: Gingerich, Melendez-Hayes, West
History: Jackson
Languages and Linguistics: Aguilar, Amastae, Blansitt, Cotton, Garcia, Goodall, Phinney, Sharp, Teschner
Music: Cardon
Philosophy: Haddox, Springer
Political Science: Bath, Peterson, Staudt, Villarreal
Sociology and Anthropology: Eyde, Stoddard
Teacher Education: Barker, Bixler-Marquez, Hernandez, Villamil-Tinajero

Chicano Studies offers a variety of courses from a number of disciplines. These courses are designed to provide information about Mexican Americans, their origins, history, literature, culture and language.

Chicano Studies is designed to provide individuals with the opportunity to prepare for: (1) further study in the fields of the humanities, social science, law, medicine, engineering and business; (2) careers in community programs and teaching at all levels; and (3) advanced study in Chicano Studies fields. All courses listed in this interdisciplinary program are open to students having the academic prerequisites. Students may start at the freshman or sophomore level. Credit may be counted toward:

1. An interdisciplinary major in Chicano Studies (27 semester hours of core courses; see below). Chicano Studies majors must also complete a major in another department.
2. A Minor (18 hours; see below) to supplement a major in another field.
3. A departmental major other than Chicano Studies, where appropriate.
4. Completion of blocks of electives or free electives.

Students desiring to pursue one of these programs should consult with the Chicano Studies Director to determine a course of study suitable to their interests and future needs.

Major in Chicano Studies (27 hours)

Students wishing to major in Chicano Studies must complete the following:

1. 27 semester hours of academic Core Courses as follows:
 - 3 Chicano Studies 3105 (Prerequisite for majors and minors)
 - 3 Philosophy 3109
 - 3 One of the following: Anthropology 3205; Philosophy 3213; Sociology 3258, 3259
 - 3 Anthropology/English 3374, or Theatre Arts 3335
 - 3 English 3310
 - 3 History 3309
 - 3 Political Science 3321
 - 6 From the following: Bilingual Education 3430, 3434; History 3327, 3328, 3342, 3343, 3350, 3390; Linguistics-Spanish 3472; Philosophy 3351, 3452; Political Science 3342, 3345, 3410; Spanish 3325; Chicano Studies 3450
2. Proficiency in Spanish must be established by completion of 8 hours of Spanish (4102 or 4104) or by appropriate examination.
3. Requirements for a second academic major and BA, BS or BSW degree must be fulfilled.

Minor in Chicano Studies (18 hours)

For students with multiple interests, a minor in Chicano Studies may be pursued with any other major. To complete a minor, students must have 18 hours, at least 12 of which must be upper-division courses.

Students have the choice of four areas from which to choose depending on their desire and need. The areas are as follows:

Social Science Option

- 3 Chicano Studies 3105 (It is recommended that this course be taken first.) It can be taken as Independent Study.
- 3 From the following: Anthropology 3205; Sociology 3258, 3259

- 12 From the following: Anthropology 3374; Chicano Studies 3450 (when topic is appropriate); Political Science 3321, 3342, 3345, 3410 (when topic is appropriate); Sociology 3341 (when topic is appropriate).

Humanities Option

- 3 Chicano Studies 3105 (It is recommended that this course be taken first.) It can be taken as Independent Study.
- 3 From the following: Philosophy 3109, 3213
- 12 From the following: Chicano Studies 3450 (when topic is appropriate); English 3310, 3374; History 3309, 3327, 3328, 3342, 3343, 3390 (when topic is appropriate); Philosophy 3351, 3453 (when topic is appropriate); English/Linguistics/Spanish 3472.

Education Option

- 3 Chicano Studies 3105 or equivalent from a Core Course with permission of the education advisor. (It is recommended that this course be taken first.) It can be taken as Independent Study.
- 3 From the following: Elementary Education 3307; Secondary Education 3317
- 12 From the following: Chicano Studies 3450 (when topic is appropriate); Bilingual Education 3438, 3430, 3434, 3435, 3436, 3437; Teacher Education 3450 (when topic is appropriate).

Interdisciplinary Option

- 3 Chicano Studies 3105 (It is recommended that this course be taken first.) It can be taken as Independent Study.
- 3 From the following: Philosophy 3109, 3213; Sociology 3258, 3259
- 12 From the following: Anthropology 3374 (same as English 3374); Bilingual Education 3430; Chicano Studies 3450; Elementary Education 3307; English 3310; History 3309; Philosophy 3351; Political Science 3321; Secondary Education 3317; Spanish 3325; Theatre Arts 3335.

Chicano Studies (CHIC)

3105 Chicano Studies Survey and Analysis (3-0)

Interdisciplinary survey of the historical, socio-economic, political, artistic and literary manifestations of the Chicano Movement. It also studies the interdisciplinary nature of Chicano Studies and prepares the student for advanced courses in Chicano Studies. Course can be taken as Independent Study.

3450 Topics in Chicano Studies (3-0)

An examination of a currently relevant subject from the perspective of Chicano Studies. Topics will vary and will be drawn from the Social Sciences, Humanities, Fine Arts, and Education. (May be repeated for credit when topic varies.)

Core Courses

Anthropology: 3205, 3374 (same as ENGL 3374)
Bilingual Education: 3430, 3434, 3435, 3436, 3437
English: 3310, 3374
History: 3309, 3327, 3328, 3342, 3343, 3350
Linguistics: 3472, 3473 (same as SPAN 3472, 3473)
Philosophy: 3109, 3213, 3351, 3453 (when topic is appropriate)
Political Science: 3321, 3342, 3345, 3410 (when topic is appropriate)
Sociology: 3258, 3259, 3341 (when topic is appropriate)
Spanish: 3325, 3472, 3473 (same as LING 3472, 3473)
Teacher Education: 3450 (when topic is appropriate)
Theatre Arts: 3335

Recommended Electives

Anthropology: 3211, 3313
Art History: 3310
Bilingual Education: 3438
Economics: 3366
Elementary Education: 3307
English: 3371
History: 3316, 3344, 3345, 3349
Linguistics: 3308, 3309, 3315 (same as Spanish 3309, 3315)
Music Literature and History: 3126, 3325
Philosophy: 3312
Political Science: 3333, 3343, 3344.
Secondary Education: 3317
Sociology: 3327, 3336, 3352, 3360
Spanish: 3309, 3315 (same as Linguistics 3309, 3315)

Communication

202 Cotton Memorial
(915) 747-5129

CHAIRMAN: Lawrence J. Johnson
PROFESSOR EMERITUS: Ray Small
ASSOCIATE PROFESSOR EMERITA: Jean H. Miculka
ASSOCIATE PROFESSORS: Johnson, Wood
ASSISTANT PROFESSORS: Byrd, Etheridge, Jones

The Department of Communication affords students the opportunity to pursue the Bachelor of Arts degree in one of three majors: Journalism, Communication, and Speech. In addition, the Department also offers secondary education majors the opportunity to pursue a teaching certificate in journalism or speech.

Major In Journalism

Students pursuing a B.A. with a major in Journalism must complete the lower division Core Courses before enrolling in any other course in the department.

- A. Mass Communication Core Courses (9 hours): MC 3102 (Introduction to Mass Media), 3201 (Writing for the Mass Media), and 3250 (Principles of Advertising).
- B. Advanced Preparation (7 hours): MC 3302 (News Reporting), 3355 (Mass Communication Law and Ethics), and 1460 (Senior Orientation).
- C. Professional Options (18 hours):
 - (1) 3 hours from MC 3303 (The Feature Story) or 3306 (Broadcast News) or 3307 (Photography).
 - (2) 3 hours from MC 3305 (News Editing) or 3351 (Advertising Layout and Copy) or 3405 (Advanced Broadcast News).
 - (3) 12 hours from among courses not taken in (1) or (2) above or MC 3304 (Graphics of Journalism), 3330 (Advertising Campaigns), 3352 (Public Relations), 3353 (Magazine-Publications Production), 3357 (Mass Communication Internship), 3402 (Studies in Mass Communication), 3406 (Public Affairs Reporting), 3410 (Media Management), 3421 (Advanced Television Production), or 3454 (Photography Seminar).

Major In Communication

Students pursuing a B.A. with a major in Communication must fulfill all the requirements for the B.A. degree. In the major, students are required to take a minimum of 33 semester hours (at least 27 of which must be advanced), selected from the following areas: Foundations; Theory and Analysis; Technological, Social and Cultural Dimensions; Language; and Applied Communication.

- Foundations (3 semester hours): MC 3102, SPCH 3220, SPCH 3206
Theory and Analysis (12 semester hours): SPCH 3411; SPCH 3415; SPCH 3308, 3414, or SPCH 3443; ENGL 3358, MC 3402, or SPCH 3450
Technological, Social, and Cultural Dimensions (3 semester hours): SPCH 3307, LING 3357, or ENGL 3358, MC 3402, SPCH 3450 (when topics are appropriate)
Language (3 semester hours): ENGL 3303, SPCH 3316, or LING 3307, 3313, 3454, 3480
Applied Communication (12 semester hours, at least 9 of which must be advanced). Coursework is to be distributed among no more than two of the following categories:
- A. Persuasion and Argument: ENGL 3365, SPCH 3221, SPCH 3222
 - B. Business and Technical Communication: ENGL 3359, ADMS 3308
 - C. News and Information Communication: Print media — MC 3302, 3303, 3406; Broadcast media — MC 3306, 3405
 - D. Advertising and Public Relations: MC 3250, 3330, 3352
 - E. Creative Writing: ENGL 3361, 3362, 3367, 3368, 3369
 - F. Graphics and Production: MC 3304, 3305, 3307, 3351, 3353
 - G. Translation: ENGL/LING/SPAN 3481, 3482, 3491, 3492

Major In Speech

Students pursuing a B.A. with a major in Speech must fulfill all the requirements for the B.A. degree. In the major, students are required

to take a minimum of 34 hours (at least 18 of which must be at the upper-division level), from the following areas: Introductory Coursework, Communication Analysis, Practica, and Electives.

- A. Introductory Coursework: 6 semester hours from the following: SPCH 3220, SPCH 3221, SPCH 3222.
- B. Communication Analysis: 15 semester hours from the following: SPCH 3206 or 3307; SPCH 3308; SPCH 3290 or 3491; SPCH 3411 or 3414; SPCH 3443.
- C. Practica: 4 semester hours from SPCH 2221 and/or 2222.
- D. Electives (9 semester hours): 9 additional hours from the courses listed above (when not used to fill requirements A-C) or from SPCH 3316, 3415, 3430, 3450 (Note: electives will be selected to ensure that at least 18 semester hours are completed in upper-division coursework.)

Secondary education majors should consult the current speech teaching field requirements on page 68 of this catalog.

Minor In Communication

Students may minor in Communication through the completion of a course of study, approved by the department in advance, that consists of at least 18 hours of Mass Communication and Speech courses, 12 of which must be upper-division hours. Suggested minor plans include (but are not limited to):

- Journalism Minor — MC 3201, 3302, 3303, 3305, 3355, 3402, 3406.
Photography and Graphics Minor — MC 3304, 3307, 3351, 3454 (may be repeated for credit).
Organizational Communication Minor — SPCH 3206, 3220, 3307, 3308, 3430, 3443.
Public Relations Minor — MC 3250, 3330, 3352, 3402; SPCH 3222, 3491.

Mass Communication (MC)

For Undergraduates

*Mass Communication Core Courses

*3102 Introduction to Mass Media (3-0)

An introduction to the mass communication media in the United States, their history, their roles, and issues within these media.

1103 Audio In Media (0-6)

Theory and techniques of sound recording in the radio, television, and film industries. *Prerequisite:* MC 3102.

3200 Introduction to Newswriting (3-0)

An introduction to newswriting techniques used in the mass media. Heavy emphasis on news style and story construction, grammar, spelling and punctuation as used in the news media. *Prerequisites:* Sophomore standing, completion of ENGL 3111-3112.

1220 Television Production (0-8)

An introduction to the equipment and production techniques of television. Beginning problems in television production that include beginning directing for studio and electronic news gathering activities. *Prerequisite:* MC 1103.

*3201 Writing for the Mass Media (2-5)

Fundamentals of newswriting and story structures with emphasis on development of information gathering skills and journalistic style. Concentration is on print media. *Prerequisites:* Sophomore standing, ability to type 30 words per minute, completion of MC 3102, ENGL 3111-3112, and completion of MC 3200 (or passing of equivalency exam). Laboratory Fee: \$5.

*3250 Principles of Advertising (3-0)

Overview of advertising principles and practices including media characteristics, rates and budgeting, introduction to campaigns, and social and economic criticism of advertising. *Prerequisites:* Sophomore standing and MC 3102.

3302 News Reporting (2-6)

Emphasis on developing and writing news stories of substance and depth for publication. Emphasis on more complex issues and story structures with development of journalistic writing style. Includes news features, interpretive and investigative reporting and news gathering. *Prerequisites:* Junior standing, MC Core Courses with C or better in MC 3201. Laboratory Fee: \$5.

3303 The Feature Story (3-0)

Methods of gathering material for feature stories through interviews, research and observation; study of feature story form and style; discussion of markets for literary material; practice in writing feature stories. *Prerequisites:* Junior standing and MC Core Courses with C or better in MC 3201.

3304 Graphics of Journalism (3-3)

Use of graphics for effective communication including typography, copyfitting, computer graphics, printing methods and costs estimations. *Prerequisites:* Junior standing and MC Core Courses. Laboratory Fee: \$7.

3305 News Editing (3-3)

Instruction and practice in basic story editing and production with focus on practical experience in editing and copy preparation for publication. Emphasis on development of news judgment, accuracy and fairness while exposing students to legal problems confronting the media. *Prerequisites:* MC 3304, Junior standing, MC Core Courses with C or better in MC 3201. Laboratory Fee: \$5.

3306 Broadcast News (3-0)

Writing and reporting for broadcast media. *Prerequisites:* MC Core Courses and MC 3302.

3307 Photography (3-3)

Basic instruction in generating picture ideas and in lenses, exposures, camera capabilities and photographic processes including development of film and printing of pictures. *Prerequisites:* MC Core Courses. Laboratory Fee: \$10.

3330 Advertising Campaigns (3-4)

Research, planning, designing, client presentation and execution of an advertising campaign. Offered only in spring semester to coincide with American Advertising Federation student competition. *Prerequisite:* Junior standing for majors and by permission of instructor for non-majors. Laboratory Fee: \$7.

3351 Advertising Layout and Copy (3-3)

Basic course in production of newspaper, magazine, and television advertising from conceptualization to comprehensives. *Prerequisites:* Junior standing, MC Core Courses and 3304. Laboratory Fee: \$7.

3352 Public Relations (3-0)

Principles, techniques and methods used in public relations. *Prerequisites:* Junior standing, MC Core Courses with C or better in MC 3201.

3353 Magazine/Publications Production (3-3)

Production of small magazines through offset reproduction. Stresses basics of organization, layout, design and copyfitting. *Prerequisites:* Junior standing, MC Core Courses and 3304. Laboratory Fee: \$7.

3355 Mass Communication Law and Ethics (3-0)

A study of the rights and responsibilities imposed upon and exercised by the mass media under the American system of law. Ethical considerations in exercising responsibilities vested in the media are highlighted. *Prerequisites:* Junior standing and MC Core Courses.

3357 Mass Communication Internship (1-15)

Students in this program are provided an opportunity to gain practical experience through unremunerated professional participation in the activities of professional firms, agencies or departments in their major emphasis area. *Prerequisites:* Junior standing, completion of 25 semester hours in the major, and departmental approval.

3402 Studies in Mass Communication (3-0)

Subject(s) to be selected by professor in charge of special work in advanced fields. *Prerequisites:* Senior standing and MC Core Courses.

3405 Advanced Broadcast News (3-0)

Announcing, advanced interviewing techniques, and script preparation. *Prerequisite:* MC 3306.

3406 Public Affairs Reporting (2-5)

An intensive reporting course that examines public institutions, their structures and operations and provides student practice for publication in reporting on city, county, state and federal offices. *Prerequisites:* Senior standing, MC Core Courses and C or better in 3302. Laboratory Fee: \$5.

Prerequisites: Senior standing, MC Core Courses and C or better in 3302. Laboratory Fee: \$5.

3407 Radio Programming and Production (3-7)

Development of techniques, program organization, audience analysis, recording and directing through advanced projects in radio programming and production. Students will produce programs for possible broadcasting on KTEP-FM. *Prerequisites:* MC 1103, MC 3405. Laboratory Fee: \$7.

3410 Media Management (3-0)

This course examines the role of the manager and legal, ethical, personnel and organizational issues in media management. The course emphasizes analysis of both hypothetical and real management situations and problems. *Prerequisite:* Senior standing.

3421 Advanced Television Production (3-4)

This course focuses on producing and advanced directing with emphasis on electronic news gathering and production of documentaries or news inserts. *Prerequisites:* MC 3405, MC Core courses, 1220. Laboratory Fee: \$10.

3454 Photography Seminar (3-3)

Problem-solving, problem-solving exercises, discussion and research in photography. Problems in publication will be stressed, including campus, regional and national publications. Projects will include word-picture essays suitable for publication. May be repeated for credit in the minor. *Prerequisite:* MC 3307. Laboratory Fee: \$10.

1460 Senior Orientation (1-0)

Analysis of career objectives, approaches, and developmental planning.

Speech (SPCH)**1103 Voice and Articulation Laboratory (0-2)**

This laboratory is required for students enrolled in SPCH 3103. Practice in the skills of relaxation, respiration, phonation, resonance, and articulation through exercises and the use of recording equipment. May be taken twice for credit.

2221 Practicum in Forensic Debate (0-4)

Practical laboratory experience in all phases of research, case preparation, argumentation, and analysis of the current National Debate Topic and/or the current Cross-Examination-Debate Association topic for public competitive presentation. Includes participation in on-campus public debate program which may also include topics of local/current interest. May be repeated for credit. *Prerequisite:* Permission of instructor.

2222 Practicum in Forensic Individual Events (0-4)

Practical laboratory experience in all phases of oratory, oral interpretation, extemporaneous and impromptu speaking, expository speaking, dramatic duo, and other individual events for public and competitive presentations. Includes participation in on-campus public presentations program. May be repeated for credit. *Prerequisite:* Permission of instructor.

3101 Public Speaking (3-0)

Introduction to the theory and practice of public speaking; the inventing, arranging, phrasing and presenting of ideas to an audience. The complementary skills of speaking and listening are developed through criticism of speeches presented in class.

3102 Business and Professional Speech Communication (3-0)

A course in communication covering both informative and persuasive presentations as these occur in business and professional activities. Instruction and guided practice in formal and semi-formal speaking situations.

3103 Voice and Articulation (3-0)

A course designed to improve the student's speech. Includes the study of and personal application to the speech anatomy and the processes of speech, phonetics, and the major dialects of American English and stage diction. The required laboratory is SPCH 1103. Credit will not be given for 3103 unless 1103 is taken and passed at the same time.

6111 Written and Oral Communication (6-0)

Integrated study of and practice in oral and written communication, with emphasis on the processes leading to the creation of effective

live essays and speeches; complementary skills of reading and listening are developed through extensive response to others' written and spoken work. Counts for both English 3111 and Speech 3101. *Prerequisite:* English 3110 or placement by examination.

3205 Oral Interpretation (3-0)

Study and practice of the techniques of oral interpretation of literature.

3206 Introduction to Interpersonal Communication (3-0)

An examination of verbal and non-verbal behavior as factors in the human communication process. Treatment of such factors as listening, perception, attitudes, small group interaction, and other problems relating to personal and interpersonal communications. This is not a course in public address.

3220 Introduction to Rhetoric and Public Address (3-0)

Emphasis on understanding basic concepts of persuasion theory drawn from classical sources and recent findings in speech and social psychology. Model speeches are analyzed. Some attention is given to historical development of rhetorical theory. Lecture and class discussion, not a practice course in public speaking.

3221 Argumentation (3-0)

Understanding and using the techniques of logical appeal; analysis of propositions, discovery of arguments, use of evidence and inference, refutation, detection of fallacies and stratagems. Exercises include team preparation of briefs, presentation of several speeches, analysis and refutation of other students' speeches.

3222 Persuasion (3-0)

Understanding and using the techniques of persuasion, with particular emphasis on analysis of and adaptation to audiences, and enhancing the persuader's image. Main concern is with public speaking, but application of persuasive techniques in other forms of communication is discussed. Preparation and presentation of a variety of speeches.

3290 Introduction to the Art of the Motion Picture (3-0)

Understanding and appreciating film as a unique medium for communication and artistic expression. Introduces students to a broad range of types of films. Basic theory presented in class. Films viewed in class and on campus are discussed in class.

3307 Small Group Communication (3-0)

An examination of small group interaction behavior based on research in sociology, psychology, management, and speech communication. Emphasis on task or decision oriented group work. The class is used as a laboratory experience.

3308 Organizational and Institutional Communications (3-0)

An examination of theory combined with a laboratory approach designed to develop an understanding and proficiency in small group and interpersonal communication within an organizational decision-making context. Direct application of the material to professional needs; e.g., in business, counseling, teaching.

3316 General Semantics (3-0)

A study of problems in the use of language — verbal and non-verbal — and the effect of language on thinking and behavior. Designed to broaden understanding of intrapersonal and interpersonal communication theory.

3333 Methods of Teaching Speech Communication (3-0)

Designed for the teacher of speech in the Language Arts program or the secondary school. Includes the study of methods of teaching and evaluating classroom speech activities, conducting extracurricular speech activities. *Prerequisite:* 9 hours of lower division speech courses.

3334 Directing Forensic Activities (3-0)

Designed for future teachers of speech or drama and especially for speech coaches in junior high school speech programs. Introduces students to competitive speech activities, including conducting and coaching extracurricular speech activities, and structuring and judging interscholastic tournaments. On-campus UIL activities will allow students practical laboratory experience in addition to in-class lecture and exercises.

3411 Classical Rhetorical Theory (3-0)

Study of the evolution of theories of persuasion from pre-Socratic Greece through the Roman empire. Analysis of the contributions to persuasion theory made by Aristotle, Cicero, Quintilian, and other major classical rhetoricians.

3414 Contemporary Rhetorical Theory (3-0)

Study of modern, humanistic contributions to theories of communication and persuasion.

3415 Speech Criticism (3-0)

Application of various systems of rhetorical theory to criticism of significant public addresses. In different semesters the course will focus on classical, British, or American orators. May be repeated when topic varies.

3430 Seminar in Speech Communication (3-0)

Seminar for systematic discussion and research of topics in speech communication. Specific content is determined by participating faculty and students.

3431 Teaching Speech to Students from Diverse Cultures (3-0)

Modern methods include small group instruction, use of dramatic techniques, special audio and video tapes, and attention to individual problems.

3443 Communication Analysis and Theory (3-0)

Study of the analysis of human communication. Investigation of the techniques of constructing communication models and communication theory. Elements and types of models and theories will be explored through application to existing communication phenomena.

3450 Selected Topics in Speech Communication

Instruction of students individually and in groups in a significant area of rhetorical theory, communication theory, public address or speech education which is not covered by regular catalog offerings. May be repeated for credit when content varies.

3491 Motion Pictures to Inform and Persuade (3-0)

The uses and techniques of the documentary film. The use of both fiction and non-fiction films as instruments to influence public opinion. Persuasion theory and film theory are applied in analysis of films shown in class.

See the *Graduate Studies Catalog* for graduate programs and courses.

Criminal Justice

102 Old Main and 303 Jack Vowell Hall
(915) 747-5740 or 747-5296

CHAIRMAN: Howard Daudistel

DIRECTOR: Joseph B. Graves

PROFESSOR: Graves

ASSOCIATE PROFESSOR: Mahan

ASSISTANT PROFESSORS: Guinn, Holmes

The Criminal Justice Department offers an interdisciplinary major that is designed to offer students the opportunity to prepare themselves for a professional career in Criminal Justice.

B.S. in Criminal Justice

1. Complete a minimum of 131 semester hours, including at least 54 hours at the advanced level.
2. Complete 83 semester hours of academic core courses as follows:
 - 9 Communication Skills: English 3111 (or 6111), 3112, 3359; or ESOL 3111, 3112, 3203, and English 3359
 - 6 History 3101, 3102 or 3103, 3104
 - 18 Political Science 3110, 3111, 3250, 3328, 3329, 3429
 - 18 Sociology 3101, 3311, 3333, 3348 and two courses (6 semester hours) from Sociology 3102, 3258, 3259, 3327, 3342, 3349, 3401
 - 9 Psychology 3101, 3212, 3315
 - 3 Speech 3101, 3102, 3104 or 3221
 - 12 Natural Science and/or Mathematics: Biology, Chemistry, Geology, Mathematics, Physics

- 8 Foreign Language: French, German, Spanish, Russian; or 6 hours in Italian or Portuguese.
3. Complete 15 semester hours of electives, at least 3 of which must be at the advanced level.
4. Complete the following required courses in Criminal Justice: 3101, 3200, 3205, 3206, 3311, 3313, 3420, 3422
5. Complete at least three courses from the following: Criminal Justice 3301, 3302, 3306, 3307, 3308, 3309, 3310, 3315, 3320, 3350, 3400, 3401, 3410, 3425.
6. Complete additional courses prescribed by the Director of the Criminal Justice Department.

Minor in Criminal Justice: BA degree students who wish a minor in Criminal Justice should complete CRIJ 3101, 3308, 3313, 3315, 3350, 3422.

Criminal Justice (CRIJ)

For Undergraduates

General Prerequisite: Junior standing for all 3300 or 3400 level courses.

3101 Introduction to Criminal Justice (3-0)

Development and philosophy of criminal justice in a democratic society, introduction to agencies involved in the administration of criminal justice.

3200 Criminal Law (3-0)

History and philosophy of modern criminal law, including the structure, definition and application of statute and leading case law; the elements of crimes and penalties. Texas Penal Code used as a reference.

3205 Criminal Procedures and Evidence (3-0)

Introduction to the rules governing the admissibility of evidence and types of evidence; criminal procedure in various courts; review of the Texas Code of Criminal Procedure, including laws of arrest, search and seizure, and leading case law in each topic.

3206 Introduction to Corrections (3-0)

A tracing of the evolution and the philosophical underpinnings of institutional and community based correctional practices.

3301 Criminal Investigation (3-0)

Fundamentals of criminal investigation, including theory and history, and collection and preservation of evidence. *Prerequisite:* CRIJ 3205 or consent of instructor.

3302 Police Organization and Administration (3-0)

Principles of organization and management as applied to law enforcement agencies, introduction to concepts of organizational behavior.

3306 Probation and Parole (3-0)

Development, organization, operation and result of systems; discussion of probation and parole as substitutions for incarceration; methods of selection; prediction scales. *Prerequisite:* SOCI 3348 or consent of instructor.

3307 Criminalistics (3-0)

This course covers the study of general criminalistics, with particular attention given to scientific crime detection methods; the crime scene search; and methods and devices used in the examination of evidence.

3308 Juvenile Procedures (3-0)

The organization, functions, and jurisdiction of juvenile agencies; the processing and detention of juveniles, case disposition; juvenile statutes and court proceedings.

3309 Correctional Counseling (3-0)

Methods used by correctional officers in rehabilitating criminal offenders. *Prerequisite:* 6 hours of Psychology.

3310 The Texas Family Code and Juvenile Law (3-0)

The history and philosophy of juvenile law with emphasis on the elements of juvenile offenses.

3311 Police Crime Control and Crime Prevention (3-0)

An examination of police activity relating to crime control and crime prevention. Routine police activity and experimental programs in crime reduction will be examined.

3313 Crime and Violence, and Criminal Behavior (3-0)

An assessment of the direct and indirect impact of crime and violence on the individual in contemporary society. Typological analysis of the violent criminal will be covered.

3315 Human Services in Criminal Justice (3-0)

Personal and professional techniques for stress and crisis management in criminal justice.

3320 Supervision for Criminal Justice Personnel (3-0)

The role of the supervisor in criminal justice agencies, including responsibilities at first and second line levels. Relationship of supervision and goal attainment, organizational control, and as a facilitative device for interaction between formal and informal organization.

3350 The Courts and Criminal Justice Agencies (3-0)

Interactions of courts and police and correctional agencies are examined with emphasis on the impact court decisions have on criminal justice administration and procedures.

3400 Selected Topics in Criminal Justice (3-0)

Focuses on those selected issues and problems confronting the various components of the criminal justice system. Topics covered may change each semester. May be repeated for credit upon change of topic.

3401 Readings in Criminal Justice (3-0)

This course is designed for the advanced student who is capable of independent study. Existing regulations, both formal and informal, which govern practitioners in the area of criminal justice will be examined. This course may be repeated for credit when the topics vary.

3410 Internship in Criminal Justice (3-0)

A program in which the student is assigned two days (or 16-20 hours) each week to a criminal justice agency. A weekly seminar is also required. Designed to provide the student with an opportunity to apply academic training in practical situations. *Prerequisite:* Consent of the Department Director.

3420 Criminal Justice Management (3-0)

The structures, functions, and operations of criminal justice agencies, including the police, the court, and corrections (jail, probation, prison and parole) are analyzed within the context of the entire criminal justice system and in relation to various public and governmental bodies. Particular attention is given to decision-making and policy analysis in the administration of justice.

3442 Research Problems in Criminal Justice (3-0)

Review and assessment of data gathering techniques in research problems unique to criminal justice. *Prerequisite:* SOCI 3311 or consent of instructor.

3425 Moot Court (3-0)

Substantive and procedural problems encountered in a criminal court proceeding. Focus will be on the role of the law enforcement and correctional officer in the judicial process. *Prerequisites:* CRIJ 3200, 3205, or consent of the instructor.

See the *Graduate Studies Catalog* for graduate courses.

English

113 Hudspeth Hall
(915) 747-5731

CHAIR: Tony J. Stafford

PROFESSORS EMERITI: Lurline H. Coltharp, Joseph Leach, Ray Small, Charles Leland Sonnichsen

PROFESSORS: Buringame, Day, Gladstein, Hernandez, Stafford, Taylor, West

ASSOCIATE PROFESSORS EMERITI: Lillian Collingwood, Francis Fugate, Joan Phelan Quarm, Roberta Walker

ASSOCIATE PROFESSORS: Antone, Bledsoe, De Marinis, Esch, Gingerich, Johnson, Melendez-Hayes, Meyers, Mortensen, Mortimer, Ullman

ASSISTANT PROFESSORS: Boley, Brooks, Dick, Hager, Jussawalla, Justice, Kiska, Lawson, Mansfield-Kelley, Marchino, Potts, Scheiber, Smith, Trejo, White

Undergraduate Degree Requirements

Requirements for all undergraduate degrees from the University of Texas at El Paso include successful completion of English 3112 or 3113 (or ESOL 3112). Course work toward this goal consists of a three-step program to develop college-level competence in composition, rhetoric, and research procedures. This program is designed to provide students with the skills in language and communication that they will need for the remainder of their undergraduate careers and for professional achievement in their selected fields following graduation.

Unless ENGL 3110 is completed by advanced placement, the course must be taken each time the student enrolls until it is passed; thereafter, unless ENGL 3111 is completed by advanced placement, the course must be taken each time the student enrolls until it is passed; thereafter, unless ENGL 3112 is completed by advanced placement, the course must be taken each time the student enrolls until it is passed.

ALL STUDENTS MUST PRESENT TEST SCORES FOR PLACEMENT IN THE FRESHMAN ENGLISH PROGRAM, USING ONE OF THE FOLLOWING OPTIONS.

1. TEST OF STANDARD WRITTEN ENGLISH (OR ACT ENGLISH EXAM). A score of 40 or higher on the Test of Standard Written English (TSWE, a separately reported part of the Scholastic Aptitude Test) or an ACT English score of 19 or higher entitles a student to enroll in English 3111 or 6111. A student placed in either of these classes by testing does not receive credit for English 3110. (For those who have not already done so, the TSWE may be taken at UTEP's Testing Service, The Union, 209 West.)
2. TSWE OR ACT, CEEB ACHIEVEMENT TEST IN COMPOSITION OR THE UTEP COLLEGE PLACEMENT TEST IN COMPOSITION OR THE CLEP SUBJECT EXAM IN COMPOSITION, AND WRITTEN ESSAY. A TSWE score of 50 or higher or an ACT score of 23 or higher, and (a) a score of 550 or higher on the College Entrance Examination Board (CEEB) Achievement Test in English or on the UTEP College Placement Test (administered by the University Testing Service), or (b) a score of 50 or higher on the CLEP Subject Exam in College Composition, and a satisfactory written essay (taken either in conjunction with the CEEB or CLEP Exam, or separately, at the University Testing Service) entitles a student to enroll in English 3112. The student will receive three hours of credit, without letter grade, for English 3111.
3. TSWE OR ACT, AND CEEB ADVANCED PLACEMENT EXAMINATION OR CLEP SUBJECT EXAM IN COMPOSITION WITH ESSAY. A TSWE score of 50 or higher or an ACT score of 23 or higher, and a score of three or higher on the CEEB Advanced Placement Examination in Literature or Composition, or (b) a score of 60 or higher on the CLEP subject Exam in Composition (with a satisfactory written essay) entitles a student to have English 3112 waived. The student will receive six hours of credit, without letter grade, for English 3111 and 3112.

Entering freshmen who have not presented TSWE or ACT scores for admission should apply at least two weeks prior to registration to take the TSWE at the University Testing Service, The Union 209 West. Those who score 50 or higher may then apply to take the College Placement Test.

4. Students whose post elementary education has not been in English should take the placement examination administered by the Department of Languages and Linguistics. Information about time and place of the exam is given in each semester's Schedule of Classes.

English Major Degree Options

Students are expected to consult with the Director of Literature and/or the Director of Creative Writing concerning the selection of options and courses.

B.A. DEGREE — ENGLISH AND AMERICAN LITERATURE: This option is directed primarily toward students interested in studying English and American Literature, providing them an opportunity to prepare themselves for postgraduate study in fields as diverse as literature, law, and public relations, or for teaching careers on the secondary

and university levels. After completing the freshman English requirement, students selecting the Literature Option take English 3211 and 3212. They then take 30 hours in advanced-level literature courses as follows:

1. One of the following: 3319 (Renaissance Prose and Poetry), 3323 (Seventeenth-Century Prose and Poetry), 3330 (Neo-Classical Literature), 3415 (The Development of English Drama), or 3447 (The English Novel through the Eighteenth Century).
2. 3320 (Shakespeare's Major Plays) or 3321 (Representative Shakespearean Works).
3. Two of the following: 3333 (Romantic Literature), 3337 (Victorian Literature), 3343 (Early Twentieth-Century Poetry), 3344* (Contemporary Poetry), 3425 (British Drama since 1880), 3448 (The English Novel: Nineteenth Century), or 3449 (The English Novel: Twentieth Century).
4. 3408 (Chaucer), 3409 (Milton), or 3440 (when the topic is a major British author).
5. Two of the following: 3311 (American Literature to 1860), 3312 (American Literature since 1860), 3343 (Early Twentieth-Century Poetry), 3344* (Contemporary Poetry), 3416 (American Poetry through the Nineteenth Century), 3417 (American Fiction to 1900), 3418 (Early Twentieth-Century American Fiction), 3419 (American Fiction since 1945), 3422 (American Drama).
6. 3450 (Major Individual American Author).
7. 6 hours of advanced literature courses, with 3414 (Literary Criticism) strongly recommended.

*may be counted for credit under either 3 or 5 but not both.

B.A. DEGREE — CREATIVE WRITING: This option is directed primarily toward students interested in preparing themselves for careers in professional writing and editorial activities or in teaching creative writing at the secondary or college level. After completing the freshman English requirement, students selecting the Creative Writing Option take English 3211 and 3212. They then take 30 hours in advanced-level English courses as follows:

1. Five of the following: 3361 (Creative Writing), 3362 (Contemporary Non-fiction Writing and Editing), 3365 (Advanced Composition), 3367 (Fiction Techniques), 3368 (Commercial Fiction), 3369 (Television and Screenplay Writing), 3370 (Poetry Techniques), 3414 (Literary Criticism), or 3440 (Advanced Literary Studies, when the topic is creative writing).
2. 3420 (Workshop in Creative Writing), offered in the Spring semester only. This course has as its prerequisites English 3361 and English 3367 or 3368 or 3370.
3. Four of the following: 3311, 3312, 3319, 3320, 3321, 3323, 3330, 3333, 3337, 3343, 3344, 3408, 3409, 3415, 3416, 3417, 3418, 3419, 3422, 3425, 3447, 3448, 3449, 3450.

Minors in English. There are four options for the Minor in English, each of which requires the completion of 18 advanced hours:

1. Literature — 3 hours, British literature before 1800; 3 hours, British literature since 1800; 3 hours, American literature; plus 9 elective hours in literature courses. With permission of the Department Chair or Director of Literature, English 3211 and/or 3212 may be counted in the literature minor.
2. Creative Writing, for students interested in writing poetry, fiction, non-fiction, screenplays, or plays — ENGL 3361; 6 hours, literature; 9 hours, creative writing.
3. Composite — The student may elect to concentrate on a specific field such as folklore, American Studies, Ethnic studies, or dramatic literature, or may elect a more varied course of study. Students selecting this minor should consult with the director of the program in which they intend to complete most of their coursework.
4. Professional Writing and Rhetoric — Required Courses (12 hours): ENGL 3303, English Grammar and Usage; 3359, Technical Writing (Administrative Services 3308, Business Communication, may be substituted for English 3359 with permission of PWR Program Director); 3365, Advanced Composition and Rhetoric; 3400, Senior Writing Practicum. Elective Courses: 6 hours from the following list of courses: ENGL 3358, Special Problems in Writing; ENGL 3362, Creative Writing; Contemporary Non-Fiction and Editing; PHIL 3205, Logical Analysis; POSC 3438, Administrative Theory; SPCH 3308, Organization and Institutional Communications; SPCH 3411, Classical Rhetorical

- Theory; SPCH 3414, Contemporary Rhetorical Theory; CIS 3225, Information Systems and Basic Programming (Course is prerequisite for all CIS courses); CIS 3300, COBOL Programming; MGMT 3300, Introduction to Management; MGMT 3310, Introduction to Organization Behavior; MGMT 3418, Management for Technical Professionals; ADMS 3308, Business Communication.

English (ENGL)

Courses for Undergraduates

3001 Improving Reading/Writing (3-0)

Taught only in conjunction with English 3110 for designated provisional students. Provides an introduction to techniques of reading, writing, and thinking; provides systematic instruction and practice in English word form and sentence structure; offers integrated reading and writing assignments that enable students to recognize and use the logical structures of a variety of forms of written discourse. Credit hours received for English 3001 may count toward removal of provisional status, but may not be used to satisfy any institutional degree requirements.

3110 Basic English Composition (3-0)

Introduction to the writing process: prewriting, drafting, revision, and editing/proofreading; emphasis on adapting the writer's ideas and purpose to an audience. Editing skills (punctuation, spelling, grammar/usage) are presented within the context of the students' own writing. The course is designed as an introduction to English 3111. (ESOL 5110 may be substituted by non-native English speakers.)

3111 Expository English Composition (3-0)

Instruction in addressing academic writing tasks through the composing process, with emphasis on strategic use of language, of rhetorical form, and of authorial voice and point-of-view to inform and persuade effectively; development of critical thought through writing and reading complex discourse. *Prerequisite:* ENGL 3110 or placement by examination. (Non-native English speakers may substitute ESOL 3111).

6111 Written and Oral Communication (6-0)

Integrated study of and practice in oral and written communication, with emphasis on the processes leading to the creation of effective essays and speeches; complementary skills of reading and listening are developed through extensive response to others' written and spoken work. Counts for English 3111 and Speech 3101. *Prerequisite:* ENGL 3110 or placement by examination.

3112 Research and Critical Writing (3-0)

Instruction in incorporating research into writing, with emphasis on 1) focusing questions, 2) using academic methods and resources, 3) learning to comprehend, analyze, synthesize, and critically evaluate materials, 4) shaping materials into coherent pieces of discourse appropriate to the writer's purpose and audience, and 5) understanding the logic and forms of documentation. (Non-native English speakers may substitute ESOL 3112.) *Prerequisite:* ENGL 3111/6111 or placement by examination.

3113 Writing about Literature (3-0)

A research and writing course in the analysis and interpretation of literature, progressing from basic exegesis of diction and syntax to the broad range of critical and stylistic approaches to literary works. Strongly suggested as preparation for junior and senior level courses in literature. Required of all English majors in lieu of English 3112. Strongly advised for all English Education students. May be substituted for English 3112 with the approval of the student's major department.

Unless otherwise indicated, the prerequisite for 3200-level courses is English 3112 or 3113.

3211 English Literature (3-0)

English literature from the beginning through Samuel Johnson. Required of all English majors.

3212 English Literature (3-0)

English literature from the Romantics to the present. Required of all English majors.

3213 Introduction to Fiction (3-0)

Contemporary works as well as the historical development of the genres.

3214 Introduction to Drama (3-0)

Study of the nature and variety of drama through examination of the contemporary theatre and its historical development.

3215 World Literature in Ancient, Medieval, and Early Renaissance Times (3-0)

Ancient literatures such as the works of Homer, the Bible, Greek tragedy and comedy, up to Cervantes' *Don Quixote*. All foreign literatures are read in contemporary translation.

3216 World Literature from the Late Renaissance to the Present (3-0)

Great writers from the late Renaissance to such modern authors as Dostoevsky, Kafka, Hesse, and Solzhenitsyn. All foreign literatures are read in contemporary translation.

3218 Introduction to Poetry (3-0)

Study of the nature and forms of poetry through examination of modern poetry and its historical antecedents.

The prerequisite for 3300-3400 level courses is junior standing. English 3113 is strongly advised.

3301 Literary Studies (3-0)

A study of special literary subjects of interest to non-English majors. Topic varies with the instructor. May be repeated once for credit when subject changes.

3303 English Grammar and Usage (3-0)

Concepts and terminology of traditional grammar; the conventions of the written language, issues in contemporary usage. *Prerequisite:* ENGL 3112 or 3113.

3305 Children's Literature (3-0)

A survey of the major genres of literature for children from the seventeenth century to the present, including traditional to contemporary poetry, folk and fairy tales, fantasy, realistic fiction, biography, and informational books.

3306 Young Adult Fiction (3-0)

Study of major works of fiction that appeal to the young adult reader, with emphasis on contemporary novels and short stories.

3310 Chicano Literature (3-0)

Study of representative Chicano works, in prose, poetry, drama and folklore, from 1848 to the present.

3311 American Literature to 1860 (3-0)

Representative writers from the Colonial period to 1860, with emphasis on major figures such as Poe, Emerson, Thoreau, Hawthorne, Whitman, and Melville.

3312 American Literature since 1860 (3-0)

Representative writers from the Civil War to the present, with emphasis on major figures.

3313 The History of the English Language (3-0)

The development of the English language from old through middle to modern English, with selected readings in the original.

3315 Literature of the Black American (3-0)

Study of representative Black American prose and poetry from the Colonial period to the present.

3317 Film Criticism (3-0)

Theory and practice of the various critical approaches to film, including survey of the major film theorists from Eisenstein to the present.

3319 Renaissance Prose and Poetry (3-0)

The study of major non-dramatic prose and poetry of the 16th-century from More through Drayton, with special emphasis on the period of Spenser.

3320 Shakespeare's Major Plays (3-0)

Detailed study of the major plays, including *Hamlet*, *Othello*, *Lear*, *Macbeth*, *The Tempest* and others.

3321 Representative Shakespearean Works (3-0)

Detailed study of Shakespeare's other well-known plays, such as *Romeo and Juliet*, *The Taming of the Shrew*, *Twelfth Night*, *Troilus and Cressida*, as well as non-dramatic works such as the *Sonnets*.

3323 Seventeenth-Century Prose and Poetry (3-0)

A study of the major poets and prose writers, with emphasis on such authors as Donne, Jonson, the Cavalier Poets, Milton, Bacon, Browne, and Hobbes.

3330 Neo-Classical Literature (3-0)

A study of major poets and prose writers from 1660 to the end of the eighteenth century, with emphasis on such authors as Rochester, Dryden, Pope, Swift, Gay, Fielding, Johnson, Collins, and Cowper.

3333 Romantic Literature (3-0)

A study of the major poets and prose writers, with emphasis on such authors as Burns, Blake, Wordsworth, Coleridge, Lamb, Hazlitt, Byron, Shelley, Keats, Landor, and DeQuincey.

3337 Victorian Literature (3-0)

A study of the major poets and prose writers, with emphasis on such authors as Tennyson, Browning, Macaulay, Carlyle, Arnold, Newman, Ruskin, Pater, Stevenson, Rossetti, Meredith, Morris, Swinburne, Hardy, Hopkins, and Housman.

3343 Early Twentieth-Century Poetry (3-0)

The most important poets, British and American, of the early twentieth century, with emphasis on such authors as Eliot, Yeats, Frost, Graves, Lawrence, Pound, Williams, Stevens, and Thomas.

3344 Contemporary Poetry (3-0)

The most important poets, British and American, of the later twentieth century, with emphasis on such authors as Auden, Creeley, Hughes, Plath, Sexton, Stafford, Bly, Berryman, Roethke, Wright, and Wilbur.

3358 Special Problems in Writing (3-0)

A study of special writing problems. Specific topics will vary; instructors may require concurrent enrollment in another subject area course. *Prerequisite*: ENGL 3112 or 3113.

3359 Technical Writing (3-0)

A professionally oriented communication course centered on assembling, organizing, drafting, and revising technical information for generating written documents and oral reports.

3360 Women in Literature (3-0)

A study of women writers and images of women in literature. Topic varies with the instructor. May be repeated once for credit when the topic changes.

3361 Creative Writing (3-0)

Basic techniques of imaginative writing applicable to fiction, poetry, and non-fiction. For students interested in pursuing an interest in writing through advanced workshop courses and/or opportunities for expanding their powers of written expression through exercise of the senses, memory, and imagination. The course introduces students to the uses of concrete language, imagery, character portrayal, and plotting techniques.

3362 Creative Writing: Contemporary Nonfiction Writing and Editing (3-0)

Study and practice in the techniques of contemporary nonfiction. Scope includes communication on various levels of readership, analysis of periodical article types and their structure, and techniques of biographical or autobiographical writing. Attention is given to the use of fictional techniques in nonfiction.

3365 Advanced Composition and Rhetoric (3-0)

Study of classical and contemporary rhetorical theory with emphasis upon the aims and modes of contemporary discourse; practice in techniques of invention, organization, and style as applied to writ-

ten composition. *Prerequisite*: ENGL 3112 or 3113. Open to freshmen exempted from ENGL 3112.

3367 Creative Writing: Fiction Techniques (3-0)

Study and practice in the techniques of contemporary fiction writing, emphasizing such matters as point of view, tone, characterization, plot, setting, and diction, with assignments requiring the resolution of fiction writing problems. *Prerequisite*: ENGL 3361.

3368 Creative Writing: Commercial Fiction (3-0)

Emphasis on writing contemporary fiction for commercial publication. Attention is given to the techniques necessary for the freelance writer to meet the requirements at various levels of the ever-changing literary marketplace. *Prerequisite*: ENGL 3367 or permission of the instructor.

3369 Creative Writing: Television and Screenplay Writing (3-0)

Basic techniques for conceiving and writing the contemporary television and screen play with assignments devoted to resolving specific problems. *Prerequisite*: ENGL 3361.

3370 Creative Writing: Poetry Techniques (3-0)

Study and practice in writing and critiquing poetry, with attention to basic elements such as imagery, the line, and use of formal techniques. *Prerequisite*: ENGL 3361.

3371 Life and Literature of the Southwest (3-0)

The social background of the Southwest and its reflection in literature.

3372 Folklore (3-0)

The types and characteristics of folk literature with particular emphasis on the folklore of the Southwest and Mexico.

3373 Life and Literature of the South (3-0)

Literature of the Old and New South, especially as it reflects the institutions and traditions of the region.

3374 Folklore of the Mexican American (3-0)

A study of folklore theory and Mexican-American folk genres, with background readings on Mexico and with a special emphasis on the folklore of the border.

3381 Nineteenth-Century Russian Literature in Translation (3-0)

Prose fiction beginning with Pushkin and extending through the Golden Age of the nineteenth century, with special emphasis on Lermontov, Gogol, Turgenyev, Dostoevsky, Tolstoy, Chekhov, Andreyev, and Gorky.

3382 Twentieth-Century Russian Literature in Translation (3-0)

Emphasis on prose fiction from the 1917 Revolution to the present day. Covers such writers as Blok, Babel, Sholokhov, Bulgakov, Pasternak, Yevtushenko, and Solzhenitsyn.

3386 Background Readings (3-0)

A course of variable content that will provide readings of foreign literature in translation as background support for significant portions of English and American literature. May be repeated once for credit when the topic varies.

3400 Senior Writing Practicum (3-0)

Advanced writing practicum aimed toward design and completion of a senior project. Students will submit a practicum proposal, and engage in all phases of a professional-level writing project, such as invention, audience analysis, revision, formatting, editing and evaluating. (Required of all Professional Writing and Rhetoric minors.)

3408 Chaucer (3-0)

A survey of the works of Geoffrey Chaucer with emphasis on *The Canterbury Tales* and on the relationship of Chaucer's poetry to the literary tradition of his time.

3409 Milton (3-0)

An introduction to the works of John Milton, with emphasis on *Paradise Lost*, *Paradise Regained*, and *Samson Agonistes*.

3414 Literary Criticism (3-0)

The theory and practice of the major critical approaches to literature.

3415 The Development of English Drama (3-0)

A study of the various dramatic forms in England from their origin in the Middle Ages through the Elizabethan and Jacobean ages into the Restoration period, including the early mystery and morality plays, and the dramas of such authors as Marlowe, Greene, Kyd, Beaumont and Fletcher, Dekker, Jonson, Webster, Dryden, Wycherley, Congreve, and Sheridan.

3416 American Poetry through the Nineteenth Century (3-0)

A study of American poetry to 1900, including Colonial and Revolutionary poets, and such others as Bryant, Emerson, Poe, Longfellow, Whittier, Holmes, Lowell, Lanier, Whitman, and Dickinson.

3417 American Fiction to 1900 (3-0)

A study of representative works of fiction in America from their beginnings through early naturalism, with emphasis on such writers as Brown, Cooper, Melville, Hawthorne, Twain, James, Howells, Wharton, and Crane.

3418 Early Twentieth-Century American Fiction (3-0)

A study of representative works of American fiction from the successors of Stephen Crane to 1945, with emphasis on such writers as Dreiser, Norris, London, Glasgow, Cather, Lewis, Anderson, Porter, Fitzgerald, Hemingway, Steinbeck, and Faulkner.

3419 American Fiction since 1945 (3-0)

A study of representative works of contemporary American writers with emphasis on such writers as Wright, Ellison, Heller, Barth, O'Connor, Bellow, Welty, and Oates.

3420 Workshop in Creative Writing (3-0)

Intensified practice in and perfection of one or more of the techniques of mature creative writing. The scope of the course will vary with the instructor. May be repeated once for credit when the topic changes. *Prerequisite:* ENGL 3367 or 3368 or 3370.

3422 American Drama (3-0)

Drama from the Colonial and Revolutionary periods to modern times, with special attention to the mature period in American drama from Eugene O'Neill to the present.

3425 British Drama since 1880 (3-0)

Historical study of dramatic theory and practice in England during the modern era, through reading of representative plays.

3440 Advanced Literary Studies (3-0)

Seminar involving intensified study of a particular author or topic, to vary with the professor in charge. May be repeated once for credit when the topic varies. *Prerequisite:* A 3.0 average in nine hours of advanced literature courses or consent of instructor. When taught as a special topic in Creative Writing, the prerequisite is ENGL 3367 or 3368 or 3370.

3447 The English Novel through the Eighteenth Century (3-0)

Prose fiction in England from the Middle Ages through the eighteenth century, with emphasis on such authors as Defoe, Richardson, Fielding, Smollett, Walpole, Burney, and Austen.

3448 The English Novel: Nineteenth Century (3-0)

A continuation of English 3447, with emphasis on such authors as Dickens, Thackeray, the Brontes, Eliot, Meredith, and Hardy.

3449 The English Novel: Twentieth Century (3-0)

The important English novelists of the twentieth century, with emphasis on such authors as Conrad, Lawrence, Joyce, Forster, Waugh, Woolf, Greene, Cary, Golding, Burgess, and Murdoch.

3450 Major Individual American Author (3-0)

Close study of the work, life, and critical reputation of a major American author chosen from such authors as Hawthorne, Melville, Whitman, Dickinson, Twain, Cather, O'Neill, Frost, Faulkner, Steinbeck, and Hemingway.

3454 Teaching Composition in the Elementary and Middle Schools (3-0)

Current theory and practice in teaching writing in the elementary and middle schools; review of applicable rhetorical and linguistic theories; evaluation and assessment of written work of young writers; relationships between reading theory and composition theory.

3455 Teaching Secondary School English: Composition (3-0)

Current theory and practice in teaching writing in secondary schools; review of applicable rhetorical theories and modes of writing; practice with the composing process; construction of writing assignments; evaluation and assessment of written work of secondary students; exercises in teaching basic skills. Field experience required. (May be counted as ENGL or as SCED 3455.)

3456 Teaching Secondary School English: Literature (3-0)

Current theory and practice in teaching literature in secondary schools; practical approaches to teaching poetry, fiction, drama; techniques for writing about literature. (May be counted as ENGL or as SCED 3456.)

3457 Special Subjects in English for Teachers (3-0)

Special subjects in teaching elementary or secondary school English language arts. Topic may vary with professor in charge. May be repeated for credit when the topic varies.

3490 Directed Study (3-0)

Individual directed study on an approved topic, to be taught with the consent of the professor and with the approval of the Department Chairperson. For English majors only.

The following Linguistics courses may be taken for English credit (see advisor for special prerequisites).

3220 Introduction to Linguistics (3-0)

Introduction to modern language studies with emphasis on contemporary as opposed to historical linguistics.

3307 The Structure of the English Language (3-0)

Investigation of Modern English, a study of modern analyses of the language. *Prerequisite:* Six hours sophomore English.

3308 Methods of Teaching English to Speakers of Other Languages (3-0)

Modern foreign-language teaching techniques with particular attention to the problems of the learner of English. Theories of language learning and testing, and the practical use of language laboratory equipment.

3471 Studies in Linguistics (3-0)

Subject is chosen by the professor in charge. May be repeated for credit when the topic varies. *Prerequisite:* Six advanced hours in English.

3472 Contrastive Linguistics: Spanish/English (3-0)

The contrastive study of the phonological, morphological and syntactical systems of Spanish and English. *Prerequisite:* SPAN 3202 or 3204. *Recommended background:* LING/ENGL/ANTH 3220, LING/ENGL 3307, and LING/SPAN 3309 or SPAN 3402.

The following courses are part of the Area Concentration in English/Spanish Translation. See the Spanish section of the Department of Languages and Linguistics for complete information.

3481 Translation Into English (3-0)

Intermediate level applied translation theory, research methods and translation techniques used in written translation of Spanish into English. Course required for eligibility to take CERTIFICATE EXAMINATIONS. *Prerequisite:* SPAN 3359 or consent of instructor. May be taken concurrently with ENGL/LING/SPAN 3482.

3482 Translation Into Spanish (3-0)

Intermediate level applied translation theory, research methods and translation techniques used in written translation of English into Spanish. Course required for eligibility to take CERTIFICATE EXAMINATIONS. *Prerequisite:* SPAN 3359 or consent of instructor. May be taken concurrently with ENGL/LING/SPAN 3481.

3492 Professional Translation (3-0)

Advanced translation practicum course with emphasis placed on speed and accuracy of rendition. Translation of technical, legal, business, and journalistic texts in Spanish and English. Course required for eligibility to take CERTIFICATE EXAMINATIONS. *Prerequisite:* ENGL/LING/SPAN 3481 and 3482 or consent of instructor. May be taken concurrently with ENGL/LING/SPAN 3491. Course may be repeated for credit.

See the *Graduate Studies Catalog* for graduate programs and courses.

History

334 Liberal Arts
(915) 747-5506

CHAIRMAN: Ellery S. Schalk

PROFESSORS EMERITI: Wayne E. Fuller, John H. McNeely, Wilbert Helde Timmons

PROFESSORS: Bailey, Clymer, Jackson, Kawashima, Schalk, Shover
ASSOCIATE PROFESSORS: Martin, McGee Deutsch, Righter
ASSISTANT PROFESSORS: Ambler, Broaddus, Hackett, Hutton, Smith

B.A. Degree with Major in History — Specific course requirements for History majors are: HIST 3201-3202 and twenty-four advanced (3300-3400 level) hours of history courses, which must include courses from at least three of four fields; no more than 12 hours may be taken in any one field of history.

B.A. Degree with Departmental Honors in History — A candidate for departmental honors in History must have demonstrated ability in history, must normally have a grade point average of 3.5 in history and 3.0 overall by the end of the junior year, and must maintain these averages until graduation. To graduate with Departmental Honors, a student must satisfactorily complete an honors thesis, which will be judged by a thesis committee. A candidate for Departmental Honors must request approval of candidacy during the second semester of the junior year. The Department reserves the right to accept or reject any student, taking into consideration the number of applicants, availability of faculty, and competence of individual students. Once accepted, the honors candidate will enroll in HIST 3490 during both semesters of the senior year, accumulating a total of 6 hours of 3490 credit on completion of the honors program. Contact the chairperson or the undergraduate advisor for further information.

B.A. Degree with Minor in History — Students wishing to minor in History are required to complete HIST 3201 and 3202, plus 12 hours of advanced (3300-3400 level) courses in History. The 12 hours of advanced courses must include courses from at least two of the history fields.

Soviet and East European Specialization — History students wishing a Soviet and East European specialization must meet all of the basic requirements for History majors listed above, including 3201-02 and 24 advanced hours in history selected from at least three fields of history. The advanced hours in history must include HIST 3332 and 3333, and 12 hours from among the following: 3312, 3330, 3340, 3367, 3368, 3369, 3374, 3379, and 3390 (when the topic is appropriate). In addition, the student must satisfy the language requirement with Russian 3201-02 and must complete a minor in Soviet and East European Studies as described elsewhere in this catalog. Courses taken for the major may not also be used for the minor.

History (HIST)

LOWER-DIVISION COURSES

3101 History of the United States, to 1865 (3-0)

Survey of American history through the Civil War, emphasizing the European background, the colonial contribution, the American Revolution, the republican government, growth of democracy, the background and course of the Civil War. With 3102, fulfills the statutory requirement for American History.

3102 History of the United States, since 1865 (3-0)

Reconstruction, rise of big business, clash of economic interests, struggle for reform, imperialism and world power status. Progressivism, World War I, the Twenties, the New Deal, World War II, post-war America. With 3101, fulfills the statutory requirement for American History.

3103 America and Its European Heritage from 1500 to 1815 (3-0)

The United States and Europe examined comparatively, including a basic survey of colonial and revolutionary America to the end of the War of 1812 and an emphasis upon those factors of European history from the Renaissance to the Congress of Vienna which directly or indirectly affected developments in America. With 3104, fulfills the statutory requirement for American History.

3104 America and Its European Heritage from 1815 to the Present (3-0)

The United States and Europe examined comparatively, including a basic survey of America from the end of the War of 1812 to the present, and an emphasis upon those factors of European history which help one to understand developments in America. With 3103, fulfills the statutory requirement for American History.

3201 Western Civilization to 1648 (3-0)

An analysis of "Western" men and women from the pre-Greek Near East to the seventeenth century and the emergence of revolutionary new ideas on humanity and the universe. (Readings will vary among sections but will be similar in quantity.) *Prerequisite:* Sophomore standing recommended.

3202 Western Civilization since 1648 (3-0)

An analysis of the "West" from the scientific revolution of the seventeenth century to present world-wide social, political and revolutionary conflict, concentrating especially on the origins and nature of the problems plaguing mankind. (Readings will vary among sections but will be similar in quantity.) *Prerequisite:* Sophomore standing recommended.

UPPER-DIVISION COURSES

General Prerequisites: Appropriate class standing.

FIELD I: THE UNITED STATES

3301 Colonial America to 1763 (3-0)

Background of European exploration and colonization, settlement and development of the English colonies, British imperial policy, and the Anglo-French conflict in North America.

3302 The American Revolution and the New Nation, 1763-1815 (3-0)

The breakdown of the Anglo-American political system, the development of American political principles, the War for Independence and social readjustment, the creation of new governments, the rise of political parties, the Federalist and Jeffersonian administrations, the War of 1812 and the emergence of national character.

3304 The Age of Jackson, Clay, and Webster, 1815-1860 (3-0)

Political, economic, social, and sectional aspects of the Jacksonian era. The Old South and slavery, the North and reform, Manifest Destiny, nativism, and the disruption of the political party system.

3305 The Civil War and Reconstruction Era, 1860-1877 (3-0)

The Civil War and Reconstruction: Election of Lincoln, outbreak of war, Union and Confederacy, military problems, nations at war, Reconstruction conflicts, triumph of Radicalism, Compromise of 1876.

3306 The Rise of Modern America, 1876-1900 (3-0)

The legacy of Reconstruction, growth of industry, organized labor, the rise of the city, passing of the frontier, the eclipse of agrarianism, protest and reform, the acquisition of a colonial empire.

3307 The Twentieth Century: From Roosevelt to Roosevelt (3-0)

The United States as world power, foreign policies, domestic problems, the Progressive Era, World War I, the Twenties, the Great Depression.

3308 United States since 1933 (3-0)

The domestic history of the United States since 1933: the New Deal and its lasting impact, the rise of organized labor, the home front during World War II, McCarthyism, the civil rights revolution, Watergate and the nation in the post-Vietnam years.

3309 Mexican American History (3-0)

A survey of Mexican-Americans in the southwestern U.S. since the Treaty of Guadalupe Hidalgo, with emphasis on interactions between Mexican and Anglo-American cultures.

3310 American Legal History (3-0)

Study of the growth of American law from colonial times to the present. Particular emphasis on the operation of the law in a broad social context. Strongly recommended for pre-law students.

3311 History of American Foreign Relations to 1914 (3-0)

Analysis of the diplomacy of the American Revolution and of the new nation; diplomatic aspects of the War with Mexico and continental expansion, and the rise of the United States to world power in the late nineteenth and early twentieth centuries, with emphasis on imperial expansion overseas.

3312 History of American Foreign Relations since 1914 (3-0)

Analysis of 20th century American diplomacy, including the diplomatic aspects of the two world wars, the origins and development of the Cold War with the Soviet Union, and the American response to Third World nationalism including the war in Vietnam.

3313 American Military History (3-0)

A study of American military history from colonial times to the present. The course begins with a consideration of the origins of the American military system in seventeenth-century England and concludes with a discussion of issues of contemporary military affairs. Both the problems faced by the American military and the relationships of the military to the rest of American society are examined.

3314 American Intellectual Movements and Thinkers to 1900 (3-0)

Analysis of the beliefs and impact of Puritans, Enlightenment rationalists, Transcendentalists, and Darwinists upon American thought. Includes treatment of such key figures as Jonathan Edwards, Benjamin Franklin, Thomas Jefferson, Ralph Waldo Emerson, and John Dewey.

3315 American Intellectual Movements and Thinkers Since 1900 (3-0)

Analysis of the beliefs and impact of Progressive reformers, Lost Generation writers, 1930s radicals, and post-World War II bohemians upon American thought. Includes treatment of such key figures as Henry Adams, Thorstein Veblen, Frederick Jackson Turner, John Reed, and Allen Ginsberg.

3316 Southwest Frontier (3-0)

A study of the nineteenth-century American Southwest, the arid frontier, and the area of the international boundary. Note: History majors may count this course in either Field I or Field III.

3317 History of Texas since 1821 (3-0)

Spanish and Mexican Texas, Anglo-American colonization, the Texas Revolution, the Republic, statehood, Civil War and Reconstruction, railroad and industrial growth, political, social, and economic trends in the twentieth century. Note: History majors may count this course in either Field I or Field III.

3319 The Old South (3-0)

A history of the economic, social, and cultural development of the South to the Civil War.

3320 The New South (3-0)

A history of the American South since 1876, emphasizing the social, economic, and political adjustments in the late 19th century, and the vast changes in Southern society since World War I.

3321 19th Century American West (3-0)

Focuses on the frontier and the American character, the westward movement to the Pacific Slope, conflict with the American Indian and other ethnic and minority groups, women and the West, and exploitation of the natural resources. The course will center on the Trans-Mississippi frontier with emphasis on the arid West.

3322 20th Century American West (3-0)

Examines the new West in terms of conservation policies, natural resource issues, urbanization, tourism, economic development, immigration, and cultural conflict. Regions covered include the Great Plains, the Rocky Mountain states, the arid West, and the Pacific Slope.

3323 American Indian History (3-0)

A survey of the history of North American Indians from the pre-Columbian period to the present. Examines inter-tribal relations as well as Indian-European and Indian-Anglo American interactions. Emphasis on trans-Mississippi West tribes and events.

3324 The United States in Southeast Asia (3-0)

American relations with Southeast Asia in the twentieth century, focusing on the American acquisition and governance of the Philippines, the American response to Asian nationalism during and after World War II, and the war in Vietnam.

3327 Attitudes Toward Minorities in the United States (3-0)

An historical and comparative study of popular attitudes, stereotypes, and racial theories focused upon Indian, Black, Mexican American, Jew, and Oriental. The impact of ideas of race and racism will be particularly emphasized. Lectures plus discussions

3328 History of Hispanic Peoples in the United States (3-0)

Traces the historical experiences of the Mexican, Puerto Rican, Cuban, and other Hispanic migrants to the United States; investigates the causes of their migrations, the communities they formed in the United States, their problems of adjustment, the cultural changes they have undergone, and the similarities and differences among their cultures.

FIELD II: AFRICA, ASIA, AND RUSSIA**3330 History of the Far East (3-0)**

A brief survey of traditional China, Korea, and Japan, westernization and modernization, and the Far East in the twentieth century. Special emphasis on the uniqueness of East Asian societies.

3331 The History of Religion in the East (3-0)

The history of the Hindu, Buddhist, Confucian, and Taoist communities from their beginnings to the modern era, with emphasis on the development of their ideas, the interaction between communities, and parallels in movements and teachings. The historical development of each religion is stressed.

3332 Russia (3-0)

A history of Russia from its medieval origins in the ninth century to the rise of the Russian empire in the eighteenth and nineteenth centuries emphasizing the development of the Russian political condition, culture and society.

3333 The Soviet Union (3-0)

A history of the USSR: the background to the Russian Revolution, the first decade of revolutionary experimentation in the 1920s, the age of Stalin, and an overview of Soviet life today.

3336 Pre-Modern Africa (3-0)

The history of Africa from the emergence of the kingdom of Ghana in the eighth century to the advent of colonialism in the nineteenth. Emphasis on the spread of Islam, the growth and impact of the slave trade, the political and economic crisis of the 1800s and the rise of European imperialism. Primary focus is on Africa south of the Sahara.

3337 Modern Africa (3-0)

Examination of Africa from the imperial conquest of the late nineteenth century to the present day. Emphasis on the social, economic and cultural impact of colonialism, religious change, African nationalism, decolonization and independence, the struggle for development, and racial conflict in South Africa. Primary focus is on Africa south of the Sahara.

3339 Pyramids and Prophets: Ancient Egypt, Mesopotamia and Palestine (3-0)

Examines the distinct series of circumstances which led to the development of civilization in the Ancient Near East. Emphasis is upon the government, society, religion, art and manners that evolved through the eras of Stone Age nomads, Bronze Age temple-states and Iron Age kingdoms.

3340 The Middle East and Islam (3-0)

The rise and expansion of Islam, the golden age of Arab culture, the Ottoman Empire, the impact of European imperialism, the economics of oil, the Arab-Israeli conflict and present-day Muslim revitalization.

FIELD III: LATIN AMERICA**3342 The Spanish Borderlands (3-0)**

A study of the Spanish northern frontier in North America from California to Florida with particular emphasis on the Spanish impact on the American Southwest from the sixteenth-century explorations to 1821. Note: History majors may count this course in either Field I or Field III.

3343 The U.S.-Mexican Border (3-0)

History of the border region, with an emphasis on the twentieth century. Themes include the delimitation and maintenance of the boundary, international relations, ethnic relations, the Mexican Revolution, economic development, migration, and culture.

3344 Latin America: The Colonial Period (3-0)

Pre-Columbian history of the Americas south of the United States; European background, period of conquest, and colonial development to the wars of independence.

3346 Central America and the Caribbean (3-0)

Social, economic and political patterns in Central America and in the Spanish-, English-, French-, Dutch-, and Creole-speaking Caribbean, emphasizing the twentieth century. Topics include race relations, ideological struggle, nationalism, popular culture, and U.S. involvement.

3347 South America since 1810 (3-0)

The politics, economy, culture, and international relations of the AB powers, with emphasis on the twentieth century.

3349 History of Mexico to 1900 (3-0)

The Pre-Columbian civilizations, the conquest, Spanish institutions and culture, the Mexican movement for independence, the era of Santa Ana, Juarez and the Reform, the Diaz regime.

3350 The Mexican Revolution (3-0)

The background of the Revolution, political, social, economic, military developments of the Mexican Revolution. Mexico since the Revolution.

FIELD IV: EUROPE, EXCEPT RUSSIA**3351 Tudor England (3-0)**

A study of England in transition from the late middle ages to the early modern age with emphasis on the Tudors.

3354 England to 1547 (3-0)

Major developments in England from its prehistory through the reign of Henry VIII.

3355 England since 1547 (3-0)

A continuation of History 3354 to the present.

3359 The History of Religion in the West (3-0)

The history of the Jewish, Christian, and Islamic communities from their beginnings to the modern era, with emphasis on the development of their ideas, the interaction between communities, and parallels in movements and teachings. The historical development of each religion is stressed.

3360 The Greek World (3-0)

Surveys the development of Greek society and government from the Bronze Age palace cultures of Crete to the conquests of Alexander the Great. Special emphasis on Greek literature and the exercise of democracy.

3361 The Roman World (3-0)

A study of the development of Europe's first state system. It covers Rome from its beginnings as a small city-state of Italy to its development as the capital of Constantine's European empire. Emphasized are Roman contributions in government, law and religion.

3362 The Medieval World (3-0)

A survey of the period in Western Europe from about 500 to about 1300, focusing especially on the nature and accomplishments of the revolutionary new society which emerged in the three centuries following the invasions of the ninth and tenth centuries.

3364 The Age of Renaissance (3-0)

A survey of Western Europe in the fourteenth, fifteenth, and early sixteenth centuries, focusing especially on the great age of the Renaissance in Italy and including an analysis of some of the most famous art and artists of the period seen in their historical context.

3365 The Age of the Reformation (3-0)

A survey of Western Europe in the sixteenth and first half of the seventeenth centuries, focusing on the Reformation and its consequences and including an analysis of the social, economic, political, and intellectual changes that accompanied that split and that ushered in the modern world.

3367 The French Revolution and Napoleonic Eras (3-0)

An analysis of the background, events, and significance of the Revolutionary and Napoleonic era from the late eighteenth century to the Congress of Vienna.

3368 Nineteenth Century Europe, 1815-1900 (3-0)

A study of Europe in a process of fundamental economic, political, and social change, with emphasis on the revolutionary movements of the 1820s, 1830 and 1848, the unification of Italy and Germany, the emergence of parliamentary democracies in France and England, and the development of nationalism, conservatism, liberalism, and socialism.

3369 Twentieth Century Europe, 1900 to the Present (3-0)

The collapse of the European dynastic monarchies, World War I, the Versailles Treaty, totalitarian dictatorships in Italy, Germany, and Russia, World War II, the Cold War and the Common Market era.

3374 Modern Germany since 1866 (3-0)

The emergence of a unified German National State, relations with neighboring powers, World War I, the revolution of 1918, the Weimar Republic, rise and fall of the Third Reich, divided Germany.

3379 European Intellectual History since the French Revolution (3-0)

Thoughts of individuals and currents of thought from Burke to the present, seen in relationship to the social and political reality out of which they sprang.

3381 The History of Spain and Portugal (3-0)

A survey of the Iberian Peninsula from the earliest times to the regimes of Franco and Salazar, with particular emphasis on the rise, development, and decline of the Spanish and Portuguese empires. Note: History majors may count this course in either Field III or Field IV.

Other Courses**3390 History, Special Topics (3-0)**

An examination of a currently relevant subject from an historical perspective. Topics will vary and will be drawn from such fields as minority groups, women's history, local history, ecology, historical methodology and the relationship of history to other social sciences. History majors and minors should count the course in the appropriate field.

3391 History of Women (3-0)

An examination of the values, roles, and contributions of women in various historical contexts. May be repeated once for credit when topic changes. History majors and minors should count the course in the appropriate field.

3399 History and Historians (3-0)

A survey of major stages in the evolution of the Western historical tradition, with focus on such key figures as Herodotus, St. Augustine, Machiavelli, Marx, and Freud. Lectures plus discussions. Note: History majors and minors may count this course in any of the four fields.

3410 Historical Research and Writing for Undergraduates (3-0)

Practice in writing historical narratives, including the use of primary and secondary sources, research techniques, and bibliography. Skills taught will include the use of government documents as research tools and the writing of legal briefs. History majors and minors may count this course in any of the four fields.

3490 Directed Study (3-0)

Individual directed study on approved topic; to be taught at the consent of the professor and with the approval of the department chairman. History majors and minors should count the course in the appropriate field.

See the *Graduate Studies Catalog* for graduate programs and courses.

Languages and Linguistics

136 Liberal Arts
(915) 747-5767, 5801

CHAIRMAN: Jon Amastae

PROFESSORS EMERITI: Lurline H. Coltharp, Jacob L. Ornstein-Galicia, Ray Past, Edgar T. Ruff, John McCarty Sharp, Joseph R. Smiley

PROFESSORS: Blansitt, Natalicio, Teschner

ASSOCIATE PROFESSORS: Aguilar, Amastae, Armengol, Bagby, Cotton, Elerick, Ewton, Garcia, Manley, Perez

ASSISTANT PROFESSORS: Bailey, Beyer, Ford, Goodall, Irwin, Kluck, Mellen-Webking, Phinney-Liapis, Rodriguez

Information for New Students

Examinations for Placement

SPANISH: A placement exam or a waiver is required of all students who have never taken Spanish at the college level before. To learn when and where to take the exam or get the waiver, see the "Spanish" section of the LANGUAGES AND LINGUISTICS listing in each semester's Schedule of Classes. Advanced placement and (upon passing the course placed into) an appropriate number of credit hours will be awarded in recognition of superior performance on the Spanish Placement Exam or that exam plus either the CLEP test or the AP Exam administered by ETS. Students who have acquired a significant knowledge of Spanish through high school study (usually two years or more) are strongly urged to take the Spanish Placement Exam. Native speakers of Spanish are also strongly urged to take the exam, and, if literate in Spanish, are required to do so. Students with no or inadequate background in Spanish should sign a waiver to that effect. The waiver allows them to skip the exam and start with either Spanish One for Native Speakers (4103) or Spanish One for Non-Natives (4101). The native-speaker sequence is 4103, 4104, 3203 and 3204; the non-native speaker sequence is 4101, 4102, 3201 and 3202.

FRENCH: Students who have acquired a significant knowledge of French through high school study (usually two years or more) or by some other means are urged to take the departmental French Placement Exam before enrolling in French for the first time at the college level. To learn when and where to take the exam, see the "French" section of the LANGUAGES AND LINGUISTICS listing in each semester's Schedule of Classes. Advanced placement and (upon passing the course placed into) an appropriate number of credit hours will be awarded in recognition of superior performance on the French Placement Exam or the CLEP test or the AP exam administered by ETS. Students with no or inadequate knowledge of French should enroll in French 4101.

GERMAN: Students who have acquired a significant knowledge of German through high school study (usually two years or more) or by some other means are urged to take the departmental German Placement Exam before enrolling in German for the first time at the college level. To learn when and where to take the exam, see the "German" section of the LANGUAGES AND LINGUISTICS listing in each semester's Schedule of Classes. (Note: Abitur students do not take this exam; instead, they must see the Abitur advisor before enrolling in any German course.) Advanced placement and (upon passing the course placed into) an appropriate number of credit hours will be awarded in recognition of superior performance on the German Placement Exam or the CLEP test or the AP exam administered by ETS. Students with no or inadequate knowledge of German should enroll in German 4101.

Latin, Portuguese, Russian: Students who have acquired a significant knowledge of any of these languages through high school study (usually two years or more) or by some other means are urged to consult an instructor of the language in question for advising. Students with no or inadequate knowledge of any of these languages should enroll in the first-semester course.

ESOL: A placement exam is required of all students whose post-elementary education has not been in English. Information about time and place of the exam is given in each semester's LANGUAGES AND LINGUISTICS listing in the UTEP Schedule of Classes.

Major in Languages

B.A. Degree

27 semester hours, at least 18 of which must be advanced. For Spanish majors only, SPAN 3355 (SPAN 3356 for native Spanish speakers) and 3357 must be included. Also for Spanish majors only, at least 9 of the advanced hours must be 3400-level, and PORT 3321 may count as 3 of the required hours. For all language majors, courses 3201-02 or 3203-04 must be completed in a language other than the major.

Minor in Languages

The basic requirement is 18 hours in a language, at least 9 of which must be advanced (3300-3400) level. For Spanish, 3355 (SPAN 3356 for native speakers) and 3357 are required; 3320 is strongly recommended.

Major in Linguistics

B.A. Degree

Linguistics 3220, plus 24 semester hours in Linguistics courses at the 3300-3400 level. All College requirements for the B.A. Degree.

Minor in Linguistics — Linguistics 3220 plus 15 semester hours in Linguistics courses, nine hours of which must be at the 3300-3400 level.

Teacher Certification programs which combine the B.A. degree with Elementary or Secondary certification are available in French, German and Spanish. In addition, certification in an ESL/English composite program is available. Several Linguistics/Spanish courses are required for certification in Bilingual Education. Interested students must consult the departmental undergraduate advisor. Certification for secondary teaching in the following three areas includes the following courses.

FRENCH: 27 semester hours, at least 18 of which must be advanced (3300-3400) courses in French, including FREN 3302, 3303, 3357, 3401; 3305 and 3355 are recommended for students who are not native French speakers. Courses 3201-02 or 3203-04 must be completed in a language other than the major.

GERMAN: 27 semester hours, at least 18 of which must be advanced (3300-3400) courses in German, including GERM 3301, 3303, 3357, 3401. Courses 3201-02 or 3203-04 must be completed in a language other than the major.

SPANISH: 27 semester hours, at least 18 of which must be advanced (3300-3400) level, including SPAN 3301 or 3303, 3302 or 3304, 3309, 3320, 3357, 3401, 3472; 3355 recommended for students who are not native Spanish speakers. Courses 3309, 3315, 3401, 3472, and 3473 may be taken for credit as either Spanish or Linguistics. Courses 3201-02 must be completed in a language other than the major.

Programmatic changes are planned for those students who will graduate Fall 1991 or after, and requirements may differ from those outlined above. Students should consult with the College of Education, with the Department of Languages and Linguistics, or with the Academic Advising Center

DESCRIPTION OF COURSES

English for Speakers of Other Languages (ESOL)

For Undergraduates

8110 Intermediate English for Speakers of Other Languages (8-0)

Practice with the basic structures of English, including their expansion into more complex structures. Practice with the conversational structures of modern English. By departmental placement.

5110 Intermediate English for Speakers of Other Languages (5-0)

Practice with the basic structures of English, including their expansion into more complex structures. Practice with the conversational structures of modern English. *Prerequisite:* ESOL 8110 or permission of department.

3111 Expository English Composition for Speakers of ESL (3-0)

Practice in composition with emphasis on rhetorical and writing principles for the different expository modes; emphasis on style and variety in sentences, paragraphs, and essays; stress on reading comprehension and outlining. *Prerequisites:* ESOL 3160 and 3104, or permission of department. Must be taken concurrently with ESOL 2111.

2111 Laboratory (0-4)

Listening comprehension, note-taking, vocabulary, dictionary skills, and oral language development for speakers of ESL. Must be taken concurrently with ESOL 3111. Laboratory Fee: \$2.

3112 Research and Critical Writing for Speakers of ESL (3-0)

Study and practice in the use of library facilities and research and documentation techniques; emphasis on research papers and on critical essays. *Prerequisites:* ESOL 3111, 2111. Must be taken concurrently with ESOL 2112.

2112 Laboratory (0-4)

Advanced listening comprehension, reading analysis, and oral language use for speakers of ESL. *Prerequisites:* ESOL 2111, 3111. Must be taken concurrently with ESOL 3112. Laboratory Fee: \$2.

3104 Speech for Non-native Speakers of English (3-0)

The major emphasis will be on public speaking with special attention to language skills, pronunciation, and vocabulary building.

3160 Basic English Sentence Structure (3-0)

A systematic presentation of English grammar and sentence structure for speakers of English as a foreign language. *Prerequisite:* ESOL 5110 or permission of department. *Corequisite:* ESOL 3104.

2113 English for Science and Technology (3-0)

This course is designed to provide additional practice for non-native speakers of English in the specialized discourse patterns of scientific and technological disciplines. It will emphasize reading and interpretation of technical/scientific articles, reports, and books, and the writing of technical articles and reports. *Prerequisite:* ESOL 3112 or permission of the department chairman. Required of all majors in the Colleges of Science and Engineering who present ESOL 3112 in lieu of ENGL 3112.

3202 English for Business, Finance and Economics (3-0)

This course is designed to provide additional practice for non-native speakers of English in the specialized discourse patterns of business, finance, and economics. It will emphasize reading and interpretation of technical books, articles, and reports in these fields as well as the writing of articles and reports. *Prerequisite:* ESOL 3112 or permission of department chairman. Elective credit only.

3203 English for Humanities and Social Sciences (3-0)

This course is designed to provide additional practice for non-native speakers of English in the specialized discourse patterns of the humanities and social sciences. It will emphasize reading and interpretation of books and articles in the humanities and social sciences as well as the writing of them. *Prerequisite:* ESOL 3112 or permission of department chairman. Required of all majors in the College of Liberal Arts who present ESOL 3112 in lieu of ENGL 3112.

French (FREN)

For Undergraduates

4101 French One (3-2)

An introductory course with emphasis on pronunciation and the basic elements of grammar; practice in understanding, speaking, reading and writing. (No prerequisite.) Laboratory Fee: \$2.

4102 French Two (3-2)

A continuation of French 4101, with the introduction of more complex elements of grammar; additional practice in the four basic skills. *Prerequisite:* FREN 4101 or the departmental placement test. Laboratory Fee: \$2.

3201 French Three (3-0)

Oral and written work in French; grammar review; reading from modern French authors. *Prerequisite:* FREN 4102 or the departmental placement test.

3202 French Four (3-0)

Grammar review; reading from modern French authors. *Prerequisite:* FREN 3201 or the departmental placement test.

3301 French Literature (3-0)

Introduction to French literature through the seventeenth century. *Prerequisite:* FREN 3202.

3303 French Literature (3-0)

Introduction to French literature from 1715 to the present. Main literary trends and principal writers from the Romantic Period to the present. *Prerequisite:* FREN 3202.

3305 French Phonology and Phonetics (3-0)

Analysis of the sound structure of French, as well as corrective phonetics directed toward individual students in the class. The course is intended to improve the student's pronunciation as well as to give a theoretical basis for teaching the sounds of French. *Prerequisite:* FREN 3202 or concurrently.

3320 French Civilization (3-0)

A survey of the political, social, intellectual and artistic history of France. *Prerequisite:* FREN 3202.

3350 French Literature in Translation (3-0)

Readings in English translation from periods and genres of French literature. Taught in English. *Prerequisite:* 6 hours of sophomore literature.

3355 Advanced Conversation (3-0)

Practice in pronunciation, comprehension, and oral expression. Selected readings and written exercises designed to promote development of oral skills. Recommended for non-native speakers before progressing to other advanced courses. *Prerequisite:* FREN 3202.

3357 Advanced Composition (3-0)

Review of aspects of grammar essential to effective writing, introduction to elements of style and rhetoric, vocabulary building, intensive practice with written assignments and graded compositions. *Prerequisite:* FREN 3202.

For Undergraduates and Graduates

3401 Methods of Foreign Language Instruction (3-0)

Practical application of linguistic principles to the teaching of modern foreign languages. Classroom techniques, development and evaluation of teaching and testing materials appropriate to the written and spoken language. May not be counted for credit in addition to GERM 3401, SPAN 3401, or LING 3401.

3487 Poetry (3-0)

May be repeated once for credit when the topic varies. *Prerequisite:* 6 hours of advanced French courses.

3488 Prose (3-0)

May be repeated once for credit when the topic varies. *Prerequisite:* 6 hours of advanced French courses.

3489 Theater (3-0)

May be repeated once for credit when the topic varies. *Prerequisite:* 6 hours of advanced French courses.

3490 Topics in French (3-0)

Prerequisites: 6 hours of advanced French and consent of instructor. May be repeated for credit when topics vary.

See the *Graduate Studies Catalog* for graduate courses.

German (GERM)

For Undergraduates

4101 German One (3-2)

An introductory course with emphasis on pronunciation and the basic elements of grammar; practice in understanding, speaking, reading and writing. (No prerequisite.) Laboratory Fee: \$2.

4102 German Two (3-2)

A continuation of German 4101, with the introduction of more complex elements of grammar; additional practice in the four basic skills. *Prerequisite:* GERM 4101 or the departmental placement test. Laboratory Fee: \$2.

3201 German Three (3-0)

Oral and written work in German, with some more advanced grammar and an introduction to the writing of compositions. Reading from contemporary authors. *Prerequisite:* GERM 4102 or the departmental placement test.

3202 German Four (3-0)

Grammar review, compositions, reading from contemporary authors. *Prerequisite:* GERM 3201.

3301 German Literature before 1750 (3-0)

Main literary trends and principal writers from the beginnings through the Enlightenment. *Prerequisite:* GERM 3202.

3303 German Literature since 1750 (3-0)

Main literary trends and principal writers from the birth of Goethe to the present. *Prerequisite:* GERM 3202.

3320 German Civilization (3-0)

A survey of the political, social, intellectual and artistic history of Germany. *Prerequisite:* GERM 3202.

3357 Advanced Composition (3-0)

Review of aspects of grammar essential to effective writing, introduction to elements of style and rhetoric, vocabulary building, intensive practice with written assignments and graded compositions. *Prerequisite:* GERM 3202.

For Undergraduates and Graduates

3401 Methods of Foreign Language Instruction (3-0)

Practical application of linguistic principles to the teaching of modern foreign languages. Classroom techniques, development and evaluation of teaching and testing materials appropriate to the written and spoken languages. May not be counted for credit in addition to FREN 3401, SPAN 3401, or LING 3401.

3487 Poetry (3-0)

May be repeated once for credit when the topic varies. *Prerequisite:* 6 hours of advanced German.

3488 Prose (3-0)

May be repeated once for credit when the topic varies. *Prerequisite:* 6 hours of advanced German.

3489 Theater (3-0)

May be repeated once for credit when the topic varies. *Prerequisite:* 6 hours of advanced German.

3490 Topics in German (3-0)

May be repeated once for credit when the topic varies. *Prerequisites:* 6 hours of advanced German and consent of instructor.

See the *Graduate Studies Catalog* for graduate courses.

Greek (GREK)

4105 Koine Greek (4-0)

The study of the essential aspects, lexicon, morphology, and syntax of Koine Greek.

4106 Koine Greek (4-0)

A continuation of 4105.

Italian (ITAL)

3201 Accelerated Italian One (3-0)

An introductory accelerated course in pronunciation and grammar of Italian; practice in speaking, understanding, reading and writing. *Prerequisite:* One year in or working knowledge of another romance language.

3202 Accelerated Italian Two (3-0)

A continuation of ITAL 3201 with the introduction of more complex elements of grammar and additional practice in the four basic skills. Reading from modern Italian writers. *Prerequisite:* ITAL 3201.

Latin (LATN)

4101 Latin One (3-2)

Fundamentals of Latin grammar. Declension of nouns and adjectives and indicative verbal inflection. Vocabulary study. (No prerequisite.) Laboratory Fee: \$2.

4102 Latin Two (3-2)

More complex aspects of Latin grammar including forms and uses of subjunctive. Vocabulary study. Reading of simple texts. *Prerequisite:* LATN 4101. Laboratory Fee: \$2.

3201 Latin Three (3-0)

Continuing study of Latin grammar and vocabulary. Reading of significant prose texts. *Prerequisite:* LATN 4102.

3202 Latin Four (3-0)

Readings from the works of Catullus, Ovid, Horace, and Virgil. *Prerequisite:* LATN 3201.

3301 Advanced Latin (3-0)

Readings in Latin prose and poetry with alternate emphasis on fluency and close attention to text. May be repeated for credit when materials vary. *Prerequisite:* LATN 3202.

Linguistics (LING)

For Undergraduates

4103-4104 Intensive Language Study (3-2)

Presentation and analysis of the fundamentals of a language that is structurally distinct from Modern English and other modern European languages. Reading of elementary texts. Laboratory exercises. May be repeated for credit as language varies. Laboratory Fee: \$2.

3220 An Introduction to Linguistics (3-0)

Introduction to basic concepts and techniques of modern linguistics. (May be taken as ENGL 3220 or ANTH 3220.)

3222 The Latin and Greek Elements in English (3-0)

The systematic study of the Latin and Greek elements in the English vocabulary with a view to increasing the student's language facility. No prior knowledge of Greek or Latin is required. Elective credit only; may not be presented to fulfill language requirement for Liberal Arts majors.

3307 The Structure of English (3-0)

Investigation of Modern English, a study of modern analyses of the language. *Recommended background:* LING 3220. (May be taken as ENGL 3307.)

1308 Practicum in Teaching English to Speakers of Other Languages (3-0)

Practical experience in all aspects of language teaching. Includes experience in using the language laboratory as a teaching device, making and administering tests, making, evaluating and using language teaching materials, conducting language teaching drills and exercises. Should be taken concurrently with LING 3308 or 3401 or 3508.

3308 Methods of Teaching English to Speakers of Other Languages (3-0)

Modern foreign language teaching techniques with particular attention to the problems of the learner of English. Theories of language learning and testing, and the practical use of audio-visual equipment. *Recommended background:* LING 3220 or 3307. (May be taken as ENGL 3308.)

3309 The Structure of Spanish for Teachers (3-0)

Linguistic analysis of Spanish orthography, sound system, morphology, and syntax. Course oriented toward needs of teachers of Spanish at all levels. Same as SPAN 3309. *Prerequisite:* SPAN 3202 or 3204 or equivalent.

3313 English Historical Linguistics (3-0)

The development of English from its beginnings to Modern English. A study of the changes in the phonological, morphological and syntactical systems. *Prerequisite:* Six hours of sophomore ENGL or LING 3220.

3315 History of the Spanish Language (3-0)

A survey of the development of the Spanish language from Vulgar Latin to modern Spanish. *Prerequisite:* SPAN 3202 or 3204 or equivalent. (May be taken as SPAN 3315.)

3344 Making and Using Language Tests (3-0)

The study of how language tests of various kinds are produced, used and evaluated, with special attention given to tests in English for speakers of other languages.

3357 Sociolinguistics (3-0)

Language variables and sociological correlates, a review of current research, theories and applications. *Recommended background:* LING 3220. (May be taken as SOCI 3357.)

For Undergraduates and Graduates

3401 Methods of Foreign Language Instruction (3-0)

Practical application of linguistic principles to the teaching of foreign languages. Classroom techniques, development and evaluation of teaching and testing materials appropriate to the written and spoken languages. (Same as SPAN 3401.) *Prerequisite:* Completion of course 3202 or the equivalent in a foreign language.

3448 Analyses of Second Language Acquisition (3-0)

A theoretical and practical examination of various (though complementary) theories of second language learning, with their implications for the second language classroom.

3471 Studies in Linguistics (3-0)

Topics to be discussed will be selected. May be repeated for credit when topic varies. *Prerequisite:* Six hours of 3300-3400 linguistics or permission of the department chairman.

3472 Contrastive Linguistics: Spanish/English (3-0)

The contrastive study of the phonological, morphological and syntactical systems of Spanish and English. *Prerequisite:* SPAN 3202 or 3204. *Recommended background:* LING/ENGL/ANTH 3220, LING/ENGL 3307, and LING/SPAN 3309 or SPAN 3402.

3473 The Spanish Language in the Americas (3-0)

The historical development of American Spanish, including contemporary dialects of Latin America and the United States. *Prerequisite:* Six hours of advanced SPAN or LING courses conducted in Spanish. Same as SPAN 3473.

3490 Studies in the Spanish Language (3-0)

Topic to be discussed will be selected. May be repeated for credit when topic varies. Conducted in Spanish. *Prerequisite:* Six hours

advanced Spanish or six hours Spanish-oriented linguistics courses, or permission of department chairman.

See the *Graduate Studies Catalog* for graduate programs and courses.

Portuguese (PORT)

For Undergraduates

3201 Accelerated Portuguese One (3-0)

An introductory accelerated course in pronunciation and grammar of Brazilian Portuguese; practice in speaking, understanding, reading and writing. *Prerequisite:* One year in or working knowledge of another romance language.

3202 Accelerated Portuguese Two (3-0)

A continuation of Portuguese 3201 with the introduction of more complex elements of grammar and additional practice in the four basic skills. Reading from modern Brazilian and Portuguese writers. *Prerequisite:* PORT 3201.

3321 Introduction to Brazilian Literature (3-0)

An introductory survey of Brazilian literature. Selected readings from major authors including Jorge Amado, Machado de Assis, Erico Verissimo, Casimiro de Abreu and Castro Alves. This course may be counted toward the Spanish major. *Prerequisite:* PORT 3202 or consent of instructor.

For Undergraduates and Graduates

3490 Topics in Portuguese (3-0)

May be repeated when topics vary. *Prerequisites:* 6 hours of advanced Portuguese and consent of instructor.

Russian (RUSS)

For Undergraduates

4101 Russian One (3-2)

An introductory course with emphasis on pronunciation and the basic elements of grammar; practice in understanding, speaking, reading and writing. (No prerequisite.) Laboratory Fee: \$2.

4102 Russian Two (3-2)

A continuation of Russian 4101, with the introduction of more complex elements of grammar; additional practice in the four basic skills. *Prerequisite:* RUSS 4101 or the departmental placement test. Laboratory Fee: \$2.

3201 Russian Three (3-0)

Oral and written work in Russian, with some more advanced grammar. *Prerequisite:* RUSS 4102.

3202 Russian Four (3-0)

Grammar review, compositions, and reading from Russian literature. *Prerequisite:* RUSS 3201.

3301 Pre-Revolutionary Russian Literature (3-0)

Main trends and principal writers in Russian in the pre-revolutionary period. May be repeated when topics vary. *Prerequisite:* RUSS 3202 or consent of instructor.

3303 Soviet Literature (3-0)

Major developments in Russian literature since 1917. May be repeated when topics vary. *Prerequisite:* RUSS 3202 or consent of instructor.

3320 Russian Civilization (3-0)

A survey of the political, social, intellectual, and artistic history of Russia. *Prerequisite:* RUSS 3202 or consent of instructor.

3350 Russian Literature in Translation (3-0)

Readings in English translation from various periods and genres of Russian Literature. Taught in English. *Prerequisite:* 6 hours of sophomore literature.

Spanish (SPAN)

For Undergraduates

4101 Spanish One for Non-Natives (3-2)

An introductory course for non-native speakers with emphasis on pronunciation and the basic elements of grammar; practice in understanding, speaking, reading and writing. (No prerequisite.) Laboratory Fee: \$2.

4102 Spanish Two for Non-Natives (3-2)

A continuation of Spanish 4101, with the introduction of more complex elements of grammar; additional practice in the four basic skills. *Prerequisite:* SPAN 4101 or the departmental placement test. Laboratory Fee: \$2.

4103 Spanish One for Native Speakers (3-2)

An introductory course based on the bilingual student's knowledge of Spanish; practice in vocabulary building, oral expression and writing essentials through basic grammar study. (No prerequisite.) Laboratory Fee: \$2.

4104 Spanish Two for Native Speakers (3-2)

A continuation of Spanish 4103 with the introduction of more advanced elements of grammar. *Prerequisite:* SPAN 4103 or the departmental placement test. Laboratory Fee: \$2.

3201 Spanish Three for Non-Natives (3-0)

Emphasis on speaking, understanding, reading, and writing modern Spanish. Completion of grammar study begun in 4101 and 4102. Readings from the contemporary period. *Prerequisite:* SPAN 4102 or the departmental placement test.

3202 Spanish Four for Non-Natives (3-0)

A continuation of Spanish 3201, with some grammar review and more extensive readings from the contemporary period. *Prerequisite:* SPAN 3201 or the departmental placement test.

3203 Spanish Three for Native Speakers (3-0)

Introduction to Spanish and Spanish American literature. Attention to reading and writing skills, vocabulary building and oral expression. *Prerequisite:* SPAN 4104 or the departmental placement test.

3204 Spanish Four for Native Speakers (3-0)

A continuation of Spanish 3203, with more extensive readings from modern authors. *Prerequisite:* SPAN 3203 or the departmental placement test.

3300 Critical Introduction to Hispanic Literature (3-0)

An overview of major literary movements, genres, and writers from the Middle Ages to the present. Introduction to literary analysis, with special emphasis on uniquely Hispanic elements such as Spanish prosody, the romances, the *auto sacramental*, character types and the like. Required of all Spanish majors, to be taken preferably before other upper-division literature courses. *Prerequisite:* SPAN 3202 or 3204 or equivalent.

3301 Spanish Literature before 1700 (3-0)

Main literary trends and principal writers from the Middle Ages through the Golden Age. *Prerequisite:* SPAN 3202 or 3204.

3302 Spanish American Literature to Modernism (3-0)

Main literary trends and principal writers in Spanish America from the sixteenth century to Modernism. *Prerequisite:* SPAN 3202 or 3204.

3303 Spanish Literature since 1700 (3-0)

Main literary trends and principal writers from the eighteenth century to the Contemporary period. *Prerequisite:* SPAN 3202 or 3204.

3304 Spanish American Literature since Modernism (3-0)

Main literary trends and principal writers in Spanish America from the Modernist Period to the present. *Prerequisite:* SPAN 3202 or 3204.

3305 Masterpieces of Hispanic Literature (3-0)

A study of selected great works of Spanish and Spanish American Literature. Includes an introduction to the major periods and move-

ments in the history of literature written in Spanish. Not for Spanish majors. *Prerequisite:* SPAN 3202 or 3204.

3309 Structure of Spanish for Teachers (3-0)

Linguistic analysis of Spanish orthography, sound system, morphology, and syntax. Course oriented toward needs of teachers of Spanish at all levels. Same as Linguistics 3309. *Prerequisite:* SPAN 3202 or 3204 or equivalent.

3315 History of the Spanish Language (3-0)

A survey of the development of the Spanish language from Vulgar Latin to modern Spanish. Same as LING 3315. *Prerequisite:* SPAN 3202 or 3204.

3320 Hispanic Civilization (3-0)

A survey of the cultural traditions of Spanish-speaking populations, including Spain, Spanish America and Spanish-speaking groups in the U.S. *Prerequisite:* SPAN 3202 or 3204.

3325 The Confluence of Mexican and Chicano Literature (3-0)

Comparative study of representative works in both Mexican and Chicano literature, stressing differences and correlations between the two. *Prerequisite:* SPAN 3202 or 3204.

3355 Advanced Conversation (3-0)

Practice in pronunciation, comprehension, and oral expression. Selected readings and written exercises designed to provide the opportunity for development of oral skills. Recommended for non-native speakers before progressing to other advanced Spanish courses. *Prerequisite:* SPAN 3202.

3356 Advanced Conversation for Native Speakers (3-0)

Practice in oral expression. Includes making oral reports, participation in roundtable discussions, delivery of short presentations with attention to vocabulary and pronunciation. Selected readings and written exercises designed to provide the opportunity for development of oral skills. *Prerequisite:* SPAN 3204.

3357 Advanced Composition (3-0)

Review of aspects of grammar essential to effective writing, introduction to elements of style and rhetoric, vocabulary building, intensive practice with written assignments and graded compositions. *Prerequisite:* SPAN 3202.

3361 Introduction to Creative Writing in Spanish (3-0)

Basic techniques of imaginative writing applicable to fiction, poetry and non-fiction. For students interested in pursuing an interest in writing through advanced workshop courses and/or expanding their powers of written expression through exercise of the senses, memory, and imagination. The course introduces students to the uses of concrete language, imagery, character portrayal and plotting techniques. Writing assignments and readings in Spanish. *Prerequisite:* SPAN 3357 or consent of instructor.

For Undergraduates and Graduates

3401 Methods of Foreign Language Instruction (3-0)

Practical application of linguistic principles to the teaching of modern foreign languages. Classroom techniques, development and evaluation of teaching and testing materials appropriate to the written and spoken languages. May not be counted for credit in addition to FREN, GERM or LING 3401. SPAN 3401 and 3402 may not both be counted.

3402 Introduction to Hispanic Linguistics (3-0)

Spanish phonology, phonetics, morphosyntax, dialectology, and developmental psycholinguistics for students lacking prior work in the formal analysis of these topics. *Prerequisite:* SPAN 3202 or 3204 or equivalent.

3424 The Literature of Mexico (3-0)

Principal genres and major works of Mexican literature. *Prerequisite:* 6 hours of advanced Spanish.

3428 Golden Age Drama (3-0)

A study of the leading dramatists: Lope de Vega, Tirso de Molina, Calderon de la Barca, Ruiz de Alarcon, Moreto and others. *Prerequisite:* 6 hours of advanced Spanish.

3432 Golden Age Prose (3-0)

A study of the Spanish picaresque, chivalresque and pastoral novels and shorter forms. Some consideration of mystic and satirical masterpieces. *Prerequisite:* 6 hours of advanced Spanish.

3435 Nineteenth Century Spanish Novel (3-0)

Readings from such authors as Fernan Caballero, Valera, Alarcon, Pereda, Perez Galdos, Pardo Bazan, etc. *Prerequisite:* 6 hours of advanced Spanish.

3439 The Short Story (3-0)

Shorter fictional forms in Spain and Spanish America from Juan Manuel to the present. *Prerequisite:* 6 hours of advanced Spanish.

3441 Modern Drama (3-0)

Readings from representative modern Spanish American and Spanish dramatists. *Prerequisite:* 6 hours of advanced Spanish.

3458 Twentieth Century Spanish Literature (3-0)

Readings in outstanding works by the principal authors of Spain of the century. Emphasis on a genre or type. *Prerequisite:* 6 hours of advanced Spanish.

3461 Don Quixote (3-0)

The literary value and influence of the *Quixote* and the *Novelas Ejemplares*. Traditional and modern interpretations. The life and times of Cervantes. *Prerequisite:* 6 hours of advanced Spanish.

3463 Spanish American Poetry (3-0)

Study and interpretation of major poets and movements from the Colonial period to the present. Emphasis on the Modernist period and contemporary poetry. *Prerequisite:* 6 hours of advanced Spanish.

3472 Contrastive Linguistics: Spanish/English (3-0)

The contrastive study of the phonological, morphological and syntactical systems of Spanish and English. *Prerequisite:* SPAN 3202 or 3204; SPAN 3309. *Recommended background:* LING/ENGL/ANTH 3220, LING/ENGL 3307, and SPAN 3402.

3473 The Spanish Language in the Americas (3-0)

The historical development of American Spanish including contemporary dialects of Latin America and the United States. *Prerequisite:* 6 hours of advanced Spanish or Linguistics.

3490 Topics In Spanish (3-0)

May be repeated when topics vary. *Prerequisite:* 6 hours of advanced Spanish.

See the *Graduate Studies Catalog* for graduate programs and courses.

Translation and Interpretation Program

COORDINATOR: Donna Mellen-Webking

The Program in Spanish-English Translation is designed to complement any academic major and to provide qualified students with the opportunity to acquire basic translation skills. It may be taken as a minor to satisfy BA degree requirements of the College of Liberal Arts. The objective of the program is to develop the student's writing ability in both English and Spanish and to expose the student to translation processes. Students will receive instruction in the theory and practice of translation as well as interpretation, professional ethics and responsibilities, and the use of resources available to the professional translator and interpreter. After completing the Program requirements students may elect to take professional level examinations, one into English and one into Spanish. Students may take one or both of these examinations. TRANSLATION CERTIFICATES will be awarded to those who demonstrate professional level competence in this manner. Completion of any two of the following courses with a grade of B or higher is considered a prerequisite for entrance into the Program: ENGL 3362, ENGL/LING 3307, LING/SPAN 3309, SPAN 3357. In certain special cases, the Program Coordinator may waive one or more of the above courses based on a student's previous experience or training.

The following courses are required to complete the Minor in Translation: SPAN 3359 or ENGL 3365, or ENGL/SPAN/LING 3472, plus ENGL/LING/SPAN 3481, 3482, 3491, 3942 and SPAN 3493.

The following courses may be taken for credit in English, Linguistics, or Spanish.

3359 Introduction to Translation (3-0)

Introduction to theory, ethics, and processes used in translation of Spanish and English. *Prerequisite:* Basic Language requirement: SPAN 3202 or 3204 and ENGL 3112 or equivalents.

3481 Translation Into English (3-0)

Intermediate level applied translation theory, research methods, and translation techniques used in written translation of Spanish into English. Course required for eligibility to take CERTIFICATION EXAMINATIONS. *Prerequisite:* SPAN 3359 or consent of instructor. May be taken concurrently with ENGL/LING/SPAN 3482.

3482 Translation Into Spanish (3-0)

Intermediate level applied translation theory, research methods and translation techniques used in written translation of English into Spanish. Course required for eligibility to take CERTIFICATE EXAMINATIONS. *Prerequisite:* SPAN 3359 or consent of instructor. May be taken concurrently with ENGL/LING/SPAN 3481.

3491 Topics In Translation (3-0)

Intermediate to advanced translation practicum course. Course will concentrate on a specific topic. Topics will vary every semester and include sight translation and translation of business, legal, technical, journalistic texts from both English and Spanish. Course required for eligibility to take CERTIFICATE EXAMINATIONS. *Prerequisites:* ENGL/LING/SPAN 3481 and 3482 or consent of instructor. Course may be repeated for credit. May be taken concurrently with ENGL/LING/SPAN 3492.

3492 Professional Translation (3-0)

Advanced translation practicum course with emphasis placed on speed and accuracy of rendition. Translation of technical, legal, business, and journalistic texts in Spanish and English. Course required for eligibility to take CERTIFICATE EXAMINATIONS. *Prerequisite:* ENGL/LING/SPAN 3481 and 3482 or consent of instructor. Course may be repeated for credit. May be taken concurrently with ENGL/LING/SPAN 3491.

3493 Introduction to Simultaneous Interpretation (3-0)

Introduction to ethics and history of the field of interpretation. Emphasis on memory techniques, decalage, condensation, expansion, voice modulation techniques in English and Spanish. *Prerequisite:* ENGL/LING/SPAN 3492 or consent of instructor.

Latin American Studies

209 Miners Hall
(915) 747-5196, 747-5157

INTERIM DIRECTOR: Santiago Ibarreche
PARTICIPATING FACULTY:

- Economics and Finance: Brannon, James
- English: Gingerich, Melendez-Hayes, Day
- Geography: Schmidt
- History: Broaddus, Martin, McGee-Deutsch
- Languages and Linguistics: Aguilar-Melantzon, Amastae, Armengol, Bagby, Elerick, Ford, Garcia, Natalicio, Teschner
- Music: Cardon
- Philosophy: Haddox
- Political Science: Bath, Peterson, Villarreal
- Sociology and Anthropology: Eyde, Rivera, Stoddard

B.A. In Latin American Studies

The Latin American Studies degree is an interdisciplinary major consisting of interrelated fields designed to provide students with the opportunity to prepare themselves for appropriate employment in business, government, education or for advanced study in a Latin American area at the graduate level. In addition to the regular academic program, lectures, special seminars and other Latin American resource opportunities are provided. The Director of the Center for Inter-American and Border Studies serves as advisor to Latin American Studies majors.

120/THE COLLEGE OF LIBERAL ARTS

In addition to fulfilling the general requirements for the Bachelor of Arts degree, the student must complete 30 hours of credit toward the major. In order to provide flexibility and relevance in the program, the student may choose among five options. In fulfilling the options, no single course may be used to satisfy more than one course requirement.

Students may satisfy the language requirement by successfully completing SPAN 3201-3202 (for non-native speakers) or 3203-3204 (for native speakers). This requirement may be waived upon successful completion of an approved competency examination. If the requirement is waived, students must complete one of the following: SPAN 3320: Hispanic Civilization (recommended for students relatively fluent in the language), SPAN 3355: Advanced Conversation, SPAN 3356: Advanced Conversation for Native Speakers, or SPAN 3357: Advanced Composition (recommended for students needing enhancement of either oral or writing skills).

Behavioral Science Option (30 semester hours)

- 6 hours from ECON 3366; GEOG 3312; POSC 3333; or HIST 3346, 3347, or 3350;
- 9 hours of 3300-3400 level Political Science courses in Latin American politics; or 9 hours of 3300-3400 level Economics courses with Latin American content;
- 6 hours CS 3110; SOCI 3212 or 3311 (SOCI 3212 may not count in the BA Mathematics/Sciences block);
- 9 hours of 3300-3400 level courses with Latin American content, selected from an approved list.

Border Studies Option (30 semester hours)

- 6 hours from ECON 3366; GEOG 3312; POSC 3333; or HIST 3346, 3347, or 3350;
- 6 hours from ECON 3468; HIST 3349; POSC 3444;
- 3 hours from HIST 3342, 3343;
- 3 hours from ANTH 3336; SOCI 3336;
- 3 hours from ANTH 3211, 3310; HIST 3316; PHIL 3351; POSC 3345, 3347;
- 3 hours from MUSL 3325; THEA 3335;
- 3 hours from ENGL 3371; SPAN 3325;
- 3 hours from an approved list of courses with a border focus.

Business-Economics Option (30 semester hours)

- 6 hours from GEOG 3312; POSC 3333; or HIST 3346, 3347, or 3350;
- 6 hours of Accounting;
- 9 hours, FIN 3310; MGMT 3300; and MKT 3300;
- 9 hours, ECON 3366, 3367, and 3468.

Humanities Option (30 semester hours)

- 6 hours from ECON 3366; GEOG 3312; POSC 3333; HIST 3346, 3347, or 3350;
- 9 hours of 3300-3400 level modern languages or English courses in Latin American literature;
- 9 hours of 3300-3400 level history courses with Latin American content;
- 6 hours from PHIL 3312; ARTH 3310; MUSL 3126.

Spanish-Linguistics Option (30 semester hours)

- 6 hours from ECON 3366; GEOG 3312; POSC 3333; HIST 3346, 3347, or 3350;
- 15 hours of 3300-3400 level Spanish courses with Latin American content;
- 6 hours in the linguistics of Spanish;
- 3 hours of 3300-3400 level coursework with Latin American content, selected from an approved list.

Minor in Latin American Studies

A student may pursue an 18-hour minor in Latin American Studies as part of the B.A. degree or as a complement to other degrees. Courses taken to fulfill minor field requirements may not be used to satisfy other degree requirements.

- 6 hours, SPAN 3201-3202 or 3203-3204. This requirement may be waived upon successful completion of an approved competency examination and if waived, the student must complete SPAN 3320, 3355, 3356 or 3357.
- 12 hours from ECON 3366; GEOG 3312; HIST 3346, 3347, or 3350; POSC 3333 or 3347;

- 6 hours in two disciplines from ANTH 3305, 3313; PHIL 3213; POSC 3444; SPAN 3304, 3424, 3463; or approved special topics course with a Latin American focus.

Minor in Border Studies

A student may pursue an 18-hour minor in Border Studies as part of the B.A. degree or as a complement to other degrees. Requirements for this minor are:

- 3 hours from HIST 3342, 3343;
- 3 hours from ANTH 3336; SOCI 3336;
- 3 hours from ANTH 3211, 3310; HIST 3316; PHIL 3351; POSC 3345;
- 3 hours from MUSL 3325; THEA 3335;
- 3 hours from ENGL 3371; SPAN 3325;
- 3 hours from courses not taken above, or selected from an approved list of courses with a border focus.

Military Science

Military Science Building
(915) 747-5621

CHAIRMAN: Lieutenant Colonel Frederick R. Jones

PROFESSOR: Jones

ASSISTANT PROFESSORS: Bloodworth, Gagliano, Schale, Trevino, Young

INSTRUCTORS: Clark, Hammett

General: Courses offered by this department are designed to offer qualified students an opportunity to become a commissioned officer. The curriculum provides opportunities for leadership training and experience which are not duplicated in other college courses. Instruction encourages the development of resource management skills, self-assurance, confidence, personal discipline, executive abilities, personal responsibility, professional ethics, physical stamina, bearing, and other fundamental qualities required of an Army officer. These same qualities will enhance any civilian careers.

The first two years (MS I and MS II) comprise the Basic Course which offers an introduction to Military Skills, Land Navigation, Leadership Assessment and Managerial Skills. Basic Courses are normally taken during the freshman and sophomore years without any military obligation. The last two years (MS III and MS IV) constitute the Advanced Course and are normally taken during the student's junior and senior years. Courses for MS II, III, and IV cadets require a non-credit LAB which is conducted on Wednesday afternoons from 12:30-2:20 p.m. Additionally, Advanced Course students are required to satisfactorily complete selected courses in Written Communication, Human Behavior, and Military History, prior to commissioning. MS 1112, 1113, and 1116 may be taken as electives.

Eligibility: *Basic Course.* To enroll in ROTC, you must be a full-time student of UT El Paso and a U.S. citizen. Normally the ROTC student begins Military Science courses during the freshman year; however, sophomores are permitted to enroll in the Basic Course. Credit for all or part of the Basic Course may be granted by the Professor of Military Science (PMS) for participation in high school ROTC or for active military service of four or more months. This is done on a case-by-case basis.

Two Year Program. Students who did not enroll in the Basic Course, or who cannot be given credit for the Basic Course by virtue of active military service or participation in Junior ROTC (high school), may qualify for the advanced course by attending a six-week summer training camp (Camp Challenge located at Fort Knox, Kentucky). Applicants for the camp should visit the Department of Military Science during the Fall semester, but not later than 1 March to obtain application forms and schedule a physical examination. You must have a minimum of four semesters remaining prior to completion of a baccalaureate or advanced degree.

Advanced Course. Admission requires approval of the PMS, based on medical fitness, an acceptable degree plan, a cumulative GPA of 2.0 or higher, and military qualification under one of the following plans:

1. Prior military service;
2. Completion of the Basic Course requiring, as a minimum, 6 credit hours in MS 1101, 1103, 2202, and 2204;

3. Completion of Camp Challenge at Fort Knox, Kentucky;
4. Junior ROTC-advanced placement (approved on an individual basis by the PMS).

The student is required to sign a contract with the U.S. government to accept a commission in the Army or Army Reserve upon graduation.

Scholarships: Four-year Scholarships. Over twelve hundred four-year Army ROTC scholarships are available annually. These scholarships are awarded on a nationally competitive basis to high school graduates. Interested high school seniors should obtain application requests from their counselors and submit the request by December. Application forms are also available at the Military Science Department.

Three-year Scholarships. UT El Paso is allocated a limited number of three-year Army ROTC scholarships. Others are available on a nationally competitive basis at the beginning of the spring semester. Freshmen, including those not enrolled in Military Science, may apply through the Military Science Department. Applications may be submitted from January until mid-March.

Two-year Scholarships: UT El Paso is allocated a limited number of two-year Army ROTC scholarships. Others are available on a nationally competitive basis. Sophomores, to include those not enrolled in Military Science, are eligible. Application is made in December through the Military Science Department. Other two-year scholarships are available, on a competitive basis, to students attending Camp Challenge. Application is made at camp.

Pay and Allowances: All students enrolled in ROTC are furnished summer and winter uniforms, textbooks, and equipment on a loan basis. All advanced course cadets are paid \$100 per month for a maximum of twenty months, excluding the six-week Advanced Camp. The U.S. Government pays the tuition, required fees, textbooks, and essential classroom supplies for Army ROTC scholarship students. Additionally, ROTC scholarship recipients are paid \$100 per month during the fall and spring semesters of their freshman and sophomore years. The government also provides a mileage allowance to and from ROTC and camps. Students will also receive approximately \$600 for completion of the 6-week Camp Challenge at Fort Knox, Kentucky.

Additional Programs: Qualified cadets may attend the following schools: Airborne School, Ranger School, Air Assault School. Additionally, Advanced Course cadets may attend Cadet Troop Leader Training (CTLT), serving a two- to three-week tour with an active Army unit upon completion of Advanced Camp. In addition to the above special schools, third semester Russian language students may attend the U.S. Army's Russian-Language Institute in the German Alps on the Austrian border during the summer session. No additional service obligation is incurred.

Commissions Offered: Upon successful completion of all Military Science studies and requirements for a baccalaureate degree, a cadet is given a commission as a Second Lieutenant in the United States Army or Army Reserve and may be required to serve on active duty not to exceed three years (four years for ROTC scholarship students). Reserve Officers may request that their active duty be for a period of only three months. Cadets who qualify as Distinguished Military Students by maintaining the prescribed academic and leadership standards through Advanced Camp and their senior year, are designated as Distinguished Military Graduates of UT El Paso. Distinguished Military Graduates may receive a Regular Army commission which is identical to those awarded at the United States Military Academy at West Point. Since UT El Paso offers a general Military Science curriculum, a commission in most branches of the Army is possible. Following graduation, newly commissioned officers are sent to an Officer Basic Course (OBC) to qualify for a specific branch, and then complete a tour of active duty through a variety of challenging assignments. Reserve officers return to a local Reserve unit upon completion of OBC. Active duty can be delayed for those students who wish to pursue graduate studies leading to a master's degree, law degree, medical degree or others.

Military Science (MS)

Elective Courses

1102 Land Navigation (1-1)

A detailed study of maps and compasses and the skills and techniques required to navigate cross country over unfamiliar terrain using map and compass. Introduction to basic military map reading skills. No military obligation. *Prerequisite:* Instructor approval.

1112 Rappelling (1-1)

A basic skill course that includes an introduction to rappelling equipment, various rappelling techniques, knot tying, and techniques of rigging ropes for rappelling. No military obligation.

1113 Marksmanship (1-1)

An extensive skill course emphasizing the techniques of marksmanship and the firing of .22 caliber rifles, pistols, and match-grade air rifles. No military obligation.

1116 Marksmanship (Advanced) (1-0)

An intensive, advanced skill course emphasizing the techniques of competitive marksmanship with match-grade .22 caliber rifles. *Prerequisites:* MS 1113 and instructor approval. May be repeated for credit. No military obligation.

Basic Course (MS I and II)

1101-03 Introduction to Basic Military Skills (1-1)

An introduction of basic military skills and professional knowledge subjects essential for the development of the novice military leader. No military obligation. *Prerequisite:* Instructor approval.

2202-04 Military Skills (2-2)

A study of various military skills and professional knowledge subjects essential to a military leader. The MS 2204 course concludes with a leadership assessment evaluation which provides a screening technique, involving behavioral simulations, to determine the competency of potential junior officers. *Prerequisite:* MS 1101, 1103, 2202, or instructor approval. No military obligation.

Advanced Course (MS III and IV)

3301-02 Military Science III (3-1)

A comprehensive treatment of those qualities and skills fundamental to the military profession. This course addresses the role of the Army in national affairs as well as from the historic context. Concurrently, it provides instruction in the organizational, planning, and directive processes of control while incorporating those leadership dimensions associated with written and verbal communicative forms, training procedures, counseling techniques, systems and resource management. This body of information is superimposed over a framework involving selected military skills. *Prerequisites:* Completion/credit for Basic Course and PMS approval.

4301 Summer Field Training (4-0)

Intensive field training course stressing practical application of leadership, management and performance with emphasis on tactical and technical military skills. The Nursing Advanced Training is supervised by the Chief of the Department of Nursing at a major Army hospital and provides an unparalleled opportunity for professional nursing experience. Students are enrolled on a pass/fail basis (credit toward free elective only). *Prerequisites:* MS 3301 and 3302, fully enrolled as an Advanced Course Student and PMS approval.

3401-02 Military Science IV (3-1)

An in-depth examination of the profession of arms as it relates to military ethics and professionalism and the military justice system. Provides the opportunity to develop executive leadership and managerial skills associated with their attendant functions such as planning and analysis; training management; Command and Staff relationships; personnel, fiscal, and logistics management. Concurrently the MS IV student is placed in leadership, managerial and instructional roles within an Army Command and Staff framework, and is required to exercise those skills in day-to-day operations. *Prerequisite:* MS 3301, 3302 and PMS approval.

Music

301 M Fox Fine Arts
(915) 747-5606

CHAIRPERSON: Marcia Fountain

PROFESSORS EMERITI: Olav Elling Eidbo, Richard E. Henderson, Engebret A. Thormodsgaard

PROFESSORS: Cardon, Chavez, Fountain, Paul

ASSOCIATE PROFESSORS: L. Gibson, Hufstader, Ross, Stanley, Stannard, Trimble, White

ASSISTANT PROFESSORS: G. Gibson, Groves, Heuser, Kress, Lewis, Loftin, Packales, Sylvan, Warren, Wicks

The Department of Music offers programs leading toward the Bachelor of Music (BM) degree in three major fields:

Major in Performance

Performance majors may select either orchestra/band instruments, keyboard instruments, voice, guitar, ballet, or keyboard performance pedagogy as an option within the major.

GENERAL REQUIREMENTS

ENGL 3111-3112 or equivalent

6 hours sophomore or higher level English

POSC 3110, 3111

HIST 3101-3102 or 3103-3104

SPEECH: 3 hours

Participation for a minimum of 8 semesters in the ensemble of the major instrument is required; this participation is expected every semester in residence. For exceptions, petition the Music Faculty in writing.

Recital 0191 or 0391 is required every semester in residence.

OPTION REQUIREMENTS

Orchestra/Band Instruments:

MUSL 2121, 2122, 2319, 2320, 2321, 2322 (12 hours)

MUST 1111, 1112, 3113, 3114, 1211, 1212, 3213, 3214, 2315, 2411 or 2412, plus 2 additional hours of theory

MUSE 3331, 3333

Major Instrument — 16 hours of MUSA 4191 and 16 of MUSA 4391

Piano Proficiency to the level of MUSA 2272

Chamber Music — 4 hours of MUSA 1165

Keyboard Instruments:

MUSL 2121, 2122, 2319, 2320, 2321, 2322 (12 hours)

MUST 1111, 1112, 3113, 3114, 1211, 1212, 3213, 3214, 2315, 2411 or 2412, plus 5 additional hours of theory

MUSE 3331, and 3333

Major Instrument — 16 hours of MUSA 4191 and 16 of MUSA 4391

Voice — 4 hours

Chamber Music — 4 hours of MUSA 1165

Piano Pedagogy — MUSE 3494

Keyboard Performance Pedagogy:

MUSL 2121, 2122, 2319, 2320, 2321, 2322 (12 hours)

MUST 1111, 1112, 3113, 3114, 1211, 1212, 3213, 3214, 2315, 2411 or 2412, plus 5 additional hours of theory

MUSE 3331, 3333

Piano — 12 hours of 3191, 12 hours of 3391

Voice — 4 hours

Chamber Music — 4 hours of MUSA 1165

MUSE 3494 — 9 hours (3 semesters)

Minimum of 8 hours of major ensemble

Psychology 3101 and 3 hours from PSYC 3210, 3202, 3204, or 3206

8 hours of Modern Languages recommended as electives

Voice:

MUSL 2121, 2122, 2319, 2320, 2321, 2322 (12 hours)

MUST 1111, 1112, 3113, 3114, 1211, 1212, 3213, 3214, 2315, 2411 or 2412, plus 2 additional hours of theory

MUSE 3331, 3333

Voice — 12 hours of MUSA 3191 and 12 of MUSA 3391

Piano Proficiency to the level of MUSA 2272

Vocal Pedagogy — MUSA 2493

Foreign Language — 4101, 4102 in a modern language

Diction — 8 hours

4 hours of Music Theatre Workshop

Guitar:

MUSL 2121, 2122, 2319, 2320, 2321, 2322 (12 hours)

MUST 1111, 1112, 3113, 3114, 1211, 1212, 3212, 3214, 3215, 2411 or 2412, plus 2 additional hours of theory

MUSE 3331, 3333

Major Instrument — 16 hours of MUSA 4191 and 16 of MUSA 4391
Piano Proficiency to the level of MUSA 2272

Chamber Music — 6 hours of MUSA 1148 or 1149

Secondary guitar (jazz for classical majors; classical for jazz majors) — 2 semesters of 3181

Large ensemble requirement — minimum of 6 hours chorus, band, or orchestra

Ballet:

Theatre Arts 3113 or 4213

MUSL 3124, 2121, 2122, 2343, 2344

Theory — 6 hours

MUSE 3435 and MUSB 3444

Foreign Language — 4101, 4102 in a modern language, French recommended

Ballet Technique — MUSB 3141, 3142, 3241, 3242, 3341, 3342, 3343, 3441, 3442

Piano — 4 semester hours

Ensemble — MUSA 1147 during each semester, plus 2 semesters of MUSA 1155

Major in Theory and Composition

Students may select either voice, orchestral instruments or guitar or keyboard as the major instrument.

GENERAL REQUIREMENTS

ENGL 3111-3112 or equivalent

HIST 3101-3102 or 3103-3104

POSC 3110, 3111

Music literature and history — 12 hours

Theory — MUST 1111, 1112, 3113, 3114, 1211, 1212, 3213, 3214, 2315, 2411 or 2412, 4 hours of 2219, plus 17 additional upper level hours

Music Education — MUSE 3331 and 3333

Participation for a minimum of 8 semesters in the ensemble of the major instrument is required; this participation is expected every semester in residence. For exceptions, petition the Music Faculty in writing.

Recital 0191 or 0391 is required every semester in residence.

OPTION REQUIREMENTS

Voice:

Applied Voice — 12 semester hours, including 4 upper-level hours

Group Instruction — 8 semester hours in orchestral instruments

Diction and Repertory — 8 semester hours

Piano — proficiency to the level of MUSA 2272

Complete a final composition project

Orchestra or Keyboard:

Applied — 16 semester hours, including 6 upper-level hours

Group Instruction — 8 semester hours in orchestral instruments

Voice — MUSA 2173

Piano — proficiency to the level of MUSA 2272

Complete a final composition project

Major in Music Education

The BM degree may be combined with All-Levels certification in Music by completing the program listed below for a minimum total of 140-semester hours including 30 advanced hours. Students may select either an Instrumental or a Choral plan in the Specialization Area. A grade point average of at least 2.5 must be maintained for all coursework required in this program.

Programmatic changes are planned for those students who will graduate Fall 1991 or after, and requirements may differ from those outlined below. Students should consult with the chairperson of the Music department and the Certification Officer, College of Education, irrespective of planned graduation date.

GENERAL REQUIREMENTS

ENGL 3111-3112 or equivalent with grade of C or better; plus 6 hours of English Literature, 3 of which must be 3300-3400 level

SPCH 3101 with grade of C or better
 HIST 3101-3102
 POSC 3110, 3111
 MATH 3120, CS 3110, and 3 hours of any lab science;
 9 hours of electives from behavioral sciences, economics, languages, fine arts, or humanities

MUSIC SPECIALIZATION AREA

Participation for a minimum of 8 semesters in the ensemble of the major instrument is required; this participation is expected every semester in residence. For exceptions, petition the Music Faculty in writing.

Required for both Instrumental and Choral plans: Recital Attendance — MUSA 0191 or 0391 required every semester in which the major numbers (0091) are taken.

REQUIRED FOR BOTH INSTRUMENTAL AND CHORAL PLANS:

Theory — MUST 1111, 1112, 3113, 3114, 1211, 1212, 3213, 3214, and 2315

Music Education — MUSE 3331, 3333, 3336, and 3433

Literature — MUSL 2121, 2122, plus 4 hours from 2319, 2320, 2321, 2322

Major Instrument — 12 semester hours, including a minimum of 2 upper-level semesters

Major instrument registration is required each semester of residence.

A partial senior recital is required.

Group Instruction — Class Piano, including proficiency test, is required: 6 hours for Instrumental Plan, 8 hours for Choral Plan.

REQUIRED FOR INSTRUMENTAL PLAN:

Theory — MUST 2412

1 semester of chorus

8 semester hours of Pedagogy: MUSA 1167, 1168, 1175, 1176, 1177, 1178, 2179

Guitar majors take 3 semesters of band or orchestra instrument at the -191 level and a minimum of 8 semesters of band or orchestra, depending on instrument. Guitar majors also take a minimum of 4 semesters of guitar ensemble.

Piano majors take 3 semesters of band or orchestra instrument at the -191 level and a minimum of 8 semesters of band or orchestra, depending on instrument. Piano majors also take four semesters of MUSA 1165.

REQUIRED FOR CHORAL PLAN:

Theory — MUST 2411

Applied — MUSA 2493

Diction — MUSA 2151, 2152, 2251, 2252

Guitar majors take 3 semesters of voice at the -191 level and a minimum of 8 semesters of major vocal ensemble. Guitar majors take a minimum of 4 semesters of guitar ensemble.

Piano majors take 3 semesters of voice at the -191 level and a minimum of 8 semesters of major vocal ensemble. Piano majors also take four semesters of MUSA 1165.

PROFESSIONAL STUDIES:

EDPC 3301; ELED 3302; RED 3340 or 3342; SCED 3317; SPED 3425; TED 1201, 9497

Prior to admission to Teacher Education and/or professional education courses, students must complete the following: (1) English 3111-3112 and Speech 3101 with grades of C or better; (2) Teacher Education 1201 with grade of S; (3) minimum of 45 semester hours college work completed with a cumulative G.P.A. of at least 2.0 at UT El Paso; (4) Pre-Professional Skills Test (P-PST) or the Texas Academic Skills Program (TASP) with passing scores; and (5) degree and/or certification plan on file in the Certification Office. In order to be recommended for certification, a student must complete the following: (1) an approved degree program and be approved for graduation; (2) ExCET tests in teaching field(s) and professional education with passing scores in each test; (3) cumulative G.P.A. of 2.0; and (4) 2.5 G.P.A. in teaching field(s) and in professional education.

Minor in Music:

Students pursuing the BA degree in another discipline may minor in music, with either an applied music or an academic music option. Some background in music is required and the student will take

placement tests in both theory and applied music. Requirements are:

For the Applied Music Option —

8 hours (4 semesters) MUSA 2191

9 hours (3 semesters) MUSA 3391

MUSL 2121 and 2122

For the Academic Music Option —

MUST 3113-3114 and 1111-1112

MUSL 2121-2122, 2319, 2320, 2321, and 2322

Applied Music (MUSA)

ENSEMBLE: Symphonic Wind Ensemble, Symphonic Band, Marching Band, Lab Stage Band, Ballet Corps, Chorale, Chorus, Orchestra, Guitar, and small chamber groups are maintained. These organizations are open to all students who wish to enjoy the performance of a great variety of music. On special occasions each year, several organizations are combined in large productions including operas, ballets and oratorios. Home concerts and concert tours are a part of the program. Consent of the instructor is required for some ensemble courses, and all may be repeated for credit.

1102 Golddiggers (1-4)

A course for women in dancing, twirling, pom pom and marching activities; participation in football shows and other public appearances. *Prerequisite:* Admission by try-out only.

1141 Band Literature (3-0)

A study of selected works in the field of band literature. Concurrent registration with MUSA 1143 may be required. *Prerequisite:* Placement.

1143 Band (3-0)

1144 Orchestra (3-0)

1145 University Chorale (3-0)

1146 Lab Band (3-0)

1147 Ballet Ensemble (10-0)

Performing techniques and participation in the University Ballet Corps. Ballet majors are required to participate for eight semesters and/or each semester in attendance. Open to all through audition.

1148 Guitar Ensemble (2-0)

1149 Jazz Guitar Ensemble (2-0)

1151 Choral Literature (3-0)

A study of selected works in the field of choral literature. Concurrent registration in MUSA 1145 is required. *Prerequisite:* Placement.

1155 University Chorus (3-0)

A mixed singing organization open to all students interested in any kind of choral work. Audition is not required. Oratorios and operas are presented with orchestral accompaniment, occasionally in combination with the University Chorale. Open to all.

1161 String Orchestra Literature (3-0)

A study of selected works in the fields of orchestra literature. Concurrent registration in MUSA 1144 is required. *Prerequisite:* Placement.

1165 Chamber Music and Accompanying (3-0)

Reading of music and the study of selected works characteristic of the performing group. *Prerequisite:* Placement.

GROUP INSTRUCTION: Credit granted only when taken as a secondary instrument or elective. Open to all students with permission of instructor.

2171 Piano Class I (3-0)

2172 Piano Class II (3-0)

Prerequisite: MUSA 2171 or placement.

2271 Piano Class III (3-0)

Prerequisite: MUSA 2172 or placement.

2272 Piano Class IV (3-0)

Prerequisite: MUSA 2172 or placement.

2173 Voice Class (2-0)**2174 Voice Class (2-0)****1175 Low Strings Pedagogy (2-0)****1176 High Strings Pedagogy (2-0)****1167 Single Reeds Pedagogy (2-0)****1177 Double Reeds Pedagogy (2-0)****1168 High Brass Pedagogy (2-0)****1178 Low Brass Pedagogy (2-0)****2179 Percussion Pedagogy (3-0)****2180 Beginning Guitar Class (2-0)**

An introduction to beginning techniques of classical and folk guitar styles with emphasis on note reading. Open to all.

2280 Intermediate Guitar Class (2-0)

Continued work on the classical techniques and literature of the guitar. *Prerequisite:* MUSA 2180 or permission of instructor.

2151 English Diction and Repertory (2-0)

Introduction to English singing diction and its application through selected repertory.

2152 Italian/Spanish Diction and Repertory (2-0)

Introduction to Italian and Spanish singing diction and its application through selected repertory.

2251 German Diction and Repertory (2-0)

Introduction to German singing diction and its application through selected repertory.

2252 French Diction and Repertory (2-0)

Introduction to French singing diction and its application through selected repertory.

2253, 2254 Music Theatre Workshop (2-0)

Exploration through active participation of the aspects of stage production peculiar to music theatre, styles and techniques of acting with music, stage directing problems in treating a musical score, and rudimentary technical production. Brief survey of literature for the musical stage appropriate to public school, community, and television productions. *Prerequisites:* Permission of instructor, and preceding course where listed.

For Undergraduates and Graduates

3331 Beginning Conducting Techniques (3-0)

Techniques of conducting and organizing vocal and instrumental ensembles. Baton techniques, score reading, interpretation, rehearsal techniques, and literature of various ensembles. *Prerequisites:* MUST 3214 and junior standing as a music major.

3333 Advanced Conducting Techniques (3-0)

Continued study of conducting begun in MUSA 3331. *Prerequisite:* MUSA 3331.

2353, 2354 Music Theatre Workshop (2-0)

Continuation of 2254. *Prerequisites:* Junior standing, permission of the instructor, and preceding course where listed.

2493 Pedagogy of Voice (2-0)

Methods of voice development through voice-building and song literature. The study of psychological and physiological vocal problems, including the changing voice, the monotone and registers of all voice classifications. Attention also given to training voices for choral singing and solo performance. *Prerequisites:* Senior standing in music or equivalent vocal study and experience; MUSA 3391, 2151-52, and 2251-52, and permission of instructor.

INDIVIDUAL INSTRUCTION: Placement auditions are required on the major and secondary instruments. Students who demonstrate adequate proficiency on any required instrument or voice will be encouraged to substitute other courses outside of the music area. Students will perform before the music faculty at the close of each semester.

The audition at the close of the second year also determines admission to upper division courses. A grade of "B" is required on the major instrument for permission to continue with the succeeding course. For full description of the course of study for any applied music course, consult the Music Department Handbook, which is available in the departmental office.

Students are expected to study on campus with members of the University music faculty. Performance majors must present a full graduation recital approved by the music faculty. Music Education majors must present a partial recital.

Consent of the instructor is required for all individual instruction.

2181 Individual Instruction

For non-majors, as a secondary instrument, and for students needing preparatory study. One thirty-minute lesson per week. *Prerequisite:* Preceding course or placement. Fine Arts Fee: \$20.

3181 Individual Instruction

For non-majors, as a secondary instrument, and for students needing preparatory study. Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* Preceding course or placement. Fine Arts Fee: \$35.

0191 Student Recital Lab

For 2191, 3191, 4191. Required of all students registered in these courses. Graded Pass/Fail.

0391 Student Recital Lab

For 2391, 3391, 4391. Required of all students registered in these courses. Graded Pass/Fail.

2191 Individual Instruction

Lower-level applied lessons for Music Education and Theory/Composition majors. One thirty-minute lesson per week. *Prerequisite:* Written permission of teacher. *Co-requisites:* Music 0191, registration in major ensemble. Fine Arts Fee: \$20.

3191 Individual Instruction

Lower-level applied lessons for Music Education and Theory/Composition majors. Two thirty-minute lessons per week. *Prerequisite:* Written permission of teacher. *Co-requisites:* Music 0191, registration in major ensemble. Fine Arts Fee: \$35.

2391 Individual Instruction

Upper-level applied lessons for Music Education and Theory/Composition majors. One thirty-minute lesson per week. *Prerequisite:* Written permission of teacher. *Co-requisites:* Music 0391, registration in major ensemble. Fine Arts Fee: \$20.

3391 Individual Instruction

Upper-level applied lessons for Music Education and Theory/Composition majors. Two thirty-minute lessons per week. *Prerequisite:* Written permission of teacher. *Co-requisites:* Music 0391, registration in major ensemble. Fine Arts Fee: \$35.

4191 Individual Instruction

Lower-level applied lessons for Performance majors. Two thirty-minute lessons and fifteen practice hours per week. *Prerequisite:* Written permission of teacher. *Co-requisites:* Music 0391, registration in major ensemble. Fine Arts Fee: \$35.

4391 Individual Instruction

Upper-level applied lessons for Performance majors. Two thirty-minute lessons and fifteen practice hours per week. *Prerequisite:* Written permission of teacher. *Co-requisites:* Music 0391, registration in major ensemble. Fine Arts Fee: \$35.

REPERTORY CLASS: Repertory classes offer the student performance experience and added instruction in technique and literature in a two-hour class. These courses must be taken concurrently with an appropriate Individual Instruction class. All repertory classes may be repeated for credit.

1192 Piano Repertory (2-0)**1193 String Repertory (2-0)****1194 Guitar Repertory (2-0)**

Ballet (MUSB)

For Undergraduates

3141, 3142 Ballet Technique (5-0)

Basic ballet techniques combining the methods of the Russian Cecchetti and French schools. Sections open to all students meet three days a week. Sections open to Ballet majors meet five days a week.

3343, 3344 Character and Jazz Dance (3-0)

Interpretation of national dancing; fundamentals and techniques of jazz dance. *Prerequisites:* MUSB 3142 or background in dance, and permission of instructor. May be repeated for credit.

3241, 3242 Intermediate Ballet (5-0)

Continuation of 3142 with more advanced work in the creative aspects of dance movements. *Prerequisite:* MUSB 3142 or permission of instructor.

3341, 3342 Ballet Techniques (5-0)

Continuation of 3242; advanced techniques with increased emphasis on certain creative aspects of dance movements. *Prerequisites:* MUSB 3242 or equivalent, junior standing and permission of the instructor.

3441, 3442 Advanced Ballet Techniques (5-0)

For students wishing to study ballet as a principal performance medium. Concentrated study including points and adagio work. Admission is by audition only. *Prerequisite:* MUSB 3342.

3444 Choreography (3-0)

Principles of development, rehearsal, and execution of ballet choreography. *Prerequisite:* MUSB 3342.

Music Education (MUSE)

For Undergraduates and Graduates

3334 Teaching of Music in the Elementary Schools (3-0)

Consideration of music in relation to the child voice and song repertory, rhythm bands, dramatic play, discriminating listening, as determined by the child's stage of growth, correlation and integrations with the elementary curriculum. Curricular plans and materials. For Elementary Education majors. *Prerequisite:* Junior standing.

3336 Teaching of Music in the Elementary Schools (3-0)

Pre-adolescent growth and development as the basis of procedures in the teaching of music in the elementary grades. Designed to meet the needs of the special music teacher. The child voice, its development and classification. Introduction of notation, song materials, rhythm bands, appreciation methods and creative music for children. For Elementary School Music majors. *Prerequisites:* Junior standing in music education, and MUST 3214.

3433 Teaching of Music in the Junior and Senior High Schools (3-0)

The study of the adolescent growth and development, and related procedures in the teaching of music in the upper level grades and in high school. Choral and instrumental music materials, organization of ensembles, teaching of music appreciation and theory; correlation and integration with the entire school curriculum; public school type music as it is related to the life and needs of a community. *Prerequisites:* Junior standing in music education and MUST 3214.

3434 Marching Band Techniques and Arranging (3-0)

The study of techniques and materials used in developing a marching band program in junior and senior high schools. Arranging for the marching band, preparing and charting half-time shows for football games. *Prerequisite:* MUST 2412 or senior standing.

3435 Selected Problems in Music Education (3-0)

The student may receive individual instruction and guidance in the area in which a specific need is demonstrated. Credit may be received in the elementary or secondary school field. *Prerequisites:* Six hours of Education, six hours of Music, senior standing, or equivalent background as determined by the instructor and chairman of the department.

3494 Piano Pedagogy (3-1)

Materials and methods for beginning, elementary, intermediate, and advanced piano students. Emphasis on both class and private instruction. Observation and internship included. May be repeated for credit.

Literature and History (MUSL)

For Undergraduates

2121, 2122 Introduction to Music Literature (2-0)

A general survey of the history of music in the Western world, including some discussion of the music of non-western cultures. *Prerequisite:* Permission of instructor.

3124 Music in Western Societies (3-0)

A survey of music and its roots in Western civilization. Emphasis on music listening skills as well as relationships between music and other arts and society. Performance of live and recorded music offered to class. No musical background is assumed. Open to all.

3126 The Music of Mexico (3-0)

A survey of Mexican musical development including pre-conquest Mayan, Aztec, colonial and 20th century periods as well as the Mariachi and folk styles. Representative literature demonstrated by guest artists and recordings. Open to all.

3127 Jazz to Rock (3-0)

A study of the styles, performers and composers of American Jazz music, beginning with the evolution of early jazz styles which combine English, Spanish, and French folk songs with African tribal rhythms, and continuing to the present. Guest artists and audio-visual aids are used. Open to all.

3129 From Folk to Country (3-0)

Study of the roots of folk music from English folk songs and country blues to present-day American folk music. Country music from the early blue-grass songs to present-day country-western music.

For Undergraduates and Graduates

2319 Music in the Middle Ages and Renaissance (2-0)

Music history and style from the fall of Rome through 1600. *Prerequisites:* Junior standing and MUSL 2122 or equivalent.

2320 Music in the Baroque and Early Classic Era (2-0)

Music history and style from 1600 to 1770. *Prerequisites:* Junior standing and MUSL 2122 or equivalent.

2321 Music in the Classic Era and Romantic Era (2-0)

Music history and style from 1770 to 1890. *Prerequisites:* Junior standing and MUSL 2122 or equivalent.

2322 Music in the Late Romantic Era and Twentieth Century (2-0)

Music history and style from 1890 to the present. *Prerequisites:* Junior standing and MUSL 2122 or equivalent.

2323 History of Fretted Instruments

A course in the history of fretted musical instruments with emphasis on the development of the lute and guitar. Study of early tablatures, transcription procedures, and first editions. May be used by performance majors in guitar in the required 12 hours of Music Literature. *Prerequisites:* Junior standing and MUSL 2122 or equivalent.

3324 Introduction to Ethnomusicology (3-0)

General introduction to the relationships between music and culture with special emphasis upon the music of Asians, Africans, and Native Americans. Listening, ethnomusicological activities. Open to all.

3325 Music on the Border (3-0)

An investigative course designed to promote a greater awareness of the role music plays in contemporary life along the U.S./Mexico border, with special attention to folk and popular styles. Supervised field research will be emphasized in which each student is encouraged to relate music to his personal interest and/or major field. No musical background is assumed.

2343, 2344 History of Ballet (2-0)

The evolution of ballet, choreographic styles and traditions, significant artists and their contributions, and contemporary ballet. *Prerequisite:* MUSB 3242.

Theory (MUST)

For Undergraduates

3111-3112 Fundamentals (3-0)

Functional experiences in the basic fundamentals of music with simple melodic, harmonic and rhythmic activities; one through four-part singing and dictation. Open to all.

1111-1112 Sight-Singing and Dictation (2-0)

Experience in aural recognition of tone relations through sight-singing, dictation, and keyboard activities. Concurrent registration with MUST 3113, 3114 required. *Prerequisite:* MUST 3112, or equivalent background.

3113-3114 Music Theory and Essentials of Acoustics (3-0)

The combination, transmission and effects of musical sounds, utilizing symbols. The logic of order in music as exemplified in acoustics, overtone series, scales, diatonic harmony, rhythm, melody writing, non-harmonic devices, simple modulation. Concurrent registration with MUST 1111, 1112 required. *Prerequisite:* MUST 3112, or equivalent background.

3115 Introduction to Electronic Music (3-2)

Creating sounds with digital synthesis. Computer controlled digital synthesizers. Tape recording of music. May be repeated once for credit.

2217 Jazz Improvisation (2-0)

A study of the basic techniques of jazz improvisation, including chord/scale relationships, harmonic progressions and styles. Emphasis on blues and standard tunes characteristic of the jazz idiom. *Prerequisite:* MUST 3114 or permission of instructor.

2218 Advanced Jazz Improvisation (2-0)

Continuation of the development of improvisational techniques, including chord substitution and altered chord/scales. Projects include transcribing and analyzing jazz solos. *Prerequisite:* MUST 2217 or permission of instructor.

1211-1212 Sight Singing and Dictation (2-0)

Continuation of MUST 1112. Concurrent registration with MUST 3213, 3214 required.

3213, 3214 Harmony (3-0)

Continuation of melodic and harmonic dictation and part writing; harmonic analysis and simple forms; seventh chords; altered chord, keyboard practice. *Prerequisite:* MUST 3113-14. Concurrent registration with MUST 1211, 1212 required.

2219 Introduction to Composition (2-0)

Traditional and contemporary styles of composition with an emphasis on small forms. *Prerequisite:* Permission of instructor. May be repeated for credit.

For Undergraduates and Graduates

2311 Sixteenth-Century Counterpoint (2-0)

The study of sixteenth-century contrapuntal techniques as exemplified in Palestrina, Lasso, Victoria, and other masters. Analysis of representative works and original compositions in sixteenth-century sacred style. *Prerequisites:* MUST 3214 and 1212.

2312 Eighteenth-Century Counterpoint (2-0)

The study of eighteenth-century contrapuntal techniques as exemplified in the music of Bach. Analysis of representative works and original composition of Inventions and Fugues. *Prerequisites:* MUST 3214 and 1212.

2315 Form and Analysis (2-0)

Detailed study of the logic of musical structure as exemplified in representative works of all historical periods. Introduction to graphic analysis. *Prerequisites:* MUST 3214 and 1212.

3315 Advanced Electronic Music (3-2)

Digital and analog synthesis of music. Computer control of MIDI systems. Sound sampling and manipulation. *Prerequisite:* MUST 3115. May be repeated for credit.

2316 Seminar In Advanced Analysis (2-0)

Analysis of music from all historical periods using both traditional and contemporary analytical techniques. May be repeated for credit. *Prerequisite:* MUST 2315.

3319 Advanced Composition (3-0)

Advanced study of composition with increasing emphasis on contemporary techniques and larger forms. May be repeated for credit. *Prerequisites:* MUST 2219 and admission to the theory/composition curriculum as a major or equivalent.

2411 Choral Arranging (2-0)

A study of basic principles of writing, arranging, and editing choral music in two to eight parts. Emphasis upon music suitable for public school choral groups. *Prerequisites:* MUST 3213, 3214 and four semester hours, or equivalent, of class instruments.

2412 Instrumentation and Orchestration (2-0)

A study of orchestral and band instruments by classification. The range capabilities and limitations, timbre, transposition, etc. Practical experience in scoring for various combinations of instruments from trios to full orchestra and band. *Prerequisites:* MUST 3213, 3214 and four semester hours, or equivalent, of class instruments.

2415 Pedagogy of Music Theory (2-0)

A study of philosophies of music theory in modern thought as exemplified in published texts, and a development of a pedagogical framework. *Prerequisites:* MUST 2315 and permission of the Department Chairman.

Philosophy

203 Worrell Hall
(915) 747-5212

CHAIRMAN: Tony J. Stafford

PROFESSORS: Haddox, Hall

ASSOCIATE PROFESSORS: Robinson, Springer

B.A. Degree — Specific requirements for a Bachelor of Arts in Philosophy are Introduction to Philosophy (3103) and 24 advanced (3300-3400) semester hours of Philosophy. The following courses are required: Philosophy 3314, 3315, 3317 or 3318, 3335, 3451 and 3452.

Philosophy (PHIL)

3103 Introduction to Philosophy: Men, Movements and Ideas In Western Philosophy (3-0)

An examination of the thought of the principal men whose arguments have shaped Western tradition and institutions insofar as these have been characterized by a search for an understanding of reality, truth, goodness, justice and beauty.

3104 Logic (3-0)

A survey of modern logic including traditional logic, informal fallacies, sentential logic, quantification theory and inductive logic.

3109 Introduction to Chicano Thought (3-0)

This course takes the given socio-cultural and political phenomenon of Chicanismo and subjects it to critical analysis, examining some of the underlying premises and attempting to project possibilities. The focus is on group-identity and alienation, myth and Raza, traditional legacy and new values, machismo and stereotypes, language and world.

3205 Logical Analysis (3-0)

Logical analysis of evidence, diagnosis and choice in scientific, medical, legal and ethical reasoning using informal, symbolic or inductive logic as well as non-standard logics such as modal, temporal, multivalued or deontological logic.

3206 Ethics: Critical Appraisal of Human Conduct and Motivation (3-0)

An examination of some positions on moral value taken by various philosophers and their application to contemporary moral issues.

3208 Aesthetics: The Philosophy of Art (3-0)

An inquiry into the notions of aesthetic experience, creativity, criticism, and of art products such as drama, literature, painting, music, films, etc.

3213 Chicanos and American Thought (3-0)

After an analysis of the intellectual heritage (pre-Hispanic, Spanish and Mexican) of the present-day Chicano, contemporary Chicano value orientations are compared and contrasted with such orientations in American society.

3220 Philosophies of Civilization I (3-0)

An investigation of the cultural aims and interests that define social activities in the major epochs of the Anglo-European and oriental traditions from their origins in myth, to the period of the scientific Renaissance in the West and the eleventh century in the East.

3221 Philosophies of Civilization II (3-0)

A continuation of 3220 which carries the development up to the contemporary period.

General Prerequisite: Junior standing for all 3300 and 3400 level courses.

3302 Reasoning About Ethical Values (3-0)

After a presentation of the principles of semantics and formal logic, and the rules of evidence, and inquiry, critical analyses of selected articles on contemporary moral issues will be undertaken. This course is designed to improve a student's ability to think critically about the ethical dimensions of human conduct.

3311 Philosophy of Science (3-0)

An analysis of the concepts and methods of both the natural and social sciences with consideration of their historical development and philosophical significance.

3312 Latin American Thought (3-0)

After a survey of philosophical developments in Latin America during the colonial period, during the struggles for independence, and in the nineteenth century, the thought of major twentieth century intellectual leaders in Latin America is examined. These include professional philosophers but also certain literary and political figures who expressed significant and influential philosophical positions.

3313 American Philosophers: Peirce, James and Dewey (3-0)

An investigation of the writings of three of America's most important philosophers, emphasizing their influence upon contemporary philosophical activity in America and Europe.

3314 Ancient Philosophy: The Origins of Western Thought (3-0)

Studies the origin and development of those ideas and problems which have come to characterize the philosophic tradition in the West as reflected in the thought of the Pre-Socratics, Socrates, Plato, Aristotle, and the Stoics.

3315 Medieval Philosophy: The Scholastic Synthesis (3-0)

Studies the philosophies of the medieval period of the Christian West. Philosophers to be examined include Augustine, Anselm, Aquinas, Duns Scotus, William of Ockham and others.

3317 Modern Philosophy: The Age of Reason and Doubt (3-0)

Focuses on rationalism (Descartes, Leibniz, Spinoza) and empiricism (Locke, Berkeley, Hume) as well as on Kant's attempt to synthesize these two traditions.

3318 Nineteenth Century Philosophy (3-0)

Studies the reaction to Kant's attempted rejection of speculative philosophy in the thought of Fichte, Schelling, Hegel, Schopenhauer and Marx. Also examines the critical assault on these systems by Kierkegaard and Nietzsche.

3322 Philosophy of Religion (3-0)

Drawing upon western and non-western religions in ancient and modern forms, the philosopher of religion examines such subjects

as religious experience and expression, belief in, and the knowledge of God (or gods), and the functions of religious myths.

3325 Social Philosophy (3-0)

This course will consider such concepts as law, freedom, authority, justice, violence, revolution, etc., in their relevance to an understanding of extant forms of social existence.

3335 Twentieth Century Philosophy (3-0)

This course will consider the principal forms of contemporary philosophy, logical-positivism, linguistic analysis, existentialism, phenomenology and speculative philosophy. (Any one or several of these traditions will be stressed depending on the instructor. Consult the philosophy bulletin board for current offering.) May be repeated when course content varies.

3340 Oriental Philosophy (3-0)

A survey of some aspects of oriental philosophy, traditions and cultures concentrating on those of India and China.

3351 Violence and Non-Violence: Values in the Southwest (3-0)

An analysis of the philosophical principles underlying violent and non-violent means to social change, especially as regards Chicanos and native Americans in the Southwestern United States.

3402 Metaphysics (3-0)

Often called ontology or speculative philosophy, metaphysics studies the attempts to develop coherent sets of principles by which to understand comprehensive notions such as being and change, appearance and reality, God, freedom, mind and the universe.

3411 Epistemology: Belief, Perception and Truth (3-0)

Analysis of the leading philosophical positions regarding knowledge, its source, criteria and limits.

3451 Great Philosophers (3-0)

The life and work of one or more of the most influential philosophers will be the focus of this course. May be repeated when the course content varies.

3452 Problems in Philosophy Seminar (3-0)

The problem of knowledge, the meaning of persons, technological society, the nature of sexuality, and the new religious sensibility have been recent topics. May be repeated when the course content varies.

3453 Independent Study (3-0)

Student research under supervision of the staff. Permission of the instructor is required.

See the *Graduate Studies Catalog* for graduate courses.

Political Science

206 Benedict Hall
(915) 747-5227/5337

CHAIRMAN: Roberto E. Villarreal

PROFESSOR EMERITUS: Joseph Malchus Ray

PROFESSORS: Agor, Bath, Beasley, Graves, Kruszewski, Neighbor, Segal, Straus

ASSOCIATE PROFESSORS: Peterson, Price, Staudt, Villarreal, Webking

ASSISTANT PROFESSOR: Rodriguez

Major in Political Science

In addition to POSC 3110-3111, the major requires 27 semester hours in Political Science, including POSC 3239, which should be taken in the sophomore year. A minimum of 18 hours must be at the advanced (3300-3400) level, with at least one advanced course in each of the following subfields: American Political Processes, Public Law, International Relations, Comparative Politics, Political Theory and Thought, Public Administration. Each major must also complete a minor of at least 18 hours. The minor may be from another liberal arts discipline, from approved inter-disciplinary minors, or from approved disciplines in other colleges, and should be selected in consultation with the departmental Undergraduate Advisor.

Minors in Political Science

Three options are available to students majoring in other disciplines:

Political Science — 18 hours, including POSC 3239, one advanced course in each of three of the six subfields, and 6 additional hours in Political Science.

International and Comparative Politics — 18 hours, including POSC 3224, 3231 and 12 advanced hours from the International Relations and Comparative Politics subfields, but not more than 9 hours from one subfield.

Public Administration — 18 hours, including POSC 3250, 3421, 3438 and 3 courses from POSC 3322, 3340, 3351, 3412, 3427, 3440, and 3450.

Soviet and East European Studies Specialization

For students who wish to complete an education in Soviet and East European studies that is more thorough and rigorous than a minor, the Department of Political Science offers a major in Political Science with a specialization in Soviet and East European Studies. Students wishing to take advantage of this specialization should follow this plan:

1. Major in Political Science and include in the courses used to satisfy the requirements for the major, POSC 3224, 3231, 3324, 3335, 3338, 3343, and either 3411 or 3426.
2. Minor in Soviet and East European Studies (as described elsewhere in this catalog), substituting other core courses for POSC 3324 and 3338.
3. Satisfy the language requirement with RUSS 3201 and 3202.

Departmental Honors in Political Science

A candidate for departmental honors in Political Science will have demonstrated ability in Political Science, will, by the end of the junior year, have maintained an overall grade-point average of 3.0 and a grade-point average of 3.0 in Political Science courses, and will maintain those averages until graduation. The main requirement for departmental honors will be the satisfactory completion of an Honors Thesis based upon research in Political Science. The Thesis will be directed by a faculty member in Political Science who, together with another member of the Political Science faculty and a member of the University Honors Advisory Committee, will make up the Candidate's Honors Committee. That committee will judge the satisfactory completion of the thesis on the basis of an oral defense. Other faculty and outside referees may be consulted should the Committee deem it appropriate.

The candidate for departmental honors must request approval of candidacy during the second semester of the junior year. Depending upon the nature of the research project, the Chairperson of the Department of Political Science together with the Director of the Thesis shall determine whether the candidate should register for one or two semesters of POSC 3480 in order to complete the thesis. Other regulations, procedures, and dates for use by honors candidates are available from the Chairperson of the Department of Political Science. The Department retains the right to accept or not accept a student for candidacy for departmental honors, taking into consideration the number of applicants, the number of available faculty, and the competence of the individual student.

If the Thesis is successfully completed and defended, the notation of Departmental Honors in Political Science will be made on the student's diploma. Departmental Honors may be awarded with or without the award of other University Honors.

Courses Reserved for Non-Majors

Certain courses may, on a semester-by-semester basis, be specifically designated in the University's course schedule as "Not for Political Science Majors".

Political Science (POSC)

Courses for Undergraduates

POSC 3110-3111 fulfill the legislative requirements of the State of Texas for courses on the Constitutions of the United States and Texas and are prerequisite to all other political science course offerings.

3110 American Government and Politics (3-0)

A survey of the basic concepts used in the contemporary study of American national, state and local political processes and institutions.

3111 American Government and Politics (3-0)

A survey of contemporary American national, state, and local political processes and institutions, with emphasis upon the Constitutions of the United States and Texas. This course meets teacher certification requirements for out-of-state graduate students. *Prerequisite:* For undergraduates is 3110.

Of the 3200 level courses listed here, not more than three (3239 and two others) may be used to satisfy the 27 hour requirement for a major in political science.

3224 Comparative Political Systems (3-0)

An examination of theories and methods used in comparative political analysis with illustrative cases drawn from a variety of political cultures.

3231 International Relations (3-0)

The theory and practice of international relations with particular attention to the forces and processes contributing to conflict and cooperation among nations.

3235 Introduction to Political Theory (3-0)

An introduction to basic problems and concepts in political theory through the study of selected political classics.

3239 Scope and Methods of Political Science (3-0)

A survey of the scope and methodology of political science. An analysis and criticism of research in the field with emphasis on methods and techniques.

3250 Introduction to Public Administration (3-0)

A study of management processes involved in the accomplishment of the purposes of government; analysis of the structure and procedures of the administrative or executive branch of government, with particular reference to national, state and local governments in the United States.

For Undergraduates and Graduates

General Prerequisite: Junior standing for all 3300 or 3400 level courses.

AMERICAN POLITICAL PROCESSES**3320 Political Socialization and Political Culture (3-0)**

An analysis of the influence of cultural, psychological and social patterns on the nature of political orientations and political systems.

3321 Chicanos in American Politics (3-0)

Survey of the nature and role of the Chicano in the American political system.

3322 Urban Politics (3-0)

The American political process in its urban environment.

3325 The Party System (3-0)

An analysis of the nature and role of American parties and pressure groups and their impacts upon the political process.

3327 Legislative Politics (3-0)

A study of the legislative systems, organizations, and their politics, in the context of the role of legislatures in political systems.

3330 Public Opinion and Public Policy (3-0)

A study of the nature and formation of public opinion, its measurement, and the impact of public opinion on policy formation.

3341 The Presidency (3-0)

Examination of the office of the President in relation to the functions, roles, powers, and duties which have accrued to the office as it has developed in scope and authority from Washington to the present.

3345 Southwestern Border Politics (3-0)

An analysis of U.S. political behavior in the environment of the Southwestern Border.

3346 Women, Power and Politics (3-0)

This course focuses on the distribution of power between women and men in society and the political implications of that distribution.

3420 American Government and the Military (3-0)

An examination of civil-military relations in the United States, American military policy formation and administration; martial law, military government; state military forces; the doctrine of civil supremacy. Some comparisons will be made with civil military relations abroad.

3445 Advanced Studies In American Politics (3-0)

An examination of national politics and government through analysis of selected problems in contemporary American public affairs.

PUBLIC LAW**3328 Constitutional Law (3-0)**

A study, by use of court cases, of the allocation of governmental powers, with special emphasis on the national government, and an introduction to the judicial function and the American legal system.

3329 Law and Society (3-0)

An examination of the legal-judicial arrangements in the Western world and particularly the United States, with emphasis on the interaction of legal systems with society.

3332 Civil Rights and Liberties (3-0)

A study of the limitations on governmental power in the United States, with primary emphasis on civil and political rights. *Prerequisite:* Political Science 3328 or permission of the instructor.

3427 Administrative Law and Regulation (3-0)

The study of the law as it affects public officials and agencies in their relations with private citizens and the business community. Attention is given to appropriate case materials and regulatory practices.

3429 Philosophy of Law (3-0)

A study of the origin, nature and development of law. The philosophical explanation of law as propounded by the various jurisprudential schools.

INTERNATIONAL RELATIONS**3331 International Organization and Administration (3-0)**

The development of the machinery and procedure of international government for the settlement of international disputes.

3338 Soviet Foreign Policy (3-0)

A study of the objectives, methods and results of Soviet foreign policy.

3343 Foreign Policy of the United States (3-0)

A study of the structures and processes of United States foreign policy decision-making.

3347 Foreign Policies of the Latin American States (3-0)

The role of the major Latin American states in world affairs with emphasis on Latin America-U.S. relations and political, economic, and sociocultural relations between the Latin American states.

3411 Political Geography (3-0)

Study of behavior and interactions among politically organized territories in their geographic context.

COMPARATIVE POLITICS**3324 Soviet and Eastern European Politics (3-0)**

A survey of contemporary Soviet and Eastern European politics set in an ideological and historical framework. The role of the party in each country examined in the setting of labor, management, the army, agriculture and nationality problems.

3326 Western European Politics (3-0)

A comparative analysis of the political systems of the major Western European powers and selected minor powers. Emphasis on political culture and the impact upon political institutions and functions.

3333 Problems In Latin American Government (3-0)

A study of the nature and scope of problems in the political development of Latin American nations.

3337 State and Society (3-0)

The study of the state and distribution of power in different societies. Topics include classical theories of the relationship between the state and society, growth of the state sector in modern societies, functions of the state, and studies of distribution of community, national and international power.

3342 Third World Politics (3-0)

The study of political cultures, interest groups, political parties, processes and structures of Third World areas. Specific areas to be studied will be selected by the instructor. Course may be repeated for credit with approval of the Chairman of the Department.

3426 Communist World: Polycentrism (3-0)

An analysis of ideological and programmatic conflict in the context of centrifugal and centripetal forces within the Communist world today.

3444 The Political System of Mexico (3-0)

An examination of political process and institutions within the social, economic and cultural environment of political development in Mexico.

POLITICAL THEORY AND THOUGHT**3310 The American Constitution: Two Hundred Years Later (3-0)**

An analysis of America's founding document and its evolution over two hundred years. Course offered in conjunction with the U.S. Constitution bicentennial celebration.

3334 Western Political Heritage I (3-0)

A study of the ideas of the major political philosophers of the ancient and medieval periods.

3335 Western Political Heritage II (3-0)

A study of the ideas of the major political philosophers from the Renaissance through the nineteenth century.

3336 American Political Thought (3-0)

A study of American political thought from the colonial period to the present.

3344 Democracy In America (3-0)

The development of American democratic theory and its relation to contemporary political problems and challenges.

3435 Contemporary Political Thought (3-0)

The ideas of contemporary political thinkers concerning the great modern issues of democracy; dictatorships, industrial order, and the political needs of the developing peoples. Emphasis also will be placed upon the process of political theorizing.

PUBLIC ADMINISTRATION**3340 Public Policy Analysis (3-0)**

Issues and techniques in the analysis of public decision-making and implementation.

3351 Municipal Planning Administration (3-0)

History, principles and theories of urban growth, planning, and development with emphasis on public policy, and the administrative and legislative processes.

3412 Technology and Public Policy (3-0)

An examination of the relationship of technology to governmental policy. Special attention will be given to problems of population, the natural environment and the use and conservation of energy.

3421 Urban Administration (3-0)

The organization and administration of urban government in the United States.

3438 Administrative Theory (3-0)

Emphasis is placed on administrative decision-making, leadership, supervision, communications and control in public and private organizations.

3440 Comparative Administrative Systems (3-0)

A comparative analysis of the major administrative systems of the world.

3450 Internship in Public Administration (3-0)

This course is open to seniors and graduate students with the approval of the Chairman of the Department. It is a work-study program in which the student is assigned two days (or 16-20 hours) each week to a governmental agency. Normally open only to students interested in professional preparation in Public Administration.

GENERAL

3390 Special Topics in Political Science (3-0)

An examination of selected problems in Political Science. Course may be repeated for credit when topics vary. The course is reserved for non-majors.

3410 Readings in Political Science (3-0)

3480 Undergraduate Research in Political Science (3-0)

A research and writing experience for undergraduates in Political Science. An intensive investigation into the foundations of Political Science with emphasis on research.

See the *Graduate Studies Catalog* for graduate programs and courses.

Psychology

212 Psychology Building
(915) 747-5551

CHAIRMAN: Randolph H. Whitworth

PROFESSORS: Coleman, Devine, Goggin, Himmelstein, Moss

ASSOCIATE PROFESSORS: Barrientos, Hosch, Lucker, Miller, Whitworth

ASSISTANT PROFESSOR: Sands

The Psychology Department offers two programs leading to the Bachelor's Degree.

B.S. Degree — Recommended for students who intend to pursue graduate work in psychology. Required courses are:

Major. 30 hours (15 advanced) including 3101, 3103, 2321-1321, 2322-1322, 3417 and at least one of the following: 3309, 3348, or 3420.

Minor. 18 hours (6 advanced) selected from Biological Sciences, Chemistry, Engineering, Mathematics, or Physics.

Foreign language, while not required, is strongly recommended.

For additional requirements, see Bachelor of Science degree plan in the College of Science section.

B.A. Degree — Recommended for students who do NOT intend to pursue graduate work in psychology. Specific requirements are:

Major. 30 hours (15 advanced) including 3101, 3103, and 2321-1321 or 2322-1322.

Minor. 18 hours (9 advanced). Minors may be chosen from any of the areas listed under the Bachelor of Arts degree plan.

Minor in Psychology — 18 hours (12 advanced) including 3101, 3103, and 2321-1321 or 2322-1322.

For additional requirements, see Bachelor of Arts degree plan.

Departmental Honors in Psychology

A candidate for departmental honors in psychology will have demonstrated ability in psychology, will have maintained grade point averages of 3.0 overall and in psychology by the end of the junior year, and will maintain these averages until graduation. The candidate may be enrolled in either the B.S. or B.A. degree plan in psychology. The main requirement for Departmental Honors will be the satisfactory completion of the honors thesis which will be judged by the thesis-research director in conjunction with the Honors Committee.

The candidate for departmental honors must request approval of candidacy during the second semester of the junior year. The Department of Psychology reserves the right to accept or not accept a qualified student, taking into consideration the number of applications, the number of available faculty, and the competence of an individual student. The accepted honors candidate will enroll in PSYC 3452 during both semesters of the senior year, and will have accumulated a total of 6 hours of 3452 credit on completion of the honors program. Other regulations, procedures and dates of use by honors candidates are available from the Chairperson, Department of Psychology.

Psychology (PSYC)

For Undergraduate Credit Only

General Prerequisites: PSYC 3101 is prerequisite for all psychology courses, with the exceptions of PSYC 3103 and 3204. Junior standing for all 3300 and 3400 level courses.

3101 Introduction to Psychology (3-0)

A survey of basic principles in general psychology.

3103 Statistical Methods (3-0)

A study of the basic concepts of descriptive and inferential statistics as applied to research in the behavioral sciences. Topics may include descriptive statistics, experimental design, correlation, analysis of variance, and non-parametric tests. Required of all psychology majors.

3202 Social Psychology (3-0)

The study of the individual in the social context. Consideration of topics such as social cognition, person perception, nonverbal communication, social influence, attitudes, presocial behavior, aggression, and applied social psychology.

3204 Psychology of Adjustment (3-0)

A study of the individual's psychological adjustment to life, including childhood, adolescence, and adulthood. No prerequisite.

3205 Psychology of Human Sexuality (3-0)

A study of human sexuality on a broad range of levels. Topics will include the biological and hormonal factors that affect sexual behavior, developmental aspects, sexual differentiation, various types of sexual behavior, sexual dysfunction, cultural differences, and a comparison of sex-related differences in abilities. No prerequisite.

3206 Psychology of Personality (3-0)

A study of the normal personality. Includes such topics as biological and social determinants of personality; appraisal of personality; and reactions to anxiety, frustration, and conflict.

3208 Computer Applications in Psychology (3-0)

A study of the applications of computers in the field of psychology. Topics include the use of computers in psychological testing, perceptual and cognitive factors affecting human performance with computers, and design of effective interactions between people and computers. *Prerequisite:* CS 4120 or equivalent.

3210 Life Cycle Development (3-0)

The study of the psychological development and adjustment of the individual through the life span.

3212 Introduction to Abnormal Psychology (3-0)

A review of historical approaches to the problems of abnormal behavior. Topics will include the dynamics of abnormal behavior, its classification, symptomatology, and treatment.

3220 Industrial Psychology (3-0)

An introduction to the principles, techniques, and theories of psychology applied to the industrial setting.

3302 Theories of Personality (3-0)

A study of major systematic positions, i.e., Freud, Lewin, Cattell, etc. Major emphasis is put on the various theoretical interpretations of human dynamics.

3304 Differential Psychology (3-0)

A survey of the psychological principles and methods of investigating individual and group differences.

3306 Abnormal Child Psychology (3-0)

The study of children whose development deviates significantly in the mental, emotional or social areas of functioning. Factors contributing to these deviant patterns of development will be discussed as well as current theoretical explanations of these problems.

3309 History and Systems of Psychology (3-0)

A review of the main systems and schools of psychology since 1879. The main assumptions of Structuralism, Functionalism, Psychoanalysis, Behaviorism, Gestalt Psychology, Physiological Psychology, Cognitive Psychology, Information Theory, and current trends are comparatively examined.

3315 Psychology and the Law (3-0)

A review of the relationship of psychology to the criminal justice system. Topics may include an examination of the premises of criminal responsibility, psychological testimony in court, and psychological evaluation and management of public offenders, including juveniles and prison populations.

3321 Experimental Psychology: Learning (2-2)

An introduction to basic concepts of learning and contemporary methods used in experimental psychology. *Prerequisite:* PSYC 3103. Concurrent registration in PSYC 1321 is required.

3321 Laboratory for Experimental Psychology: Learning (0-2)

Laboratory Fee: \$10.

3322 Experimental Psychology: Sensation and Perception (2-2)

An introduction to method and theory in contemporary experimental psychology. Emphasis is on method rather than on content. Topics emphasize the phenomena of sensation and perception. *Prerequisite:* PSYC 3103. Concurrent registration in PSYC 1322 is required.

3322 Laboratory for Experimental Psychology: Sensation and Perception (0-2)

Laboratory Fee: \$10.

3347 Behavior Modification (3-0)

A review of the application of experimental principles of learning for behavior change. Topics include: applications of classical, operant, and cognitive learning in clinical, educational, family, and socio-cultural settings.

3348 Psychology of Thinking (3-0)

An analysis of thought which will include principles and research approaches to information processing, concept formation, decision processes (judgment), and creative accomplishment. *Prerequisite:* PSYC 2321-1321 recommended.

For Undergraduates and Graduates

General prerequisite: Six advanced hours in psychology.

3401 Psychological Testing (3-0)

Introduction to and training in the administration, scoring, and interpretation of psychological tests. *Prerequisite:* PSYC 3103; PSYC 3417 recommended.

3410 Clinical Psychology (3-0)

A study of clinical problems, case study methods and discussion of psychological tests used in common clinical situations.

3412 Advanced Abnormal Psychology (3-0)

A study of the psychological factors contributing to pathological behavior. Emphasis will be placed on current research in genetics, biochemistry, and learning theory in the area of schizophrenia and neurotic processes. *Prerequisite:* PSYC 3212.

3416 Psychology of Language (3-0)

A study of the psychology of language and verbal learning. Will include psychological studies of language acquisition and reading.

3417 Advanced Statistics (3-0)

Further study of experimental design, analysis of variance, covariance, correlation, orthogonal polynomials, complex experimental designs, and non-parametric statistics. *Prerequisite:* PSYC 3103; MATH 4110-4111 and some knowledge of computer programming language recommended.

3424 Psychobiology (3-0)

A study of the physiological and biochemical basis of psychopathology in humans and models of psychopathology studied in animals. *Prerequisite:* Senior standing. Background in chemistry and physiology recommended.

3440 Advanced Industrial/Organizational Psychology (3-0)

A study of the current theories of individual behavior in complex organizations. Topics include the major areas of industrial psychology such as selection, placement, training procedures, and human factors research.

3441 Motivation and Emotion (3-0)

Defines motivational states in terms of physiological patterns, brain function, and psychological models from learning and personality theories. Evaluates the usefulness of these states as explanations of human behavior. *Prerequisite:* PSYC 2321-1321.

3452 Independent Research (3-0)

Independent student library or laboratory research under the supervision of a faculty member. Regular meetings and reports are required. May be repeated once when topics vary. *Prerequisite:* Permission of instructor of student's choice.

See the *Graduate Studies Catalog* for graduate programs and courses.

Religious Studies

Minor in Religious Studies

The Religious Studies Program is designed to meet the needs of students who are interested in learning more about religious concepts. The Program provides a broad, interdisciplinary framework within which students can take coursework to explore the nature of religion and its impact upon human culture, past and present. Courses are academic and non-sectarian in nature.

Students must complete 18 hours of courses approved by the Religious Studies Advisor, of which at least 12 must be at the upper-division level. Of the 18 hours, students must take 9 hours of core courses, selecting one course from each of the following categories:

1. History of Religion: HIST 3359; HIST 3331.
2. Nature of Religious Experience: PHIL 3322; RELI 3308; SOCI 3346.
3. Contemporary Religious Studies: RELI 3307.

The remaining 9 hours of courses needed for the concentration may be selected from among core courses not taken to satisfy the core requirement (courses listed below) or other courses approved by the Religious Studies Advisor. Non-Core courses: ANTH 3307; HIST 3340, 3365; RELI 3303 (or ANTH 3470), 3304, 3305, 3306, 3450; PHIL 3315, 3340; LATN 3301.

For additional information, contact the Dean, College of Liberal Arts, 747-5666.

Religion (RELI)

For Undergraduates and Graduates

Suggested prerequisite: Junior standing for all 3300 level courses.

3303 Archaeology of the Old Testament (3-0)

An examination of significant archaeological excavations in the Near East as they relate to the Old Testament.

3304 Christian and Other Religious Traditions in America

An historical study of religious traditions in the United States. This will be taught by a team of various professors expert in the distinctive traditions.

3305 Introduction to Christian Ethics (3-0)

A study of New Testament ethical teachings and their application to contemporary society.

3306 Survey of World Religions (3-0)

An introduction to the study of religion and an examination of primitive religion. Among the living religions, Zoroastrianism, Hinduism, Buddhism, Confucianism, Taoism, Shintoism, Judaism, and Christianity will be studied. *Prerequisite:* Sophomore standing.

3307 Contemporary Religious Studies (3-0)

This course will examine various contemporary religious ideas, expressions, forms, practices, and issues. The specific content of the course may vary from semester to semester, but the course will emphasize religious aspects of contemporary thought and society.

3308 Psychology of Religion

This course will explore the relationship between psychology and religion, examining major psychological and religious theories of human personality, behavior, and health. Topics such as child development, maturation, conversion, guilt, experience of the Holy, sexuality, emotional and psychosomatic illness, and others will be studied from both psychological and religious points of view.

3350 Special Topics in Advanced Biblical and Religious Studies (3-0)

This course will examine one of the following special topics in advanced biblical and religious studies each semester. *Prerequisite:* Senior standing or permission of instructor.

1. The Pentateuch (Torah, first 5 books of the Bible and related materials).
2. Hebrew Prophets (a study of the Old Testament prophets and related materials).
3. Poetical and Wisdom Literature of the Old Testament (a study of the books of Job, Psalms, Proverbs, Ecclesiastes, and others, plus related materials).
4. Biblical Teachings on Sexuality, Marriage, and the Home.
5. The Non-Pauline Epistles (those letters in the New Testament not written by Paul).
6. Jewish and Christian Apocalyptic Literature (Books of Daniel, Enoch, Revelation, other sources).
7. Church and Society in America (interaction between the Church and major social issues and movements, such as the civil rights movement, women's movement, Third World and Liberation theology).
8. Readings in Jewish and Christian Origins (the writings of some of the Rabbis and early Church Fathers, other extra-Biblical writing such as Dead Sea Scrolls, etc.).
9. Historical Studies in Major Religious Thinkers (historical context and thought of key figures such as Augustine, Aquinas, Luther, Calvin, Schleiermacher, Barth, Tillich, Niebuhr, etc. Primary sources).
10. Hispanic Devotional Piety and Cultural Alienation. An examination of devotional practices by Hispanics in the Southwest as a way of dealing with cultural alienation in the context of an Anglo-dominated society. This will include analysis of socio-political, economic, educational, geographic, and cultural aspects of religious beliefs of Southwest Hispanics as they relate to normative Christian standards of belief and worship.

Social Work

102 Old Main
(915) 747-5740

CHAIRMAN: Howard Daudistel
DIRECTOR: David Iacona-Harris
ASSOCIATE PROFESSOR: Iacona-Harris
ASSISTANT PROFESSOR: Rosenberg

Bachelor of Social Work

The BSW program offers a major related to a professional career in Social Work, and students electing this degree must satisfy the general requirements of the College of Liberal Arts for the BA degree. Specific requirements for the degree are 33 hours in Social Work, including SOWK 4101, 3102, 3201, 3203, 3302, 3320, 3376, 3377, 4475 and 4476. Unless otherwise noted, SOWK 4101 is a prerequisite for all other courses in Social Work. Exceptions to this must receive permission from the director.

Social Work (SOWK)**4101 Introduction to Social Welfare (3-1)**

An exploration of the range and characteristics of the human ser-

vice delivery system with particular emphasis on the social work profession. This career-oriented, educational experience will provide speakers from local social agencies, structured field visits and observation of social agencies and services.

3102 Social Policy and Services I (3-0)

An initial examination of issues related to social service policies and human service delivery, including a history of their development in the United States. Field assignments will provide students an opportunity to examine current social issues, policies and selected social service delivery systems.

3201 Human Behavior and Social Environment I (3-0)

An integration of bio-psycho-social factors in human growth and development applicable to Social Work practices, with emphasis on normal growth and development in the life cycle.

3203 Research Methods in Social Work (3-0)

Provides an opportunity to obtain a working knowledge of various research methods that are utilized as everyday tools in Social Work practice and research.

3302 Social Policy and Services II (3-0)

A critical examination of current major issues in social policies and programs, including health, social security, public welfare, income maintenance. *Prerequisite:* SOWK 3102 or 3375.

3311 Community Organization (3-0)

A general survey of the history, current theories and review of methods and techniques used in community organization in relation to the delivery of human services.

3320 Human Behavior and Social Environment II (3-0)

An integration of bio-psycho-social factors in human growth and development applicable to Social Work practice, with emphasis on normal growth and development in the second half of the life cycle. An examination of the influence of community, organizational, and cultural factors in human development. *Prerequisite:* SOWK 3201

3350 Social Work Practice in Group Work (3-0)

Emphasis is placed on theories, concepts, and techniques of social work group work in a wide range of social work settings. This course includes not only the small group process, but also other group situations in which an understanding of group processes deepens the practice of social work. *Prerequisites:* Junior level standing, completion of SOWK 3376.

3360 Human Services for a Spanish Community (3-0)

Emphasis is placed on special needs of the Spanish-speaking population in El Paso/Juarez metropolitan area. This course will focus on the following areas: language as a barrier to service delivery cultural implications for service delivery, international considerations for service delivery, cultural pluralist considerations for service delivery, community organization with groups in Spanish-speaking communities. *Prerequisite:* Junior standing.

3375 Social Welfare as a Social Institution (3-0)

An in-depth analysis of the scope of social welfare institutions, including general attitudes, programs, and policies. The major area of analysis will be from a beginning level administrative base.

3376 Methods of Social Work Intervention I (3-0)

A generalist approach to the major methods employed by social workers to help individuals, families and small groups. Special emphasis will be placed on the opportunity for development of communication, assessment, and problem solving skills. *Prerequisite:* SOWK 3201 or consent of instructor, or program director, or advisor

3377 Methods of Social Work Intervention II (3-0)

An integration of material presented in Social Work 3376 with special work models and practice theories. Assignments require students to use their skills in field work settings. Special emphasis on poverty and minority groups. SOWK 3377 should be taken concurrently with SOWK 4475. *Prerequisite:* SOWK 3376, or consent of instructor, or program director or advisor.

3401 Advanced Seminar: Special Issues (3-0)

Professional concerns and issues of social work will be selected by the instructor dependent on student needs. *Prerequisite:* Consent of instructor.

3440 Independent Study (3-0)

Independent study in an area which is too specialized to offer as an organized class. Supervised individual reading and research leading to development of a major paper or report. *Prerequisites:* 9 hours of advanced course work in Social Work and consent of Director.

4475 Field Experience in Social Work (0-16)

A laboratory learning experience in selected social welfare agencies with weekly seminars. Students are assigned to specific agencies for the semester. *Prerequisites:* SOWK 3201, 3376 and 3377.

4476 Field Experience in Social Work (0-16)

A laboratory learning experience in selected welfare agencies with weekly seminars. Students are assigned to specific agencies for the semester. *Prerequisite:* SOWK 4475.

Sociology and Anthropology

102 Old Main
(915) 747-5740

CHAIRMAN: Howard Daudistel

PROFESSOR EMERITUS: Julius Rivera

PROFESSOR: Stoddard

ASSOCIATE PROFESSOR EMERITUS: Paul Wershub Goodman

ASSOCIATE PROFESSORS: Daudistel, Eyde, Gerald, Hedderson

ASSISTANT PROFESSORS: I. Brown, S. Brown

Major in Sociology

Specific requirements are 30 semester hours in Sociology, of which 24 must be at the advanced (3300-3400) level, including SOCI 3101, 3311, and 3401. Sociology majors are encouraged to satisfy the BA degree mathematics/statistics requirement by taking SOCI 3212, PSYC 3103 or MATH 3280; however, if SOCI 3212 is used in this manner, it cannot also count toward the Sociology major or minor.

Major in Anthropology

Specific requirements are 30 semester hours in Anthropology, of which 18 must be at the advanced (3300-3400) level. ANTH 3101 and 3102 are required, plus either 3301, 3303 or 3304 and 3306 or 3480. ANTH 3217, 3220, 3310, 3318 and 3319 are strongly recommended. No more than 6 hours of field work may be counted toward the major.

Minor in Sociology

18 semester hours of Sociology, of which 9 must be advanced level, including SOCI 3101, 3311, and 3401, are required.

Minor in Anthropology

18 semester hours of Anthropology, of which 9 must be advanced level, including ANTH 3101 and 3102, plus either 3301, 3303 or 3304 and 3306 or 3480.

Sociology (SOCI)

For Undergraduates Only

Unless otherwise noted, SOCI 3101 is a prerequisite for all other courses in Sociology. Exceptions to this must secure permission from the Department Chairman or Undergraduate Advisor or instructor.

3101 Introduction to Sociology (3-0)

Nature and scope of sociology, its terminology and concepts; study of social processes, social institutions, development of society and characteristics of group life.

3102 Social Problems (3-0)

A study of selected social problems in our society, including causes, interrelationships, and programs of amelioration. *Prerequisite:* None; however, Sociology 3101 is recommended.

3212 Measurement and Inference in Social Research (3-0)

Sociological factors and their measurement, development and use of scales, assumptions underlying the use of statistical models in analysis of social data, application and limitations of statistical analysis.

3215 The Sociology of Marriage and the Family (3-0)

The historical development, current problems and prospects of the American marriage and family institutions. *Prerequisite:* None; SOCI 3101 is recommended.

3258 Chicanos in the Southwest (3-0)

Introductory course to major themes in Mexican American studies; cultural pluralism, bilingualism, biculturalism, ethnicity and race, assimilation, cultural nationalism, folk culture. *Prerequisite:* None in Sociology.

3259 Chicanos and American Society (3-0)

Analysis of Chicano experiences in selected institutions such as schools, churches, governmental structures, military and mass media. *Prerequisite:* None in Sociology.

For Undergraduates and Graduates

3301 Sociology of Educational Institutions (3-0)

Analysis of the social processes and interaction patterns in educational organizations; the relationships of the school to such aspects of society as social class and power; social relationships within the school; formal and informal groups; school culture; and the roles of teachers, students and administrators.

3303 Sociology of Urban Life (3-0)

Analysis of urban and rural social systems, their differences and similarities, using the comparative approach in studying aspects of structure and organization.

3306 Comparative Social Systems (3-0)

A cross-cultural comparative study of marriage, family life, kinship, and non-kinship relations with reference to classical ethnographic accounts and theoretical perspectives. *Prerequisite:* None in Sociology. *Recommended Background:* ANTH 3102.

3307 Folk Religion and Magic (3-0)

A comparative study of the religions and ideologies of, especially, non-literate peoples, utilizing anthropological perspectives. The topics will be discussed from the standpoints of ecological adaptation, social function, and psychological meaning. *Prerequisite:* None in Sociology. *Recommended Background:* ANTH 3102.

3311 Methods of Research (3-0)

Basic procedure and methodology of sociology as applied by the profession to various areas of social investigation.

3318 Folk Societies of Eurasia and Africa (3-0)

A survey of the traditional societies and cultures of Europe, Africa, Asia, and the Pacific. Emphasis will be on culture areas and on particular societies and cultures as the results of differentiation, diffusion, and adaptation. *Prerequisite:* None in Sociology. *Recommended Background:* ANTH 3102. (Same as ANTH 3318.)

3319 Indian Societies of the Americas (3-0)

A survey of the Indian societies and cultures of North, Central, and South America, and the Caribbean. Emphasis will be on culture areas and on particular societies and cultures as the results of differentiation, diffusion, and adaptation. *Prerequisite:* None in Sociology. *Recommended Background:* ANTH 3102. (Same as ANTH 3319.)

3322 Collective Behavior and Social Movements (3-0)

Analysis of unstructured social behavior, including crowds, riots, revivals, fads, public opinion and social movements.

3327 Majority/Minority Relations in the United States (3-0)

A study of the racial and ethnic group relationships in the U.S. concentrating on the dynamics and consequences of prejudice, discrimination, and related factors.

3333 Juvenile Delinquency (3-0)

An investigation of the social and legal definitions of juvenile delinquency; major theories of juvenile deviancy; the social system of the gangs; factors contributing to apprehension, conviction, detention and parole; assessment of present and potential prevention programs.

3336 Multi-Cultural Society in the Southwest (3-0)

A comparison of values, institutions and ethnic groups of the American Southwest, emphasizing cultural variation and fusion along the U.S.-Mexican border region.

3341 Special Undergraduate Topics (3-0)

Special topics of current interest in Sociology. May be repeated for credit when topic varies. Topics may include, for example:

—La Chicana

The role of the Chicana in the family and the community as well as Chicanos' participation in the labor force and liberation movements.

—Women in Society

Women in social institutions such as the family, education, economy and politics in American society as well as their images in popular culture.

3342 Sociology of Deviance (3-0)

A study of deviations from social norms which encounter disapproval and to which theory and concepts derived from sociology and social psychology may be applied. Includes a study of deviators and societal reactions to them.

3346 Sociology of Religion (3-0)

A study of the role of religion in society and its relation to other social institutions. Emphasis will be placed on the changing role of religion and its orientation to societal values.

3348 Criminology (3-0)

Theories, causes, characteristics, and social function of crime in our society. Methods of prevention and reduction of crime will be analyzed.

3352 Sociology of Poverty (3-0)

A systematic survey of the causes of poverty, the characteristics of group living in poverty, problems of dealing with impoverished peoples and the reduction of poverty.

3357 Sociolinguistics (3-0)

Language variables and sociological correlates, a review of current research, theories and applications. *Recommended Background:* LING (or ANTH) 3220.

3361 Mexican Folk Society and Culture (3-0)

A discussion of the modes of production, economics, social and political structures, values, and religion, and ideology of the common people of Mexico, especially village Mexico. Contemporary Indian and traditional and modernizing Mestizo communities will be considered. The emphasis will be upon villages and towns, but anthropological approaches to urban situations will also be touched upon. *Prerequisite:* None in Sociology. *Recommended Background:* ANTH 3102.

3362 Medical Sociology (3-0)

Cultural factors in medical beliefs and practices; professionalization of medical practitioners; group factors in medical practice and medical care programs.

3363 Sociology of Aging (3-0)

Sociological examination of selected problems affecting the aged in the United States. Topics include the health, economic, political, family, religious, leisure, housing, interpersonal and community integration of the aged.

3370 Sociology of Sex Roles (3-0)

Sociological evaluation of the emergence of sex roles and relationship between such roles and social status, class, and power. Problems of Women's Liberation, changing roles, and the variable effects of socialization for role taking and role making will be discussed.

3380 Society and Personality (3-0)

The social aspects of interpersonal interaction in the socialization process in small and complex groups.

3381 Complex Organizations (3-0)

Examines structures, processes, interactions and human problems of modern organizations. Classical and contemporary sociological theories of organizations are compared. Issues regarding organiza-

tional authority; change, conflict; control, cooperation; division of labor, efficiency, goals, and relationships with consumer-clients are studied.

3401 General Sociological Theory (3-0)

Study of the major concepts of general sociology as these have been developed by contemporary sociologists and by the founding fathers of the field. *Prerequisites:* SOCI 3101 and nine hours of advanced sociology.

3425 Social Class and Stratification (3-0)

Social class differences in static and dynamic societies. Comparison of social stratification in the U.S. and U.S.S.R. Social class theories of Marx, Weber and Michel. Measurement of social mobility in the U.S., U.S.S.R., and other societies.

3447 Population Analysis and Problems (3-0)

Statistical analysis of the population of the world, the United States, and the Southwest. Study of fertility, mortality, and migration patterns and their social consequences.

3455 Social Change and Social Action (3-0)

Structure and functional requisites for effecting social change; latent consequences of unplanned change; resistance and implementation of social action programs; impact of technological change on social systems.

3490 Independent Study

Independent study in an area which is too specialized to offer as an organized class. Supervised individual reading and research leading to development of a major paper or report. *Prerequisites:* 12 hours of advanced sociology and consent of Department Chairman, advisor or instructor.

See the *Graduate Studies Catalog* for graduate programs and courses.

Anthropology (ANTH)

For Undergraduates Only

3101 Introduction to Physical Anthropology and Archeology (3-0)

Introduction to the evolution of the human adaptive system with particular attention to the somatic and technological components. The biological development of man, from 3.5-million-year-old Lucy to modern Homo sapiens, is discussed and correlated with developments in stone and bronze tools, dwelling types, social groupings, political organization, etc. This course is not prerequisite to 3102.

3102 Introduction to Social/Cultural Anthropology (3-0)

Introduction to the evolution of human behavioral systems with particular attention to the social and cultural, or ideational components. The variety of types of societies and ideologies is discussed together with the ecological situations to which they are adapted. *Prerequisite:* None.

3205 Chicanos and Their Culture (3-0)

Considers the emergence of distinctive Mexican-American world views and their expressions in daily life, folk lore, folk art, folk performance, and oral history.

3211 Indians of the Southwest (3-0)

A study of the economy, social life, religion, mythology, language, dwellings, and tool types of living Indian groups such as the Apache, Papago, Yuma, Navajo, Hopi, Zuni, and Rio Grande Pueblos. The influence of these Indian cultures on Hispanic and Anglo cultures in the area will also be discussed.

3217 Old World Archeology (3-0)

A survey of the development of human technology from the earliest known bone, horn, and dental tools through hand axes, and blade and microlith tools, to metal types of the Bronze and Iron Ages. Social and cultural interpretations will be made where possible. *Recommended Background:* ANTH 3101.

3220 Introduction to Linguistics (3-0)

(Same as LING 3220.) *Prerequisite:* None in Anthropology.

6247 Archeology Field Work (Summer Field School) (2-4)

A five-week summer course in excavation and laboratory methods and techniques, including the formulation of hypotheses for field tests and practical experience in recovering the test data through archeological survey, excavation, and laboratory analysis. Trips will be taken to visit other field schools and sites in the Southwest. Weekly progress report required. Twenty-eight hours of field work and seven hours of lecture and lab work per week. Transportation fee will be charged.

3258 Chicanos In the Southwest (3-0)

Introductory course to major themes in Mexican American studies; cultural pluralism, bilingualism, biculturalism, ethnicity and race, assimilation, cultural nationalism, folk culture. *Prerequisite:* None in Anthropology.

3259 Chicanos and American Society (3-0)

Analysis of Chicano experiences in selected institutions such as schools, churches, governmental structures, military and mass media. *Prerequisite:* None in Anthropology.

For Undergraduates and Graduates

3301 Primate Behavioral Systems (3-0)

A comparative study of the morphology, sociology, technology, and ideology of the higher primates, including man. Attention will be directed to the adaptive behavior of individuals and groups of cooperating individuals as they manipulate one another and the environment in order to satisfy their basic needs. *Recommended Background:* ANTH 3101 and 3102.

3303 Ecological Anthropology (3-0)

Uses of ecological principles and models in anthropological description and explanation. Human societies as parts of larger ecosystems. Folk models of the eco-system will be discussed. Economic problems of production, distribution, and consumption in non-Western societies. *Recommended Background:* ANTH 3102.

3304 Physical Anthropology (3-0)

This course will focus on the evolution of the human body. Topics will include the place of humans in the environment, biological variation, and adaptation. *Recommended Background:* ANTH 3101.

3305 Mexican Archeology (3-0)

The prehistoric and protohistoric development of social systems in Meso-America from the advent of Early Man through the Olmec, Maya, and Aztec. Attention will be directed to the interactions between environment, demography, technology, social organization, and ideology that precipitated the rise of Meso-American civilizations. *Recommended Background:* ANTH 3101 and 3102.

3306 Comparative Social Systems (3-0)

A cross-cultural comparative study of marriage, family life, kinship, and non-kinship relations with reference to classical ethnographic accounts and theoretical perspectives. *Recommended Background:* ANTH 3102.

3307 Folk Religion and Magic (3-0)

A comparative study of the religions and ideologies of, especially, non-literate peoples, utilizing anthropological perspectives. The topics will be discussed from the standpoints of ecological adaptation, social function, and psychological meaning. *Recommended Background:* ANTH 3102.

3310 Southwestern Archeology (3-0)

The development and characteristics of prehistoric Indian societies, from the Elephant Hunters to the Pueblos, is considered with particular attention to the Mogollon, Hohokam, Anasazi, and Casas Grandes areas. Ties of the area to nuclear Meso-America will be discussed. *Recommended Background:* ANTH 3101.

3318 Folk Societies of Eurasia and Africa (3-0)

A survey of the traditional societies and cultures of Europe, Africa, Asia, and the Pacific. Emphasis will be on culture areas and on particular societies and cultures as the results of differentiation, diffusion, and adaptation. *Recommended Background:* ANTH 3102.

3319 Indian Societies of the Americas (3-0)

A survey of the Indian societies and cultures of North, Central, and South America, and the Caribbean. Emphasis will be on culture areas and on particular societies and cultures as the results of differentiation, diffusion, and adaptation. *Recommended Background:* ANTH 3102.

3324 Introduction to Ethnomusicology (3-0)

General introduction to the relationships between music and culture with special emphasis upon the music of Asians, Africans, and Native Americans. Listening, ethnomusicological activities. Open to all. Same as Music Literature and History (MUSL) 3324.

3336 Multi-Cultural Society In the Southwest (3-0)

A comparison of values, institutions and ethnic groups of the American Southwest, emphasizing cultural variation and fusion along the U.S.-Mexican border region. Same as SOCI 3336.

3343 Archeology of North America (3-0)

Hopewell and Adena Mound Builders, Plains Farmers, Early Man, and other pre-historic social systems in North America, exclusive of the Southwest, will be discussed. *Prerequisite:* ANTH 3101 or permission of the instructor.

3361 Mexican Folk Society and Culture (3-0)

A discussion of the modes of production, economics, social and political structures, values, and religion, and ideology of the common people of Mexico, especially village Mexico. Contemporary Indian and traditional and modernizing Mestizo communities will be considered. The emphasis will be upon villages and towns, but anthropological approaches to urban situations will also be touched upon. *Recommended Background:* ANTH 3102.

3374 Folklore of the Mexican-American (3-0)

Same as ENGL 3374. *Prerequisite:* None in Anthropology.

3379 Independent Study (3-0)

Individual investigation of an area of anthropology that is not adequately covered by an organized class. Periodic meetings, reports and a major paper are required. *Prerequisite:* Permission of Department Chairman and instructor.

6447 Advanced Archeological Field Methods Work (Summer Field School) (3-3)

Same as ANTH 6247 except that students registering for this course will be required to assume greater responsibility and/or produce a term paper on some aspect of the field work or related topics. *Recommended Background:* ANTH 6247. Transportation fee will be charged.

4460 Laboratory Methods In Archeology (0-6)

Methods in extracting from archeological remains data relative to population density, subsistence base, activity patterns, social organizations, etc., will be explored at both the theoretical and practical levels. Inductive and deductive methodologies will be employed to formulate hypotheses to be tested by statistics. Course will be taught as two 3-hour lecture labs. *Prerequisite:* Open only to majors in anthropology or by permission of the instructor.

3465 Museum Fundamentals (2-8)

An introduction to practical aspects of museum work, including organization and display of exhibits, care of collections, communication with visitors, and other museum tasks. Lectures will be combined with opportunities for solving concrete problems. *Prerequisite:* Consent of instructor.

3470 Studies in Anthropology (3-0)

Subject matter will be announced each semester. May be repeated for credit when topic varies. Among the material that may be covered are the following: foraging bands; tribes; chiefdoms; states; peasant and plantation communities; the Navajos; the Tarahumaras; the archeology of missions, presidios, and haciendas; archeology theory; cultural resource management; lithic technology.

3480 Theory in Anthropology (3-0)

A discussion of the goals of anthropology with a critical review of current theory and methodology. *Recommended Background:* ANTH 3101 and 3102.

Theatre Arts

371 Fox Fine Arts
(915) 747-5146

CHAIRMAN: Charles E. Fensch
PROFESSOR EMERITUS: Robert Milton Læech
PROFESSOR: Wingate
ASSOCIATE PROFESSORS: Etheridge, Ronke
ASSISTANT PROFESSORS: Alkofer, Eastman

The theatre arts degree curriculum consists of a core of required courses which provide the student with a broad base of theatre arts knowledge and skills. Beyond the requirements, students may select elective options of specialized study in acting, directing, playwriting, design and theatre history. An extensive co-curricular play production program offers students the opportunity to participate in all aspects of production. On campus, plays are produced in the 435 seat University Playhouse and the flexible Studio Theatre. The production program regularly includes selections from theatre classics, contemporary plays, children's theatre, bilingual theatre, experimental theatre and original playscripts. In addition, there are touring theatre opportunities. All productions showcase student work under faculty guidance and direction.

Major in Theatre Arts: Students pursuing the BA degree with a major in Theatre Arts must take the following:

1. THEA 3103 and 1103;
2. THEA 3110, 3113, 3210, 4213, 3221, 3325, and 3332 or 3342;
3. 6 hours from THEA 3340, 3351, 3352, 3353; plus 6 advanced Theatre Arts hours selected in consultation with the advisor;
4. The Fine Arts requirement of the BA must be met with one 3-hour course in Art and one in Music.

Minor in Theatre Arts: The minor requires 18 semester hours, 12 of which must be advanced (3300-3400) level, including:

1. THEA 3113; plus one course from THEA 3110, 4213, 3215, 3221, 3222; plus four courses from THEA 3310, 3301, 4313, 3325, 3332, 3335, 3340, 3342, 3350, 3351, 3352, 3353, 3418, 3426, 3440;
2. The Fine Arts requirement of the BA must be met with one 3-hour course in Art and one in Music.

Theatre Arts (THEA)

For Undergraduates

1101 Voice and Articulation Laboratory (0-1)

This laboratory is required for students enrolled in THEA 3103. Practice in the skills of relaxation, respiration, phonation, resonance, and articulation through exercises and the use of recording equipment. May be taken twice for credit.

3103 Voice and Articulation (3-0)

A course designed to improve the student's speech. Includes the study of and personal application to the speech anatomy and the processes of speech, phonetics, and the major dialects of American English and stage diction. The required laboratory is THEA 1103. Credit will not be given for 3103 unless 1103 is taken and passed at the same time. May not be counted as a fine arts distribution requirement.

1111, 2111 Basic Theatre Practice (0-4) (0-8)

Play production experience in faculty directed drama productions. All cast and crew members of such productions are eligible to enroll for the appropriate number of hours of credit after consultation with the undergraduate advisor in Theatre Arts. This course may be taken only as a free elective.

3110, 3210, 3310, 3410 Theatre Co. & Production Process (0-12)

This is a sequence of courses through which the major drama productions of the season will be realized. Entering freshman drama majors should take THEA 3110 in their first semester.

3113 Introduction to Theatre (3-0)

Analysis of the principles and techniques involved in representing human experience in a play; the relationship of acting, directing,

staging, lighting, costuming, and other theatre arts to one another and to the written word. The course is designed to serve not only as an introduction to drama for departmental majors, but as a general survey for non-majors.

4213 Acting I (3-3)

A lecture-laboratory course in which a student may develop ability to analyze a character and create a role.

3215 Theatre Workshop Laboratory (0-9)

A practicum course giving the student experience in all phases of theatre production, and involving one or more major productions depending upon the University Theatre's production schedule. Open to all university students. May be repeated for credit. An elective course for Theatre Arts majors and minors.

3221 Stagecraft (3-0)

An introduction to theatre architecture, stage rigging, scenic construction, painting, hardware, shop tools, scene shifting mechanisms, and operating techniques.

3222 Makeup (3-0)

Study of the history of makeup, types and kinds of makeup, and techniques of application for stage, film, and television.

3290 Introduction to the Art of the Motion Picture (3-0)

Understanding and appreciating film as a unique medium for communication and artistic expression. Introduces students to a broad range of types of films. Basic theory presented in class. Films viewed in class and on campus and discussed in class.

3301 Readers' Theatre (3-0)

A production course open to all students to participate in the analysis, preparation, and presentation of play scripts and other literature using a variety of production methods. May be repeated once for credit.

4313 Acting II (3-3)

Detailed study of characterization and styles of acting through assignment of individual roles and group rehearsal of scenes. *Prerequisite:* THEA 4213.

3325 Directing I (3-0)

Analysis of the role of the director in contemporary theatre production. Students will be required to plan and produce a one-act play for presentation.

3332 Scene Design (3-0)

An introduction to the specific design needs of the performing arts, including scenic drafting, period ornament, scenic styles, decor, perspective sketching and rendering in watercolor. *Prerequisite:* THEA 3221.

3333 Methods of Teaching Drama (3-0)

Designed for the teacher of drama in the secondary school. Includes the study of methods of teaching and evaluating dramatic activities, curriculum design, practical foundations, conducting extracurricular drama activities.

3335 Chicano Theatre and Drama (2-4)

Examination of the Chicano and chicanismo through drama and theatrical presentations. Chicano theatre and drama is studied as literature, as a political statement, and as a social and ethnic phenomenon. Several short plays of the Chicano theatre are prepared for presentation to the public.

3336 Theatre in Spanish (2-4)

Study of a specific hispanic play each semester from literary and theatrical points of view. The play is mounted and staged, in Spanish, for the public. May be repeated once for credit.

3340 A History of Costume Design (3-0)

A study of costume from the earliest time to the present and its use on the stage. Practical experience in designing and executing costumes for actual production.

3341 Costume Production (3-0)

The study of costume technology including design analysis, pattern development, fabric selection and modification, and construction techniques. Offers experience in executing costumes for theatrical production.

3342 Lighting Design (3-0)

A history of lighting and an analysis of contemporary lighting practice as applied to theatre and television lighting including a study of lighting instruments, use of color media, control equipment, and designing for different staging and studio configurations.

3350 Creative Drama (3-0)

Methods of developing original dramatizations with children and creating plays from children's literature. Discussion of basic skills for the teaching of creative theatre and drama. Recommended for Education majors.

3351 History of the Theatre I: The Early Theatre (3-0)

Historical survey of theatre and drama from earliest times through the close of the Middle Ages.

3352 History of the Theatre II: Renaissance to 1800 (3-0)

Historical survey of theatre and drama from the beginning of the Renaissance to the close of the eighteenth century.

3353 History of the Theatre III: The Modern Theatre (3-0)

Historical survey of theatre and drama from the Romantic Movement to the present.

3354 The American Theatre (3-0)

Theatre in American life and American life in the Theatre. American society reflected in dramatic and theatrical traditions from its inception to the present.

3355 The Musical Theatre (3-0)

A survey of the American Musical Theatre as evolved since the mid-nineteenth century to the present. With the use of film-videos, recorded material and slides. This course will explore the historical and aesthetic contributions of the genre to the American theatre.

3356 Women In Drama (3-0)

This course will investigate the writings of feminist playwrights who are committed to the development and vision of women in the theatre. These dramatic works will be examined in light of the sociological and humanistic realities which are a part of contemporary American life.

3415 Practicum In Theatre (0-9)

Special group projects such as touring productions, staged readings of original scripts, and the like which are periodic formal adjuncts to the departmental summer or regular-term production seasons. *May be taken more than once. Prerequisite:* permission of the instructor.

3418 Playwriting (3-0)

Principles of writing for stage presentation.

3426 Directing II (3-0)

Study of techniques of direction in various styles, modes, and periods, together with analysis of the problems of the producer and theatre manager. *Prerequisite:* THEA 3325 or permission of instructor.

3440 Selected Topics In Drama and Theatre (3-0)

Special research and production projects — individual or group — under the supervision of a faculty member. *Prerequisite:* instructor's approval.

3442 Advanced Lighting Design (3-0)

An exploration of the historical developments in lighting design with an emphasis on contemporary use of elements of these styles in the production of period plays. Included will be an examination of current production styles for lighting proscenium, thrust, and arena stages as well as lighting design for dance. *Prerequisite:* THEA 3342 or permission of instructor.

See the *Graduate Studies Catalog* for graduate programs and courses.

Western Cultural Heritage

336 Liberal Arts
(915) 747-5508

DIRECTOR: David A. Hackett

PARTICIPATING FACULTY:

Art: Soriano

Communication: Johnson

English: Gladstein, Melendez-Hayes

History: Hackett, Schalk, Weber

Languages and Linguistics: Elerick, Kluck

Music: Fountain

Philosophy: Haddox, Hall

Political Science: Webking

Sociology and Anthropology: Eyde

The Western Cultural Heritage sequence (HUMN 3301, 3302, and 3303) is required of all B.A. students and is open to students from other colleges as well. The course sequence was developed by our Liberal Arts faculty, and its implementation has been supported, in part, by a three-year grant from the National Endowment for the Humanities Division of Education Programs (EM-20180-87).

The objective of the sequence is to promote the sort of awareness that will situate the student in his or her cultural environment (culture being that complex of aims, ideals, and interests that define and organize human social activity and its productions). An articulate understanding of western cultural heritage requires examination of the character and interrelations of the cultural interests of the fine arts, history, literature, philosophy, politics, religion, and science. The sequence is designed to foster such an understanding by focusing, in a carefully coordinated three-semester sequence, upon selected western epochs characterized by peculiarly intense activity in the various aspects of culture.

Through a combination of lecture and discussion, the Western Cultural Heritage sequence seeks to ensure that students receive a systematic, broad (but also intense) exposure to the thinkers, ideas, texts, and art works that have been produced by western civilization. The fundamental emphasis will be on ways of thinking about basic human questions. Such questions concern the nature of the state; the rights and responsibilities of individuals as citizens and members of the community; concepts of human nature; the human species as victim, antagonist, or part of nature; the supernatural; esthetics; technology; and epistemology.

Such questions as these will be explored by raising them in the context of pivotal epochs or focal loci in which interest in them has been demonstrably widespread. Although the sequence is structured chronologically in the broadest sense, attention will focus on selected moments of intense activity, from which vantage-points collateral lines of influence and ramification will be scrutinized.

Western Cultural Heritage (HUMN)

3301 Eastern Mediterranean Culture from ca. 2500 B.C. to ca. 200 A.D. (2-0)

This course will examine significant cultural developments in the ancient near east and classical Greece. It will focus on one or more pivotal loci, such as the period of the monarchy in Israel, the Periclean age in Athens, the Augustan epoch in Rome, or nascent Christianity, and will consider collateral developments as they flow into or out of the pivotal loci. Two-hours lecture, one-hour discussion per week. Required of all Liberal Arts majors. *Prerequisite:* English 3112.

3302 Western Mediterranean Culture from ca. 200 A.D. to ca. 1650 (2-0)

Building on themes developed in HUMN 3301, this course will examine cultural developments in medieval Europe and post-medieval Italy, England, and/or Spain. Pivotal loci might include the classical-Christian synthesis of Dante and Aquinas, the emergence of Renaissance culture in Italy, the Reformation and its Counter-reformation offshoots, and the Golden Age of Spain. Collateral developments will be approached as ramifications of the pivotal loci. Two-hours lecture, one-hour discussion per week. Required of all Liberal Arts majors. *Prerequisite:* HUMN 3301.

3303-Modern European and Atlantic Culture from ca. 1650 to the 20th Century (2-0)

Building on themes developed in HUMN 3301-02, this course will examine the emergence of contemporary western culture from its roots in late 17th-century Europe and the impingement of Enlightenment and 19th-century values on the Americas. Pivotal loci might include the emergence of the 'scientific method', the 'Christianizing' of the Americas, French and British neoclassicism, the Marx-Darwin-Freud triad, or the cultural ramifications of modern totalitarianism. Two-hours lecture, one-hour discussion per week. Required of all Liberal Arts majors. *Prerequisite:* HUMN 3302.

Women's Studies

303 Worrell Hall
(915) 747-5200

CONTACT: College of Liberal Arts

PARTICIPATING FACULTY:

Criminal Justice: Mahan

English: Gladstein, Marchino, Melendez-Hayes, Mortimer

Management: Case

Philosophy: Robinson

Political Science: Staudt

Women's Studies allows the interdisciplinary study of women's history, current status, and future options from an expanded perspective that integrates current information, research methodologies and conceptual approaches regarding women and women's issues into the existing disciplines.

Minor in Women's Studies

To complete a Women's Studies minor, students must earn at least 18 hours in courses approved for Women's Studies credit. At least 12 of those hours must be at the upper-division level. Core courses include WS 3200, ENGL 3360 (Women in Literature), HIST 3391 (History of Women), POSC 3346 (Women, Power and Politics), and SOCI 3370 (Sociology of Sex Roles).

A variety of other courses appropriate for the Women's Studies minor are taught regularly or as special topics in a number of departments. These include (but are not limited to) CRIJ 3400 (Women and Crime), ENGL 3301 (La Chicana), ENGL 3440 (Biography and Autobiography of the Female Experience), MGMT 3499 (Men and Women as Colleagues in Organizations), PHIL 3452 (Philosophy and Feminism), SOCI 3215 (Marriage and Family), SOCI 3349 (Family as a Social Institution), THEA 3356 (Women in Drama).

Women's Studies (WS)

3200 Introduction to Women's Studies (3-0)

This course focuses on the experience of women from the perspective of the social sciences and humanities. Students will be introduced to historical, cross-cultural, and contemporary issues relating to women's lives as well as to responses to these varied issues from the realms of both feminist theory and public policy.



Nursing
Allied Health Sciences
Medical Technology
Speech, Hearing & Language Disorders

Lynne B. Welch, Dean
Dorothy Corona, Assistant Dean

The College of **NURSING** & **ALLIED HEALTH**

Introduction

A baccalaureate nursing program was established at El Paso in 1970 under the administration of The University of Texas System School of Nursing. In 1976, the School of Nursing became an integral part of The University of Texas at El Paso and was organized as a College of Nursing. The Allied Health Program was transferred to the College in 1979, and shortly thereafter, the name was changed to the College of Nursing and Allied Health. The College offers an undergraduate nursing program leading to the Bachelor of Science in Nursing degree as well as Master of Science in Nursing program at the graduate level. These programs enjoy full accreditation by the National League for Nursing and are approved by the Texas State Board of Nurse Examiners. Allied Health programs are offered which lead to the Bachelor of Science in Allied Health, Bachelor of Science in Medical Technology, Bachelor of Science in Speech, Hearing and Language Disorders, and Master of Science in Speech Pathology and Audiology.

The Bachelor of Science in Medical Technology Program is accredited by the American Medical Association as recommended by the National Accrediting Agency for Clinical Laboratory Sciences to the Committee on Allied Health Education.

Students in Speech and Language may complete a program which enables them to be certified in Speech-Language Therapy by the Texas Education Agency.

The College is located approximately one mile from the main UT El Paso campus, at 1101 North Campbell Street, and is housed in a large, modern building which includes classrooms, laboratories, faculty offices, and lounges for both students and faculty. The Education Media Center facilitates independent learning by students through the use of audio-visual programs, programmed units, and computers. The Simulation Laboratory provides an opportunity for students to practice skills before direct contact with patients or clients in clinical settings.

The El Paso-Ciudad Juarez international border community, with a population of more than 1 1/2 million, provides a wide variety of clinical experiences for both students and faculty of the College. Hospitals and other health care agencies throughout the area are utilized for student and faculty clinical practice. In addition, the El Paso City-County Health Department and a number of voluntary agencies provide patient care opportunities for learning. Agencies such as the Pan American Health Organization, the U.S. Immigration and Naturalization Service, customs and consular offices on both sides of the border provide the student with unique learning experiences in the control and prevention of disease.

NURSING

General Information for Nursing Students

STUDENT AFFAIRS

It is the responsibility of the student:

1. To become familiar with and comply with regulations of the College of Nursing and Allied Health;
2. To keep the Dean's office and the Office of Admission and Evaluation informed of his or her current (1) local address, (2) telephone number, or where he or she may be reached, and (3) home address and phone number;
3. To be informed of general and special notices including examination schedules posted on the official bulletin board in the College;
4. To make arrangements for completion of all work and to meet the requirements for removal of incomplete grades; and
5. To assure that official communications, including requests for release of information to other institutions, be submitted in writing.

SPECIAL EXPENSES

Uniforms, lab coat, name pin, and identification patch are required dress for clinical practicum, at an approximate cost of \$175. Cost of books and supplies is approximately \$200 per semester.

STUDENT EMPLOYMENT

The College of Nursing and Allied Health assumes no responsibility for students employed in a health care agency. A student is personally responsible and liable for any activity participated in while employed. Professional liability insurance purchased by a student is valid in the student role, and not in the employment role (check individual policy). An individual who practices nursing illegally may jeopardize his/her future as a licensed professional. A student employed in an agency has responsibility, personally and professionally, to engage in only those activities which fall within the job description for non-professional workers, and has a responsibility to refuse to participate in activities which he or she has not been legally licensed to perform.

NURSING STUDENT ORGANIZATION

All students are eligible for membership in the Nursing Student Organization, which is a chapter of the Texas Nursing Students' Association and the National Student Nurse Association.

The Nursing Student Organization has goals consistent with those of the National Student Nurses' Association. Its purpose is to aid in the development of the individual student as a future health professional.

Nursing students are represented on campus committees and in campus activities involving the entire UT El Paso student body.

SIGMA THETA TAU

Delta Kappa Chapter of Sigma Theta Tau was chartered at The University of Texas at El Paso in 1980. The purposes of Sigma Theta Tau are to: recognize the achievement of scholarship of superior quality; recognize the development of leadership qualities; foster high professional standards; encourage creative work; and strengthen commitment on the part of individuals to the ideals and purposes of the profession of nursing.

Each year invitations to membership are extended to selected students in either the undergraduate or graduate program who are within the upper one-third of their graduating class.

FINANCIAL AID

Students enrolled in the College of Nursing and Allied Health are eligible to apply for all forms of financial assistance available to other majors. Specific information can be obtained from the Office of Student Financial Aid.

ARMED SERVICES

The United States Armed Services view the ROTC Programs as an exceptionally valuable source for officers who have an appreciation of nursing's contribution to the defense of the nation. Army and Air Force ROTC offers programs whereby nursing students may earn a commission while they complete their nursing curriculum. Scholarships that provide full tuition, books, and supply fees are available, and all advanced students receive a monthly stipend of \$100. In addition to financial assistance, the ROTC Programs offer leadership/management courses which are valuable assets in a nursing career. A six-week summer training program provides valuable experience for students in health care facilities between the academic years. Interested students should contact the Department of Military Science or the Department of Aerospace Studies on campus.

Admission

FRESHMEN AND SOPHOMORE STUDENTS

Students seeking admission to the University as freshmen or sophomores — lower division or pre-nursing students — should consult the section titled Undergraduate Admission in this catalog.

TRANSFER STUDENTS

A student seeking admission from another college or university must present (1) an application for admission to upper division nursing courses; (2) one official copy of transcript from each institution attended containing high school units and a report of scores on the admissions

test; and (3) a health history and physical examination completed within three months prior to enrollment and reported on a form supplied by the University. All credentials should be sent directly to the Office of Admission and Evaluation at The University of Texas at El Paso. Students transferring from other nursing programs must submit a statement from the previous program stating that the student is eligible to return to that program.

UPPER DIVISION ADMISSION

Students are considered for admission to the upper division major after they have completed 69 hours of prerequisite courses with an overall grade point average of 2.0 or higher in the prerequisite courses of the BSN degree plan. An overall University grade point average of 2.0 or higher must also be maintained. A minimum grade point average of 2.0 is required in all lower-division prerequisite pre-nursing course work. In addition, a "C" or better is required in Biology 4211-1212 (Anatomy and Physiology) and Microbiology 3230 or other identified comparable courses. Any student who does not satisfy the "C" minimum in the appropriately designated courses will not be admitted to upper-division course work until this requirement is met.

Applications for the upper division are available through the Office of Admission and Evaluation and should be filed after 30 hours of required courses have been completed.

Any applicant, whether a new student or a former student of the College of Nursing and Allied Health, who has attended another collegiate institution, will submit all previous collegiate records when applying for admission to the upper division of the College and is subject to its regulations. Such records should be submitted to the Office of Admission and Evaluation.

MEDICATION COMPETENCY POLICY

Prerequisite to admission to the fifth semester in the nursing program the student will be required to demonstrate mastery of drug calculation at the 90% level.

Mastery will be achieved and demonstrated by means of a score of 90% on a written examination given by the UTEP Testing Service. This mastery must be demonstrated in the semester immediately preceding entry into the fifth semester.

A module will be available for students who wish to prepare for the examination. Also, students who require or desire assistance will be able to receive tutoring from the experts at the study skills laboratory.

REQUIREMENTS FOR ENROLLMENT IN UPPER-DIVISION COURSES

Certification which is valid throughout the semester, in first-aid and cardiopulmonary resuscitation (CPR) Level C, must be presented in order to enroll in each upper-division clinical nursing course. In addition, evidence of an annual physical examination and current immunization must be validated by the University Health Service.

Professional Liability Insurance

All students enrolling in nursing courses will be required, prior to official registration each semester, to show evidence of current professional liability insurance coverage of at least a minimum amount of \$3,000,000 limit each claim and \$1,000,000 limit in the aggregate per year. This insurance can be purchased at registration.

Classification of Students

Students are classified as pre-nursing students during the freshman and sophomore years. Junior and senior students are identified as nursing majors if they meet the requirements and are designated as upper-division students by the College of Nursing and Allied Health.

Academic Standards

ACADEMIC PROGRESS

A grade of C or higher must be earned for each nursing course. A grade of D or F in either the theory or practicum parts of a course constitutes a grade of D or F for the course. If a student earns a D or F in a required upper-division nursing course, the next higher course may not be taken until the prerequisite course is repeated and passed with a C or higher.

University policy on repetition of courses is described in the Aca-

demical Regulations section elsewhere in this Catalog. A College of Nursing and Allied Health student may repeat a course only once upon the recommendation of the faculty and approval by the Dean. A student who is not recommended to repeat a professional course is no longer eligible to continue in the nursing program. Only freshman level courses may be repeated under the University provisions for recalculation of the GPA (Option #1), and they may be repeated only once. A student may not repeat a required upper-division clinical nursing course for credit in which a grade of C or higher has already been earned.

All nursing students must perform within limits of safe practice. A faculty member may drop a student from a course with an F if the student's nursing practice is deemed to be unsafe as defined in the Safe Practice Policy of the College. A copy of this policy is posted on the Official Bulletin Board in the College.

CONFERENCES

The Dean and Assistant Dean are prepared to confer with students who are doing unsatisfactory work, particularly at mid-semester and at the end of the semester. Faculty are available to confer with students, according to posted office hours.

ADVANCED STANDING—REGISTERED NURSES

In keeping with the College's stated philosophy of learning, the faculty recognizes that many potential avenues for acquisition of the knowledge, attitudes, and skills are available. The faculty believes that experiences in formal education should build on the student's present level of achievement. Therefore, the faculty subscribes to the principle of validation of the candidate's competencies and allows matriculation into the program at the demonstrated level of achievement.

1. To petition for Advanced Standing, an individual must have met all requirements for admission to upper-division nursing courses.
2. The candidate should consult the Assistant Dean regarding application policies and scheduling of courses.
3. A student may not challenge a course in which previously enrolled or a course which has been completed with either a passing or failing grade.
4. A candidate for advanced standing may obtain the course materials which are available to all students enrolling in the respective course. Auditing or receiving tutoring by faculty of the College of Nursing and Allied Health is prohibited.
5. Tuition will be assessed for each course in which advanced standing is sought.
6. Both the theoretical and clinical portions of each respective course must be satisfactorily completed. Failure in one aspect, theory or clinical, constitutes failure in the course.
7. Advanced standing in any course may be attempted one time only.

GRADUATION REQUIREMENTS

1. To be eligible for graduation, a student must have attained a minimum of a 2.0 grade point average, both in the lower division and upper division course work in the baccalaureate degree plan.
2. A candidate must successfully complete the prescribed curriculum and must meet all other requirements of the College.
3. To receive the Bachelor of Science in Nursing, a student must complete in residence the last 30 semester hours of the nursing major at the upper-division in the College.

TESTING PROGRAM

In order to assist faculty with academic advisement of students, as well as providing a means of ongoing evaluation of the College of Nursing and Allied Health curriculum, upper-division students are required to participate in a testing and evaluation program in addition to course examinations.

LICENSURE AS A PROFESSIONAL NURSE

Graduates seeking licensure must successfully complete the State Registered Nurse Licensure Examination which is administered by the Board of Nurse Examiners for the State of Texas. The Board issues a temporary permit to practice professional nursing under the direct supervision of a Registered Nurse. The permit must be returned to the Board of Nurse Examiners if the candidate fails the examination.

Bachelor of Science in Nursing

This program consists of approximately two years of lower-division courses taken at a regionally-accredited college or university, followed by approximately two years of upper-division nursing courses which are taken at the College of Nursing and Allied Health. Upon completion of the program, students are awarded the degree and are eligible to take the State Board Test Pool Examination for licensure as registered nurses.

LOWER-DIVISION REQUIREMENTS (69 SEMESTER HOURS)

Natural and Physical Sciences (24 hours)

Chemistry 4107 and 4108 or 3105, 3106, and 2106
Biology 3105-1107 and 3106-1108 (not required of students who have satisfactorily completed Human Anatomy, Human Physiology and General Microbiology at another accredited institution; if so, other science courses must be taken)

Biology 4211, 1212
Microbiology 3230

Behavioral Sciences (12 hours)

Psychology 3101, 3103, 3210
Sociology 3101

General Courses (21 hours)

English 3111-3112
History 3101-3102 or 3103-3104 (no more than 3 hours of this requirement may be satisfied with credit by examination)
Political Science 3110-3111 (only 3110 may be satisfied with credit by examination)
Health Education 3202

Professional Courses (12 hours)

Nursing 3250, 3251, 3313*
Speech, Hearing and Language Disorders 3210*, Allied Health Sciences 3100 or any upper division Allied Health Sciences course*

* CNAH Core Curriculum Courses

UPPER-DIVISION REQUIREMENTS (68 SEMESTER HOURS)

The nursing major begins in the junior year after completion of the 69 hours of required basic liberal arts, science, and professional courses. The curriculum of the junior and senior years consists of theory and clinical practicum in a variety of health care settings, as follows:

Nursing 3302, 7302, 7303, 7370, 7371, 7410, 7411, 7471, 7472, 3470,
plus 6 hours of upper-division nursing or AHS electives
Total for the Degree 137 hours

Bachelor of Science in Nursing for Registered Nurses

This program is designed to allow registered nurses to build upon an existing base of knowledge which they have obtained from previous nursing training and which they have demonstrated via the state board licensing examination administered by the Board of Nurse Examiners for the State of Texas or via other state licensing examinations. Admission to the program is open to recipients of associate degrees in nursing from two-year colleges and to registered nurses who have graduated from other recognized nursing programs. Licensure in nursing will satisfy the requirements for the following courses which are part of the B.S. degree in Nursing:

Biology 4211-1212
Microbiology 3230
Psychology 3210
Nursing 3250, 3251, 7302, 7303, 7370, 7371

Nursing (NURS)

Required Courses

3250 Conceptual Base for Nursing Practice (3-0)

Focuses on relationships of the natural and behavioral sciences which form the basis for nursing practice. *Prerequisites:* BIOL 4211, 1212; CHEM 3105, 3106, 2106, or 4107, 4108; PSYC 3103; SOCI 3101; or permission of instructor.

3251 Nursing: Historical, Contemporary and Future Perspectives (3-0)

An introduction to the study of professional nursing with emphasis on the changing roles and functions of the nurse and the profession of nursing.

3302 Health Assessment (2-2)

Focuses on evaluation of the health status of individuals of varied ages, including a health history and performing physical-psychosocial assessment. Emphasis is placed on a systematic approach to health assessment as it relates to the nursing process. *Prerequisites:* Admission to the upper-division; concurrent with NURS 7302. Laboratory Fee: \$10.

3313 Human Pathophysiology (3-0)

The study of pathophysiological processes and their impact on the body systems. Focuses on disease or trauma-induced alteration of regulatory mechanisms within the human organism. *Prerequisites:* BIOL 4211 and 1212.

7302 Theories, Principles and Skills Basic to Nursing (3-8)

Application of the nursing process in the care of individuals with emphasis on communication and health assessment skills. Clinical practicum provided in hospitals, simulation laboratory and a variety of other community health agencies. *Prerequisites:* Admission to the upper-division; concurrent with NURS 3302. Laboratory Fee: \$30.

7303 Nursing in Maintenance and Promotion of Health (3-8)

Application of nursing process with emphasis on interventions associated with adaptation and promotion of wellness of individuals throughout the life continuum. Clinical practicum will be provided in the simulation laboratory, hospitals, and a variety of other community health agencies. *Prerequisite:* NURS 7302 and 3302 or concurrently. Laboratory Fee: \$20.

7370 Nursing Care of Individuals and Families Experiencing Minor Health Problems (3-8)

Application of the nursing process to assist the health needs, plan for, and implement nursing care of ill and disabled individuals and their families. Nursing care focuses on alleviating or modifying stressors, facilitating adaptive behaviors, and improvement of illness and disability, as well as promoting or maintaining health. Clinical practicum is provided in hospitals, the simulation laboratory and a variety of other community health agencies. *Prerequisite:* NURS 7303. Laboratory Fee: \$30.

7371 Nursing Care of the Individual and Family During the Child-bearing Period (3-8)

Focus is on nursing care of the pregnant woman and family dynamics throughout the maternity cycle. Clinical practicum is provided in simulation laboratory, in the labor and delivery suite, post-partum unit, newborn nursery, and in the home. *Prerequisite:* NURS 7370 or concurrently. Laboratory Fee: \$10.

7410 Nursing Care of Individuals and Families Experiencing Major Health Problems (3-8)

Application of the nursing process to individuals and families experiencing major and/or complicated health problems. Clinical practicum is provided in the simulation laboratory, hospitals, other community health agencies, and the home. *Prerequisite:* NURS 7371. Laboratory Fee: \$10.

7411 Nursing of People In Crisis (3-8)

Application of the nursing process in the care of individuals, families, and groups experiencing potential or actual crisis. Emphasis is on severe anxiety and mental illness. Clinical practicum is provided in hospitals and other community health agencies and homes. *Prerequisite:* NURS 7410 or concurrently. Laboratory Fee: \$10.

3470 Health Care — Nursing Care: Portents and Challenges (3-0)

Analyses facts and beliefs about health, health institutions and the health delivery system(s). Examines the economic and social impacts of legislation and studies the role of nursing, its quality, its responsibility and its accountability in today's society and in the future. *Prerequisite:* NURS 7471 or concurrently with 7472.

7471 Nursing Leadership and Management (3-8)

Concepts of management are studied in relation to the nursing care team as part of the total health care team. Concepts are utilized in care of individuals and families in hospitals and a variety of other community settings. *Prerequisite:* NURS 7411. Laboratory Fee: \$10.

7472 Primary Health Care-Nursing (3-8)

A culminating experience focusing on meeting the health needs of the individual, the family and the community. Practicum includes the nurse's role in primary health care. *Prerequisite:* NURS 7471 or concurrently with NURS 7471 and 3470. Laboratory Fee: \$10.

Elective Courses**3380 Selected Topics In Nursing (3-0)**

Selected topics of current interest. May be repeated when topic varies.

6305 Nursing Care of Surgical Patients (3-6)

An opportunity to gain further knowledge and skill in the care of patients who require surgical intervention. Focus is on the complete cycle of care: preoperative care including health teaching, participant observer in the operating room, and postoperative care. *Prerequisite:* NURS 7370-7371 or consent of instructor.

3307 Pharmacodynamics In Nursing (3-0)

Focuses on knowledge of pharmacology and chemotherapeutics. In addition, opportunity is provided for the development of competency in the preparation and administration of medications. *Prerequisites:* NURS 7302-7303.

3310 Nursing Care of Ill Children (3-0)

An opportunity to gain further knowledge of growth and development, family theory, and pathophysiology as well as developing skills used in caring for the ill child and his family. Nursing problems of biological-psychological-sociological development are studied in depth. *Prerequisite:* NURS 7303 or consent of the instructor.

3318 Gerontological Nursing (3-0)

An opportunity for the student to gain increased knowledge and skill in the management of the health and nursing care of the elderly. The focus of study will be on the bio-psycho-social aging processes of individuals and families as a basis for nursing practice. *Prerequisite:* NURS 7303.

3319 Transcultural Nursing (3-0)

This course is designed to enhance the student's ability to identify, understand and accept differing cultural, religious and socio-economic customs, values and practices. The emphasis will be placed on relating these factors to health and health care.

3320 Nursing Care of High Risk Individuals During the Child-bearing Period (3-0)

An opportunity to further knowledge and skills in the care of high risk women and babies during the childbearing process. Abnormal psychological factors and the psychosocial implications for both mother and infant are studied. *Prerequisites:* NURS 7370-7371.

3330 Contemporary Perspectives on Death and Dying (3-0)

This course is designed to assist the student to recognize his personal feelings and fears about his own death and the death of others. Support of family during grief and bereavement will be included. *The Hospice concept of care will be explored as a method of maintaining human dignity and mutual support of the dying person and his family.*

3405 Emergency Nursing Care (3-0)

An opportunity to gain further nursing knowledge and skills in the care of patients who have injuries or illnesses of an emergency nature. *Prerequisite:* NURS 7411 or consent of the instructor.

3410 Therapeutic Nursing Strategies for Mental Health (3-0)

An opportunity to gain further knowledge of mental health concepts and therapeutic strategies when caring for patients/clients. Primary focus will be on developing further skills using one or more of the following strategies: Reality Therapy, Transactional Analysis, and Behavior Modification. *Prerequisite:* NURS 7411 or consent of the instructor.

6306 Rural Health Nursing (3-6)

An opportunity to gain further nursing knowledge and skill for the prevention of illness and maintenance of health in the rural area. Health care problems of individuals, families, and groups in rural settings are explored and solutions are implemented. *Prerequisite:* NURS 7371. Laboratory Fee: \$10.

3315 Independent Study**3415-6415 Independent Study**

Directed study with related clinical laboratory experience planned to meet the learning objectives of the student in a special area of interest. *Prerequisite:* Approval of the Dean.

See the *Graduate Studies Catalog* for graduate programs and courses.

Continuing Education Program

Maintaining professional competency in nursing is primarily the responsibility of the individual practitioner who can best establish personal and professional goals and pursue the appropriate learning experiences.

The University of Texas at El Paso College of Nursing and Allied Health faculty acknowledges its responsibilities to provide such learning experiences for practicing nurses. This is accomplished by developing, implementing and evaluating a variety of continuing education programs within the locality most accessible to the practitioner. The faculty believes that such continuing education programs, in the form of workshops, conferences, seminars, self-study modules and short courses, serve as an adjunct to formal study and are not substitutes for further formal education.

Allied Health Programs

The degrees offered include: the Bachelor of Science in Allied Health Sciences, Bachelor of Science in Medical Technology, and the Bachelor of Science in Speech, Hearing and Language Disorders.

Bachelor of Science in Allied Health Sciences

This program provides: (a) allied health practitioners holding associate degrees and certification the opportunity to continue their formal education to the baccalaureate level while remaining in their chosen allied health field and (b) for those who are not certified Allied Health professionals, it prepares graduates to function as allied health professionals who collaborate with other health team members to promote and maintain clients' health. The curriculum is designed to broaden the general education base, provide depth in the basic sciences fundamental to the allied health profession, extend the knowledge of the health care field, and develop skills in management and supervision and allied health education.

For certified Allied Health professionals, the 133 semester hour curriculum builds upon the previous education by allowing up to 66 semester hours of credit earned in the student's associate degree program to be counted toward meeting the baccalaureate degree requirements. For non-certified students, the program consists of 133 semester hours culminating in the baccalaureate of science degree in Allied Health Sciences.

Degree Requirements (133 semester hours)

General Foundations (52 hours)

- English 3111-3112
- History 3101-3102 or 3103-3104
- Political Science 3110-3111
- Statistics 3 hours
- +*Allied Health Sciences 3100
- *Psychology 9 hours (3101, 3210 and one of the following: 3206, 3212, 3220, or 3306)
- *Sociology 6 hours (3101 and one of the following: 3341, 3363, 3380, 3381) or
- *Social Work 6 hours (4101 and 3360 or 3401)
- *Speech 3 hours (3101 or 3102)
- +Speech, Hearing and Language Disorders 3 hours (3210)
- *Computer Information Science 3225 (or AHS 3305)
- Electives 4 hours

Life and Physical Sciences (33 hours)

- *Biology 13 hours (3105-3106, 1107-1108, 4211-1212)
- Chemistry 8 hours (3105-3106-2106 or 4107-4108)
- Microbiology 3 hours
- +Pathophysiology 3 hours (NURS 3313)
- Electives 6 hours (in upper division)

Allied Health Core (18 hours)

- Health Education 3301, 3303, 3304
- Allied Health Sciences 3311, 3315
- Sociology 3362
- Administration Concentration (15 hours)
- Management 3300, 3310
- Accounting 3201
- Allied Health Sciences 3400, 3401
- *and
- Teaching Concentration (15 hours)
- Educational Psychology 3301
- Allied Health Sciences 3402, 3410, 3411, 3412

*May be waived for students with Allied Health certification in their professional area. (These students may receive up to 40 semester hours for professional foundation courses).
+College of Nursing and Allied Health Core Curriculum

Allied Health Sciences (AHS)

3100 Introduction to the Health Professions (3-0)

A general introduction to the scope and roles of various health professions and the educational base required for careers in the health fields. The interdisciplinary efforts in the delivery of health care are investigated.

3305 Computerized Systems for Health Professionals (2-2)

Offers an opportunity for health care professionals to use computerized health information systems to enhance professional practice, clinical decision making and provide more effective, efficient client care. Students will analyze current, future and potential uses and constraints of computer systems and their impact on health care.

3310 Media Development for Health Professionals (1-4)

Development and use of a variety of multi-media resources to enhance professional practice, teaching and marketing in diverse health agencies. The course provides an opportunity for students to select, prepare and effectively use various types of media.

3311 Infection Control in Health Care Facilities (3-0)

This course provides the health care professional with an opportunity for appreciation of the infection problem in health care facilities, the factors which contribute to the problem, the legal and regulatory considerations and the control measures required to minimize the risks of infection for the compromised patient.

3315 Research for the Health Professional (3-0)

Introduction to basic research concepts and processes which enable health professionals to use and participate in clinical investigations. Also includes: associated legal, ethical and moral issues.
Prerequisite: Undergraduate statistics course prior to or concurrent with or consent of instructor.

3400 Supervisory Techniques in Allied Health (3-0)

This course is designed to provide knowledge of supervisory techniques related to a professional field characterized by technical specialization and cross-field interdependency.

3401 Practicum in Allied Health (0-9)

Students selecting a specialization in administration will participate in a hospital-based practicum providing opportunities for observation in administration skills. Laboratory Fee: \$4.

3402 Practicum in Allied Health (0-9)

Students selecting a specialization in Allied Health Education will gain teaching experience in in-service education, didactic and clinical teaching experiences in the certified allied health professional field and continuing education. Laboratory Fee: \$4.

3410 Educational Evaluation in the Health Sciences (3-0)

The design of evaluation systems in the health sciences and their application in the implementation of instructional programs. The development of evaluation systems includes the identification of professional performance, analysis of actual performance and knowledge expectations, identification of entry level competencies, selection of evaluation techniques, and revision of evaluation systems.

3411 Clinical Education for Allied Health Professionals (3-0)

Introduces the students to a systems approach to clinical education; formulating goals, policies and objectives; designing learning and organizational strategies and developing and implementing clinical education programs.

3412 Curriculum Development in Allied Health Sciences (3-0)

Study of the processes of curriculum and course development and implementation as applied to the allied health sciences.

Bachelor of Science in Medical Technology

Program Director: Gail Ackall

The Medical Technology program is designed to prepare graduates to function as professional members of the health care team. Their services are utilized in hospitals, clinics and private laboratories, as well as in business and industry. Medical technologists perform a variety of laboratory procedures that aid in the diagnosis, treatment and prevention of disease. Computers, automated instruments and ever increasing sophisticated laboratory techniques help insure the accuracy and precision of their work. The University of Texas at El Paso's Medical Technology Program is accredited by the American Medical Association as recommended by the National Accrediting Agency for Clinical Laboratory Sciences to the Committee on Allied Health Education.

Students completing approximately 60 semester hours of prerequisite course work at the University or at a regionally-accredited institution must apply for the upper division in the spring semester prior to the beginning of the junior year. In addition, students must have their transcripts evaluated by the Office of Admission and Evaluation. An overall GPA of 2.0 in all course work and a 2.5 in science prerequisites is required for entry into the upper-division.

All lower division course work must be completed prior to enrolling in the senior clinical courses. All senior medical technology students enrolled in clinical courses will be required prior to registration each semester to show evidence of professional liability insurance coverage, current basic CPR certification, annual physical examination, and immunization.

A grade of "C" or higher must be earned in each medical technology course. If a student earns less than a "C" in a medical technology course, the next higher course may not be taken until the prerequisite course is repeated and passed with a "C" or better.

All medical technology students must perform within limits of safe practice. Students who are deemed unsafe by faculty will be dropped and will receive an "F" in the clinical course. The Safe Practice and Procedure Policy for Medical Technology students is posted on the Official Bulletin Board in the College. All work performed by students

during the clinical practicum must be under the direct supervision of clinical faculty and countersigned by them.

As a professional, the Medical Technology student must exhibit a commitment to the welfare of patients. The faculty in the program reserve the right to refuse the opportunity of a student to perform tests or procedures on patients if the student gives evidence of unsafe and/or ineffective laboratory techniques. A student may not render services when under the influence of medication, alcohol, or illicit drugs which alter judgment.

Students graduating from The University of Texas at El Paso are eligible for, and expected to take, certification examinations. One examination is administered by the American Society of Clinical Pathologists, and successful candidates may use the initials MT (ASCP) after their name. A second examination for which students are eligible is administered by the National Certification Agency, and if passed, graduates may use CLS (Clinical Laboratory Scientist) after their name.

Degree Requirements (135 semester hours)

General Courses (40 hours)

- English 3111-3112 plus 3 hours sophomore literature
- History 3101-3102 or 3103-3104
- Political Science 3110-3111
- Speech 3101 or 3102
- Psychology 3101, 3210
- Electives 7 hours
- Sociology 3101

Sciences (45 hours)

- Biology 3105-1107, 3106-1108, 3214-1215, 4211-1212
- Chemistry 3105, 3106-2106, 3324-1324, 3325-1325
- Mathematics 4110, 3280, 1282
- Microbiology 3240-1241

Upper-division Professional Courses (50 hours)

- Medical Technology 3301, 1306, 4301, 2311, 3403, 3401, 3402, 3410, 7406, 7407, 4408, 1414
- Nursing 3313
- Allied Health Sciences 3400, 3411

Bachelor of Science in Medical Technology

LOWER DIVISION

FRESHMAN YEAR

1st Semester	Hours
BIOL 3105 General Biology	3
BIOL 1107 Topics in Study of Life I	1
CHEM 3105 General Chemistry	3
ENGL 3111 Expository English Composition*	3
POSC 3110 American Government	3
	<u>17</u>

2nd Semester	Hours
BIOL 3106 General Biology	3
BIOL 1108 Topics in Study of Life II	1
CHEM 3106 General Chemistry	3
CHEM 2106 Lab for Chemistry 3106	2
ENGL 3112 Research and Critical Writing	3
PSYC 3101 Introduction to Psychology	3
	<u>15</u>

Summer	Hours
SOCI 3101 Principles of Sociology	3
HIST 3101 History of U.S.	3
	<u>6</u>

SOPHOMORE YEAR

1st semester	Hours
BIOL 3214 Molecular Cell Biology	3
BIOL 1215 Lab for 3214	1
CHEM 3324 Organic Chemistry**	3
CHEM 1324 Lab for 3324	1
ENGL 3213 or 3214, 3215, 3216, 3218 Literature	3
POSC 3111 American Government	3
	<u>14</u>

2nd Semester	Hours
MATH 3280/1282 Statistical Methods	4
CHEM 3325 Organic Chemistry	3
CHEM 1325 Lab for 3325	1
BIOL 4211 Human Anatomy/Physiology	4
BIOL 1212 Lab for 4211	1
	<u>13</u>

Summer	Hours
HIST 3102 History of U.S.	3
SPCH 3101 Public Speaking*	3
	<u>6</u>

UPPER DIVISION

JUNIOR YEAR

1st Semester	Hours
MICR 3240/1241 General Microbiology**	4
MEDT 3301 Immunology for Medical Technologists	3
MEDT 2311 Basic Hematology/Coagulation	2
MEDT 1306 Serology	1
MEDT 3403 Hematology-Coagulation Applications	3
	<u>13</u>

2nd Semester	Hours
MEDT 3401 Medical Technology Lab. Skills I	3
MEDT 4301 Clinical Chemistry	4
NURS 3313 Human Pathophysiology	3
PSYC 3210 Life Cycle Development	3
	<u>13</u>

Summer	Hours
MEDT 3410 Immunohematological Applications	3
MEDT 3402 Medical Technology Lab. Skills II	3
	<u>6</u>

SENIOR YEAR

1st Semester	Hours
MEDT 7406 Analysis Techniques I	7
MEDT 4408 Chemistry Applications	4
MEDT 1414 Clinical/Pathology Seminar	1
	<u>12</u>

2nd Semester	Hours
MEDT 7407 Analysis Techniques II	7
AHS 3411 Clinical Education for Allied Health	3
AHS 3400 Supervisory Techniques in Allied Health	3
	<u>13</u>

Total Hours 128, plus 7 hours of electives
ENGL 3110, MATH 3105, 4109 are not counted toward degree requirements.

*Can substitute ENGL 6111.

**Course work in Organic Chemistry (Biochemistry) and Microbiology must be taken within the last five years.

Medical Technology (MEDT)

General Prerequisite: Admission to the Upper-division

3301 Immunology for Medical Technologists (3-0)

This course covers basic immunology and its clinical applications. Interactions between various lymphoid cells and their secretions are examined. The role of the immune system in tumor growth, transplantation and rejection, and autoimmune diseases is examined. Various test methods and procedures used in the clinical lab are demonstrated and discussed. Prerequisites: MICR 3240, 1241.

4301 Clinical Chemistry (4-0)

Basic concepts of quality control, laboratory mathematics, colorimetry and spectrophotometry, fluorometry and radioimmunoassay are discussed. Chemical laboratory fundamentals and procedures are presented and related to normal and abnormal human physiology and biochemistry. Prerequisites: CHEM 3325-1325, MEDT 3301.

1306-Serology (1-0)

The theoretical aspects of immunologic procedures are presented and related to the diagnosis of disease. *Prerequisite:* MEDT 3301.

2311 Basic Hematology/Coagulation (2-0)

Basic hematological concepts involving normal red cells, white cells, and platelets are presented. Red cell dyscrasias, and coagulation abnormalities are included. *Prerequisites:* BIOL 4211/1212, CHEM 3325, and MEDT 3301. Concurrent with MEDT 3403.

3401 Medical Technology Laboratory Skills I (0-9)

This course is designed to develop skills in clinical laboratory procedures. Experiences in serological, hematological and microbiological applications are included. *Prerequisites:* MEDT 2311 and concurrent enrollment in MEDT 3403.

3402 Medical Technology Laboratory Skills II (0-9)

This course is designed to develop and refine skills in performing clinical laboratory procedures. A clinical practicum emphasizes clinical chemistry, immunohematological and routine analysis applications in the clinical laboratory. *Prerequisites:* MEDT 3401, 3403 and concurrent enrollment in MEDT 3410.

3403 Hematology-Coagulation Applications (2-3)

This course develops the basic hematological principles including: the various anemias, leukemias, coagulation disorders and genetic defects in the hematopoietic system. Students will develop skills in basic hematological procedures. Concurrently with MEDT 2311.

4408 Chemistry Applications (1-9)

This course provides basic clinical chemistry concepts and advanced quality control procedures including toxicology, drug monitoring, hormones and hormone interaction, and method evaluation.

7406 Analysis Techniques I (0-21)

Techniques and their applications in routine analysis, clinical microbiology, hematology and coagulation in the clinical laboratory setting. *Prerequisite:* MEDT 3402.

7407 Analysis Techniques II (0-21)

Procedures of clinical chemistry, immunohematology and serological applications in the clinical laboratory. Includes practicum. *Prerequisite:* MEDT 7406 and concurrent enrollment in MEDT 1414 and 4408.

1414 Clinical/Pathology Seminar (1-0)

Focuses on pathological findings and the role of the clinical laboratory in disease detection and treatment. *Prerequisite:* Concurrent enrollment in MEDT 7407.

3410 Immunohematological Applications (2-3)

Procedures for handling, storing and pretransfusion testing of blood are performed. Antibody identification, absorption and elution techniques, autologous transfusion methodology and the role of component therapy in the blood bank are emphasized.

1490-3490 Special Problems

Independent study in clinical laboratory research. Limit 6 credits. *Prerequisites:* Admission to the Medical Technology Program and consent of the instructor.

Bachelor of Science with Major in Speech, Hearing and Language Disorders

Program Director: Joseph A. Perozzi

The baccalaureate degree in Speech, Hearing and Language Disorders is designed to provide quality education for students with career goals of becoming speech-language pathologists or audiologists. The program emphasizes coursework in the natural and behavioral sciences along with an intensive descriptive study of the causes, diagnosis and remediation of communicative disorders. Students selecting Plan I must complete several requirements in Education, including student teaching (TED 9499), in order to be certified in Speech-Language Therapy by the Texas Education Agency. See Plan I: Teacher Certification in Speech-Language Therapy for details. Students who

choose Plan II select 21-hours of advanced electives in partial fulfillment of the Bachelor of Science degree. Both Plans I and II are designed to prepare students for graduate education. Both plans emphasize clinical practicum to enhance the student's development of a strong sense of professional ethics and values. Students enrolled in clinical practicum are provided a model which enhances quality education and community service.

Academic Progress

When a student applies for enrollment in clinical practicum (SHLD 6411), he or she is evaluated by the faculty and staff in order to ascertain that the admission criteria listed under that course elsewhere in this section have been met.

DEGREE REQUIREMENTS (129 semester hours, 60 of which must be advanced level)

Academic Core Courses (68 hours)

Semester Hours:	
12	English 3111 (or 6111), 3112, 3303, 3359
6	History 3101, 3102 or 3103, 3104
6	Political Science 3110, 3111
4 or 3	Speech 3101 or 3102 or 3103 (1103)
9	Psychology 3101, 3103, 3210
3	Linguistics 3220
3	Nursing 3313*
3	Allied Health Sciences 3305*
4 or 3	Mathematics 4109 or 3120
8	Biology 3105-1107, 3106-1108
12	Electives
<hr/> 70	<hr/> 68

Professional Core Courses (37 hours)

SHLD 1110, 3110, 3210,* 3312, 3313, 3314, 3315, 3316, 3317, 3409, 3410, and 6441.

*College of Nursing and Allied Health core curriculum courses.

Plan I: Teacher Certification in Speech-Language Therapy;

requirements include: TED 1201, 9499; ELED 3307; EDPC 3301; RED 3340; SPED 3425; SHLD 3318; plus 200 clock hours of supervised clinical practicum, 100 of which are completed while enrolled in SHLD 6441 and 100 of which are completed while enrolled in TED 9499. Prerequisite for TED 9499 is a grade point average of at least 2.5 in Education courses and a grade point average of at least 2.5 in SHLD courses.

Prior to admission to Teacher Education and/or professional education courses, students must complete the following: (1) English 3111-3112 and Speech 3101 with grades of C or better; (2) Teacher Education 1201 with grade of S; (3) minimum of 45 semester hours college work completed with a cumulative G.P.A. of at least 2.0 at UT El Paso; (4) Pre-Professional Skills Test (P-PST) or the Texas Academic Skills Program (TASP) with passing scores; and (5) degree and/or certification plan on file in the Certification Office. In order to be recommended for certification, a student must complete the following: (1) an approved degree program and be approved for graduation; (2) ExCET tests in teaching field(s) and professional education with passing scores in each test; (3) cumulative G.P.A. of 2.0; and (4) 2.5 G.P.A. in teaching field(s) and in professional education. New requirements are being developed for students who wish to be teacher certified in Speech Communications and who will graduate Fall 1991 or after; such students should consult with the College of Education or with the University Academic Advising Center.

Plan II: Non-Certification; requirements include SHLD 3318 and 21 hours of advanced electives, selected in consultation with the advisor. Completion of 100 clock hours of supervised clinical practicum while enrolled in SHLD 6441 is required.

Minor in Speech, Hearing and Language Disorders for Bachelor of Arts (Liberal Arts) Students: SHLD 1110, 3110, 3210, 3315, 3409 (13 hours), and two courses selected from SHLD 3312, 3313, 3314, 3317, 3410 (6 hours).

Speech, Hearing and Language Disorders (SHLD)

1110 General Phonetics Laboratory (0-2)

Experience using the International Phonetic Alphabet for transcription of the speech of normal and aberrant speakers. To be taken concurrently with SHLD 3110.

3110 General Phonetics (3-0)

Principles of speech sound production, their acoustic correlates, and their perception. Instruction in the use of the International Phonetic Alphabet is included with application to communication disorders. To be taken concurrently with SHLD 1110.

3210 Survey of Speech, Hearing & Language Disorders (3-0)

A survey of disorders associated with the five parameters of communication: audition, articulation, voice, rhythm, and language. Course will also include discussion of the professional aspects of speech and language pathology and audiology.

3312 Anatomy and Physiology of Speech and Hearing Mechanisms (3-0)

The anatomical and physiological bases of speech including respiratory, phonatory, articulatory, auditory and neurological parameters. Emphasis is placed on the physiology of each system as it relates to speech and hearing.

3313 Voice and Articulation Therapy (3-0)

Therapeutic strategies for disorders of voice and articulation of organic and non-organic etiology. *Prerequisites:* SHLD 1110, 3110, 3210.

3314 Language Therapy (3-0)

Models of language therapy applicable to language-impaired populations with emphasis on clinical management. *Prerequisites:* SHLD 1110, 3110, 3210.

3315 Language Development (3-0)

Theory and chronology of speech and language acquisition with emphasis on the cognitive and physiological correlates of language as related to communication disorders.

3316 Diagnostic Procedures (3-0)

Study of the diagnostic techniques and specific tests utilized in the evaluation of disorders of communication. *Prerequisites:* SHLD 1110, 3110, 3210.

3317 Therapy for Fluency and Motor Speech Disorders (3-0)

Therapeutic strategies for disorders of fluency and for breakdown of motor speech patterns caused by impairment of the central and/or peripheral nervous system. *Prerequisites:* SHLD 1110, 3110, 3210.

3318 Principles of Clinical Management (2-2)

Principles of clinical management. Preparation of therapy plans, case summaries, term end reports, and diagnostic reports. Completion of 25 clock hours of supervised clinical observation. *Prerequisites:* SHLD 1110, 3110, 3210.

3409 Audiology (3-0)

Orientation to audiology with emphasis on the physics of sound, pathology of the ear, hearing tests and measurements.

3410 Aural Rehabilitation (3-0)

Applied procedures in habilitation and rehabilitation of the hearing impaired. *Prerequisite:* SHLD 3409.

3418 Voice Science (3-0)

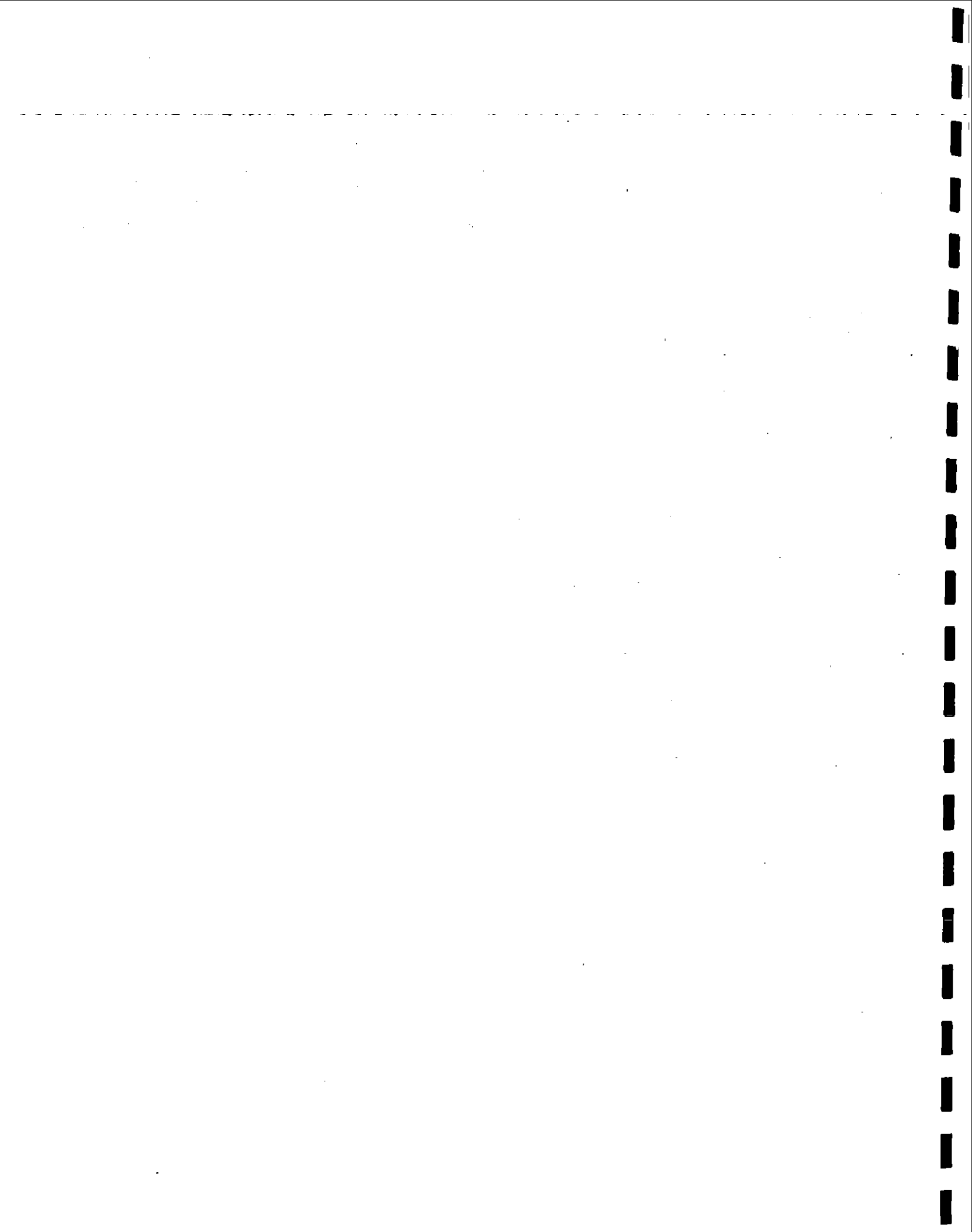
Theories of voice production, physiological analysis of voice production, investigative techniques such as spectography including voice print analysis and spectral analysis. *Prerequisite:* SHLD 3312 or permission of instructor.

3420 Independent Study in Speech, Hearing and Language Disorders (3-0)

Individual directed study. *Prerequisites:* Completion of 12 semester hours of SHLD coursework with a GPA of 2.5 and consent of instructor.

6441 Clinical Practicum in Speech, Hearing and Language Disorders

Course must be repeated until the student has completed a minimum of 100 clinical clock hours; however, only 6 hours of this course will count toward teacher certification. *Prerequisites:* An overall GPA of 2.0; completion of SHLD 1110, 3110, 3210, 3312, 3313, 3314, 3315, 3316, 3317, and 3318 with a GPA of at least 2.5; proficient use of Standard American Oral English. The maximum course load for students enrolled in this course is three other courses for a total of not more than 16 hours.





Biological Sciences
Chemistry
Geological Sciences
Mathematical Sciences
Physics

Reynaldo S. Elizondo, Dean
William C. Cornell, Assistant Dean
Bell Hall
(915) 747-5536

The College of
SCIENCE

Introduction

In 1913 the required freshman curriculum for all 27 students at the Texas State College of Mines and Metallurgy included courses in Chemistry, Geology, Mathematics and Physics, as well as Mechanical Drawing, Surveying, and "Fuels and Furnaces." From these roots the University of Texas at El Paso's College of Science has grown to its present state — 85 faculty in 5 academic departments offering 8 Bachelor of Science degree programs to more than 1500 students. The College of Science consists of the Departments of Biological Sciences, Chemistry, Geological Sciences, Mathematical Sciences, and Physics.

Preparation of these students for careers as scientists and researchers is the primary mission of the College of Science. In addition, the College offers training in the basic sciences and mathematics needed by students seeking careers in such diverse fields as dentistry, forestry, medicine, pharmacy, wildlife management, and veterinary medicine. Bachelor of Arts (B.A.) degree programs are available in all departments, as are graduate programs leading to the Master of Science (M.S.) degree. A doctoral degree program is offered in Geological Sciences.

The 85 faculty, from 22 states and 5 foreign countries, share a commitment to the ideal that teaching and research are opposite sides of the same coin. Many have achieved international reputations for their research, yet all, from the Dean of the College to the newest member of the faculty, have classroom teaching responsibilities at the undergraduate and graduate levels.

Undergraduate Programs

Each department of the College of Science and the Department of Psychology offers the Bachelor of Science degree subject to the general requirements listed below. Each department also offers the Bachelor of Arts degree subject to the general requirements listed in the College of Liberal Arts.

A student planning a technical career or graduate work is advised to follow the B.S. degree route. Either the B.S. or the B.A. degree is suitable for professional school admission (see below). Either degree may also be used to satisfy requirements for teacher certification if a second teaching concentration and appropriate professional education courses are selected (see the College of Education section of this catalog). Two years of course work in the College of Science may serve as preparation for admission to veterinary programs at other institutions (consult the appropriate catalog) or to The University of Texas at El Paso College of Nursing and Allied Health.

Departmental Honors Programs

The Departments of Biological Sciences, Chemistry, Geological Sciences, Physics, and Psychology have departmental honors programs for qualified advanced undergraduates. Information about these programs may be obtained by turning to each department's section of this catalog.

Bachelor of Science Degree Requirements

The B.S. degree in all science areas requires 135 semester hours credit including:

1. At least 45 advanced hours (300-400) credit.
2. The completion of a major field concentration of prescribed courses. These departmental requirements range from 30 to 45 semester hours and are listed with departmental course offerings.
3. The completion of a minor field concentration of 18 semester hours, at least 6 of which must be advanced, in an area related to the major. Each department specifies acceptable minor fields.
4. The completion of at least 6 approved hours in a field of science that is not the major or minor field.
5. Computer Science 4120 (or equivalent), Mathematics 4111 and 3112; or (if specified by the departments) Mathematics 3280, 1282, and 3281 may be substituted for Mathematics 3112.
6. History 3101, 3102 or History 3103, 3104.
7. Political Science 3110, 3111.

8. English 3111 (or 6111, or placement), 3112 and 3359. Students whose first language is other than English may substitute English as a Second Language 3104, 5110, 3111, 2111, 3112, 2112 for English 3111 and 3112. A maximum of 10 credit hours of freshman level English or English as a Second Language may be applied toward the 135 hours required for graduation.
9. Six additional hours of credit must be earned from departments in the College of Liberal Arts or the College of Business. The courses selected to meet this requirement must be approved by the student's undergraduate advisor. This requirement does not apply to students pursuing the B.S. degree in geophysics.
10. Elective courses of general interest or relevance to the major field of the student as needed to complete the required 135 hours credit and the 45 advanced hours credit minimum. Courses in which the material is repetitive of, or included within, courses required by the department or College may not be applied as elective credit toward the B.S. degree. Mathematics 3105 may not be counted toward the 135 semester hours required for the B.S. degree.
11. Specific departmental requirements (listed with departmental offerings) may extend the general requirements.
12. Enrollment in upper division courses in the academic major of B.S. students in the College of Science is permitted only after the student has completed all lower division prerequisites with a minimum GPA of 2.0 in all classes attempted and a grade of C or better in all required lower division courses in the academic major department.

Major Fields

The College of Science offers B.S. degrees in the following disciplines: Applied Mathematics, Biology, Chemistry, Geology, Geophysics, Mathematics, Microbiology, Physics, Psychology, and Statistics. The general degree requirements for the above are listed under the B.S. degree plan for the College of Science and specific requirements may be found in that department's section of the catalog.

Students planning to obtain a degree in the College of Science must major in one of the above disciplines. Students undecided as to their major but interested in science should list their major as General Science until such time as a major is selected. Students planning to obtain a degree in areas such as pharmacy, optometry, or other health-related fields in which degrees are not offered at UT El Paso, should also list their major as General Science. Students planning to enter medical or dental schools normally obtain a B.S. or B.A. degree in Science and for this reason they should choose a major field (pre-medical and pre-dental are not major fields).

Double majors: students may enroll as double majors in the College of Science. Such students must complete, satisfactorily, all course work required of majors in each department. No academic minor (item 3 in degree requirements) will be required. Double majors in a single academic department are not allowed.

Second baccalaureate degrees: Students whose first baccalaureate degree was awarded by the College of Science may not obtain a second baccalaureate degree in the same academic department. Students seeking a second B.S. degree in a different department within the College of Science must complete at least 24 semester hours, specified by the department, following the award of the first B.S. degree. Students may petition the Dean of Science to reserve up to 9 semester hours taken during the last semester of the initial degree work for credit toward the second B.S. degree.

Students whose first baccalaureate degrees were earned in another College of The University of Texas at El Paso, or at another accredited institution, may enroll as candidates for a second B.S. degree in the College of Science. This degree will be awarded upon satisfactory completion of all degree requirements of the College of Science and of the academic department of the second major.

Teacher Certification

Programs leading to Bachelor of Science degrees in Science with Secondary Teaching Certification are available in the following areas: Biological Science, Chemistry, Earth Science, Life/Earth Science, Mathematics, Physical Science, Physics, and Composite Natural

Science. Detailed degree and certification requirements may be obtained from the Assistant Dean of Science (Bell Hall 100). Academic advising for students seeking science teaching certification is also available from the Assistant Dean of Science.

Advising

All students enrolled in the College of Science must be advised prior to registration and are encouraged to complete advising prior to final examinations for the preceding semester. Any student who has selected a major field of study will be advised by the designated advisor within the student's major department. Any student who has not chosen a major field of study should be advised in the Office of the Dean of Science.

Students planning a nursing career, or a career in an allied health field (Medical Technology) should be advised in the College of Nursing and Allied Health.

Office of Medical-Dental Preprofessional Advising

Those students planning to enter medical, dental or veterinary schools need supplemental advising from the Office of Medical-Dental Preprofessional Advising in the Academic Advising Center. This office does not do academic advising, but provides students with information about entrance to professional schools. Students planning to pursue medical or dental careers are urged to contact this office as soon as possible after admission to the University.

Degree Plans

Any student who has completed 60 credit hours is required to file for a degree plan. The degree plan, which is a listing of the outstanding requirements for graduation, must be obtained from the Office of the Dean of the College of Science (Dean of the College of Liberal Arts for the B.A. degree). A copy of the degree plan will also be filed with the student's major department. The degree plan must be updated following the completion of 90 credit hours. Each student is required to obtain confirmation of their standing from the Office of the Dean of the College of Science prior to registering for the semester in which all course work for a degree will be completed.

First Year Programs

The prerequisite structure in science programs requires careful attention to course sequences. To assist the student in structuring such a program, typical first year programs are as follows:

Biological Sciences

Fall Semester	Hrs.
Mathematics (Pre-Calculus*)	4
General Biology	4
General Chemistry**	3
English	3
History of the U.S. or American Government	3
Spring Semester	Hrs.
General Biology	4
General Chemistry	5
English	3
Mathematics (Calculus)	3/4

Chemistry

Fall Semester	Hrs.
General Chemistry**	3
Mathematics (Pre-Calculus*)	4
English	3
History of the U.S. or American Government	3
Spring Semester	Hrs.
General Chemistry	5
Mathematics (Calculus)	3/4
English	3

History of the U.S. or American Government	3
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Geological Sciences

GEOLOGY	Hrs.
Fall Semester	
Geology	4
Mathematics (Pre-Calculus*)	4
English	3
History of the U.S. or American Government	3
Spring Semester	Hrs.
Geology	4
Mathematics (Calculus)	3/4
English	3
Chemistry	3
Electives	3

GEOPHYSICS

Fall Semester	Hrs.
Geology	4
Mathematics (Pre-Calculus*)	4
English	3
History of the U.S. or American Government	3
Spring Semester	Hrs.
Geology	4
Mathematics (Calculus)	3/4
Physics	4
Physics Laboratory	1
Chemistry	3

Mathematics

Fall Semester	Hrs.
Mathematics (Pre-Calculus*)	4
English	3
History of the U.S. or American Government	3
Electives	3/6
Spring Semester	Hrs.
Mathematics (Calculus)	3/4
English	3
History of the U.S. or American Government	3
Electives	3/6

Physics

Fall Semester	Hrs.
Physics	3
Physics Lab I	1
Mathematics (Pre-Calculus*)	4
English	3
American Government	3
Electives	0/3
Spring Semester	Hrs.
Physics Lab II	1
Physics	4
Mathematics (Calculus)	3
English	3
American Government	3
Electives	3/6

*A student may enroll in MATH 4111 (Calculus) if he has the appropriate prerequisite.

**Prerequisite: MATH 4110, or concurrently.

Biological Sciences

226 Biological Sciences, Engineering Science Complex
(915) 747-5844

CHAIRMAN: Albert G. Canaris

PROFESSORS EMERITI: Mary Eleanor Duke, Gordon Wesley

Robertstad, John Simeon Williams

PROFESSORS: Bristol, Canaris, Elizondo, Harris, Metcalf, Webb

ASSOCIATE PROFESSOR EMERITUS: Peter Stanley Chrapliwy

ASSOCIATE PROFESSORS: Elizey, Freeman, Goldstein, Hunter,

Jones, Rael, Reid, Worthington

ASSISTANT PROFESSORS: Arenaz, Muganda-Ojiaku, Redetzke

B.S. Degree: The Department offers the B.S. Degree in Biological Sciences and Microbiology. Biological Science majors may elect a concentration in Botany or Zoology. Specific course requirements for the B.S. degree are:

A. Biological Sciences—A total of 38 semester hours including 18 advanced hours. Specific requirements are: BIOL 3105-06, 1107-08, 3214-1215, 3216-1217, 3318-1319, 3320, 3321; CHEM 3105-06, 2106; MATH 4111 and 3112 (or 4111, 3280-1282, and 3281); CS 4120. The minor requires 18 semester hours, including 6 advanced hours, and acceptable minors are Chemistry, Engineering, Geological Sciences, Mathematics, Physics, Computer Science, and Psychology.

B. Microbiology—A total of 38 semester hours including 18 advanced hours. Specific requirements are BIOL 3105-06, 1107-08, 3214-1215, 3320; MICR 3240-1241, 3343-1344, 3345-1346; plus 11 additional hours of advanced courses to be selected from the following: MICR 2347, 2348, 3328-1328, 3349, 3451-1452, 3453-1454, 3455-1456, 3459, 3460, 3461, 3350-1350; ZOOL 2364-1365; BIOL 3422-2423. Also required are CHEM 3105-06, 2106; MATH 4111 and 3112 (or 4111, 3280-1282, and 3281); CS 4120. BIOL 3490 and 3498 are highly recommended but will not count toward the 11 advanced hours in Biology. A total of 18 semester hours is required for the Chemistry minor (CHEM 3105-06, 2106, 3324-3325, 1324-1325, and 2 additional hours). Under exceptional circumstances, acceptable minors are Engineering, Geological Sciences, Mathematics, Physics, Computer Science, and Psychology. (A total of 18 semester hours is required for the minor, including 6 advanced hours.)

B.A. Degree: The B.A. Degree is offered in Biological Sciences. A concentration in Botany or Zoology may be elected. Course requirements are as above for the B.S. Degree in Biological Sciences except that the total Biological Sciences requirement is 30 hours including 15 hours of advanced courses. The B.A. Degree requires an 18-hour minor.

Advising/Placement

All Biological Sciences majors are required to consult with and have their enrollment forms stamped by their departmental advisor before every enrollment.

An entering freshman with at least one year of high school biology may take an advanced placement examination given by the University Counseling Service covering BIOL 3105, 3106, 1107, 1108. It is recommended that students taking the placement examination have an SAT combined score of at least 1000.

Departmental Honors in Biological Sciences

Any UT El Paso student having a strong background in Biological Sciences or Microbiology, at least 90 hours of undergraduate credit, and a GPA of at least 3.3 either in Biological Sciences or Microbiology, as well as an overall GPA of at least 3.3, may apply for admission to the program. The Departmental Honors Committee retains the right to accept or not accept a qualified student, taking into consideration the number of applicants, the number of available faculty, and the competence of the individual student. The main requirements for Departmental Honors in Biological Sciences or Microbiology will be the satisfactory completion of an Honors Thesis based upon research in Biological Sciences or Microbiology, maintenance of an overall 3.3 GPA or better until graduation, and the presentation of a seminar on the thesis topic. The student will register for two semesters of BIOL

3498; and the research will be carried out under the direction of a member of the faculty in Biological Sciences. The satisfactory completion of the Honors Thesis will be judged by the thesis-research director and the Departmental Honors Committee. Departmental Honors may be awarded with or without other currently awarded honors.

Preprofessional Programs (Training only; no degree)

The Department offers these programs in applied science to prepare students for transfer to professional schools. These programs are designed for basic preprofessional training only, and no specific degrees are offered in these fields by this institution. The student should select a professional school for completion of the degree as early as possible and obtain information on its specific requirements. The programs suggested below can then be modified to meet the requirements of that particular school. The B.S. degree in Biology and Microbiology are good choices for students entering such fields as dentistry, medicine, veterinary medicine, optometry, pharmacy, and other health sciences.

1. Fisheries and Wildlife Sciences—Courses suggested for preprofessional training include: Biology 3105-06, 1107-08; 3214, 1215; 3216, 1217; 3320; Botany 2337, 2338; Chemistry 3105-06, 2106, 3324, 1324; Computer Science 4120; Economics 3203; English 3111-12; 3359; Geology 3101, 1101; History 3101-02; Mathematics 4111; 3112; Physics 4103; Political Science 3110-11; Mathematics 3280, 1282, 3281 (Statistics); Zoology 3476, 1477, 3478, 1479; 3480, 1481.
2. Forest and Range Sciences—Courses suggested for preprofessional training include: Biology 3105-06, 1107-08; 3214, 1215; 3216, 1217; 3320; Botany 2337, 2338; Chemistry 3105-06, 2106; 3324, 1324; Computer Science 4120; Economics 3203; English 3111-12; 3359; Geology 3101, 1101; History 3101-02; Mathematics 4111; 3112; Mathematics 3280, 1282; 3281 (Statistics); Physics 4103; Political Science 3110-11.
3. Medicine and Dentistry—Courses suggested for preprofessional training include: Biology 3105-06, 1107-08; 3214, 1215; 3320; Chemistry 3105-06, 2106; 3324-25, 1324-25; 3430; Computer Science 4120; English 3111-12; 3359 or Speech 3102; History 3101-02; Mathematics 4111; 3112; Microbiology 3240, 1241; 3343; 3451; Physics 4103-04; Political Science 3110-11; Psychology 3101; 3103; Zoology 2364, 1365; 3480, 1481. Medical College Admission Test (MCAT) or Dental College Admission Test (DCAT) is required.
4. Nutrition Science—Courses suggested for preprofessional training include: Anthropology 3102; Biology 3105-06, 1107-08; 4211, 1212; Chemistry 3105-06, 2106; 3324, 1324; Economics 3203; English 3111-12; 3359; Health Education 3202; History 3101-02; Mathematics 4109; Political Science 3110-11; Sociology 3102.
5. Optometry—Courses suggested for preprofessional training include: Biology 3105-06, 1107-08; Chemistry 3105-06, 2106; 3324-25; 3430; English 3111-12; 3211-12 or 3215-16; History 3101-02; Mathematics 4111; 3112; Microbiology 3240, 1241; Physics 4103-04; Psychology 3101, 3103; Political Science 3110-11; Zoology 3480, 1481. Optometry College Admission Test (OCAT) is required.
6. Pharmacy—Courses suggested for preprofessional training include: Biology 3105-06, 1107-08; 3214, 1215; Chemistry 3105-06, 2106; 3324-25, 1324-25; Economics 3203; English 3111-12, 3211-12; History 3101-02; Mathematics 4110-11; Microbiology 3240-1241; Physics 4103-04; Political Science 3110-11; Speech 3102; Zoology 3480, 1481. Pharmacy College Admission Test (PCAT) is required.
7. Veterinary Medicine—Courses suggested for preprofessional training include: Biology 3105-06, 1107-08; 3214, 1215; 3320; Chemistry 3105-06, 2106; 3324-25; 1324-25; 3430; Computer Science 4120; English 3111-3112; 3359 or Speech 3102; History 3101-02; Mathematics 4111, 3112; Physics 4103-04; Political Science 3110-11; Zoology 3480, 1481. Medical College Admission Test (MCAT) is required.

Students planning to enter fields such as Dentistry, Medicine, Pharmacy, or Veterinary Medicine should meet regularly with the Pre-Med Advisor (Academic Advising Center).

Biology (BIOL)

For Undergraduates

3105-06 General Biology (3-0)

A modern approach to the principles of biology, stressing the evolutionary relationship of plants and animals to success in the biosphere. *Required of all Biology majors and minors as a prerequisite for all other Biology courses.* BIOL 1107 is normally taken concurrently with BIOL 3105 and BIOL 1108 concurrently with BIOL 3106.

1107 Topics in the Study of Life I (0-2)

Elementary aspects of cell structure, function, nutrition and reproduction. Laboratory Fee: \$8.

1108 Topics in the Study of Life II (0-2)

Elementary aspects of evolution, physiology, development, genetics, and ecology in plants and animals. Laboratory Fee: \$8.

4211 Human Anatomy/Physiology (4-0)

Correlated structure and function of human organ systems. Concurrent with BIOL 1212. *Prerequisites:* BIOL 3105-06 and 1107-08.

1212 Exercises In Human Anatomy/Physiology (0-2)

Methods in and principles of human anatomy and physiology. Concurrent with BIOL 4211. Laboratory Fee: \$8.

3214 Molecular Cell Biology (3-0)

A biochemical and ultrastructural study of cells including gene regulation, cell signalling, membrane transport, conduction, and contraction. *Prerequisites:* BIOL 3105-06, 1107-08 and 8 hours of Chemistry.

1215 Molecular Cell Biology Techniques (0-3)

Experimental techniques with prokaryotic and eukaryotic organisms. Respirometry, photometry, calorimetry, paper and column chromatography, electrophoresis, measurement of bioelectrical events. Concurrent with BIOL 3214. Laboratory Fee: \$30.

3216 General Ecology (3-0)

Relations of biota to the physical and biological environment. *Prerequisites:* BIOL 3105-06 and 1107-08. Biology majors must take 1217, non-majors may take BIOL 3216 without 1217.

1217 General Ecology Investigative Techniques (0-3)

Demonstrations and application of ecological concepts with emphasis on field work. Concurrent with BIOL 3216 or may be taken later. Laboratory Fee: \$30.

For Undergraduates and Graduates

3318 Developmental Biology (3-0)

A study of growth, differentiation and developmental patterns in plants and animals. Concurrent with BIOL 1319. *Prerequisites:* BIOL 3105-06 and 1107-08.

1319 Experimental Embryology (0-3)

Techniques and observations of development in invertebrates and vertebrates, as well as regulatory patterns of plant hormones. Concurrent with BIOL 3318. Laboratory Fee: \$30.

3320 Genetics (3-0)

The nature and functions of hereditary material with emphasis on the experimental procedures and data that have led to the current concepts in genetics. *Prerequisites:* BIOL 3214 and 1215 or equivalent or approval of instructor.

3321 Evolutionary Theory (3-0)

Development of evolutionary thought, evidences of evolution and the evolutionary processes. *Prerequisites:* BIOL 3105-06, 1107-08.

3326 Animal Ecology (3-0)

Animal population dynamics, food habits, and nutritional aspects of ecosystem study. *Prerequisite:* BIOL 3216. Recommended course: GEOG 3106.

3341 Plants in Southwest Cultures (3-0)

Study of food, fiber, medicinal and dye plants utilized by Southwest cultures with an emphasis on ethnobotany. Students may be required to take one weekend field trip. *Prerequisites:* BIOL 3105-06 and 1107-08 or permission of instructor.

3422 Biological Ultrastructure Interpretation (3-0)

Explanation of the techniques of electron microscopy and interpretation of the fine structure and correlated biochemistry of viruses, prokaryotes, and eukaryotes. *Prerequisites:* BIOL 3105-06, 1107-08, 3214, 1215, 16 hours of Chemistry and ENGL 3359 or instructor approval.

2423 Transmission Electron Microscopy (0-4)

Techniques and instruments used to analyze cell structure and function. Concurrent with BIOL 3422. Laboratory Fee: \$30.

3424 Animal Behavior (3-0)

Theories and experiments that elucidate the biological basis for the behavior of animals. *Prerequisites:* BIOL 3105-06, 1107-08.

2425-6425 Field Biology

Collection and study of organisms under field conditions. Variable credit. No more than six hours of Field Biology may be counted toward degree. *Prerequisites:* Core courses and consent of instructor. Transportation fee varies according to destination of trip.

3426 Bioarchaeology (2-3)

Recovery, processing, and interpretation of biological material associated with prehistoric and historic man in the New World. Laboratory Fee: \$8.

3490 Biological Practicum (0-6)

Practical on-the-job experience in federal, state, city-county governmental and/or private agencies or industries. *Prerequisites:* Senior standing, minimum of 15 advanced hours in designated subject matter areas of biological sciences necessary for job experience and written consent of instructor. No more than 6 hours of BIOL 3490 and/or 1498-3498 will count toward graduation.

1498-3498 Special Problems (0-2, 0-4, 0-6)

Laboratory research conducted by advanced students. No more than 6 hours of 1498-3498 may be counted toward graduation. *Prerequisite:* Consent of the instructor. Laboratory Fee for 1498 and 2498: \$8; Laboratory Fee for 3498: \$30.

Microbiology (MICR)

For Undergraduates

3230 Microorganisms and Disease (3-0)

A survey of microorganisms important to man with emphasis on those pathogenic for man; laboratory demonstrations of diagnostic procedures for pathogenicity of and immune responses to the more common pathogens. A terminal course not to be used as a prerequisite for any other course. A course for non-majors, including those in the nursing program. *Prerequisites:* BIOL 3105-06, 1107-08.

3240 General Microbiology (3-0)

Survey of the different types of microorganisms and their characteristics; aspects of biochemical cytology, physiology and genetics; introduction to areas of applied microbiology. Concurrent with MICR 1241. *Prerequisites:* BIOL 3105-06, 1107-08, 3214 and 1215 or concurrently.

1241 General Microbiology Methods (0-3)

Techniques used to study pure cultures and physiological characteristics of microorganisms, introduction to the applications of microbiology. Concurrent with MICR 3240. Laboratory Fee: \$8.

For Undergraduates and Graduates

3328 Microorganisms In Ecosystems (3-0)

The relationship between microorganisms (viruses, bacteria, fungi, algae, and protozoa) and their environment (air, water and soil microbiology decomposition, and pollution). Concurrent with MICR 1328. *Prerequisites:* BIOL 3216 and a minimum of eight hours of Chemistry. Recommended course: MICR 3240, 1241.

1328 Microbial Ecosystems Techniques (0-3)

Techniques employed in studying microbial ecology and environmental microbiology. Concurrent with MICR 3328. Laboratory Fee: \$8.

3343 Pathogenic Microbiology (3-0)

A study of the epidemiology, pathogenicity and host response to disease-producing microorganisms. Concurrent with MICR 1344. *Prerequisites:* MICR 3240, 1241.

1344 Diagnostic Bacteriology (0-3)

The practical application of diagnostic procedures for isolating and identifying pathogenic microorganisms and ancillary procedures in disease diagnosis. Concurrent with MICR 3343. Laboratory Fee: \$30.

2347 Determinative Microbiology (2-0)

Cultivation, characterization, and systematics of microorganisms. Concurrent with MICR 2348. *Prerequisites:* MICR 3240 and 1241.

2348 Determinative Techniques (0-6)

Principles of sterilization, preparation and use of culture media, enrichment, cultures, and modern identification techniques. Concurrent with MICR 2347. *Prerequisites:* MICR 3240 and 1241. Laboratory Fee: \$8.

3345 Microbial Physiology (3-0)

Biochemical cytology, growth, nutrition, metabolism and genetics of microorganisms. Concurrent with MICR 1346. *Prerequisites:* MICR 3240 and 1241. CHEM 3325 and 1325; CHEM 3432 highly recommended.

1346 Microbial Physiology Methods (0-3)

Techniques used to study structures and physiological activities of microbial cells. Concurrent with MICR 3345. *Prerequisites:* MICR 3240 and 1241. CHEM 3325 and 1325; CHEM 3432 highly recommended. Laboratory Fee: \$8.

3349 Prokaryotic Molecular Genetics (3-0)

The molecular biology of prokaryotes including genetic engineering, transfer of genetic information, structure and organization of the prokaryote genome and regulation of the expression of genes. *Prerequisites:* BIOL 3320, MICR 3240 and 1241.

3350 Food Microbiology (3-0)

Study of microbial spoilage of foods, contamination of foods, and food-borne diseases. Concurrent with MICR 1350. *Prerequisites:* MICR 3240-1241.

1350 Food Microbiology Techniques (0-3)

Methods of food preservation. Concurrent with MICR 3350. *Prerequisites:* MICR 3240, 1241. Laboratory Fee: \$8.

3451 General Virology (3-0)

Biochemistry and virus-host interactions of animal, bacterial, insect, and plant viruses. Concurrent with MICR 1452. *Prerequisites:* MICR 3240-1241; BIOL 3320. MICR 3345-1346 also recommended.

1452 General Virology Techniques (0-3)

Techniques used to study animal and bacterial viruses. Concurrent with MICR 3451. Laboratory Fee: \$8.

3453 Immunology (3-0)

Antigens and antibodies, humoral and cellular immunity, transplants, complement, diseases of the immune system. MICR 1454 is strongly recommended as a co-requisite. *Prerequisites:* MICR 3240 and 1241, CHEM 3325-1325.

1454 Immunology Techniques (0-3)

Antigen-antibody reactions as applied to diagnosis and research in vitro reactions, immunoelectrophoresis, fluorescent antibody techniques, hypersensitivity reactions. Concurrent with MICR 3453. Laboratory Fee: \$8.

3455 Medical Mycology (3-0)

A study of the fungi of medical importance. Concurrent with MICR 1456. *Prerequisites:* MICR 3343 and 1344.

1456 Medical Mycology Techniques (0-3)

Diagnosis and identification of medically important fungi. Concurrent with MICR 3455. Laboratory Fee: \$30.

3459 Public Health (3-0)

Factors involved in the occurrence, distribution, and control of disease in human populations. *Prerequisite:* Upper division standing. A course in microbiology and one in parasitology are recommended.

3460 Industrial Microbiology (3-0)

Emphasis on industrial fermentations of alcohol, methane, glycerol, acetonebutanol, acetic acid, lactic and other organic acids, antibiotics, polysaccharides, vitamins, amino acids, enzymes, steroids, engineering genetics, petroleum, sterilization and disinfection, and bio waste treatment. Concentration on metabolic pathways and the physical-chemical phenomena related to these processes. *Prerequisites:* MICR 3328 and 1328.

3461 Soil and Geomicrobiology (3-0)

Principles of microbial growth, interfacial phenomena and autotrophic heterotrophic mineral cycles; carbon, nitrogen, sulfur and selenium, phosphorus, oxygen, iron, copper, zinc, manganese, cobalt, uranium, vanadium, aluminum. In addition, the biogeochemistry relating to silica, sodium, calcium leaching, ligands, hydrocarbons, humus, and oxidized and reduced minerals (carbonates, coal, oil shale, tar sands, etc.) will be covered. *Prerequisite:* Junior or senior standing.

Botany (BOT)

For Undergraduates and Graduates

3330 Comparative Plant Morphology (3-0)

Life histories, phylogenetic relationships of vascular and non-vascular plants. *Prerequisites:* BIOL 3105-06, 1107-08.

2337 Plant Taxonomy (2-0)

Characteristics, classification, and phylogenetic studies of native and ornamental vegetation. Concurrent with BOT 2338. *Prerequisites:* BIOL 3105-06, 1107-08.

2338 Plant Identification Techniques (0-4)

Collection, systematic identification, and preservation of South-western flowering plants. Concurrent with BOT 2337. *Prerequisites:* BIOL 3105-06, 1107-08. Laboratory Fee: \$8.

3340 Plant Physiology (3-0)

Plant function at the tissue, cell, and molecular level. *Prerequisites:* BIOL 3105-06, 1107-08, and 8 hours of Chemistry.

Zoology (ZOOL)

For Undergraduates and Graduates

2364 Medical Parasitology (2-0)

A survey of medically important parasites. Concurrent with ZOOL 1365. *Prerequisites:* BIOL 3105-06, 1107-08.

1365 Identification of Human Parasites (0-3)

Techniques used to identify human parasites and infections. Concurrent with ZOOL 2364. Laboratory Fee: \$8.

4366 Invertebrate Zoology (3-3)

Survey and laboratory exercises concerning the invertebrates with emphasis on phylogeny. Excludes the protozoans and insects. Laboratory Fee: \$8.

2370 Animal Distribution (2-0)

Present and historical aspects of animal distribution with emphasis on development of patterns shown by terrestrial and freshwater faunas. Faunas of arid lands are stressed. *Prerequisites:* BIOL 3105-06, 1107-08.

3454 Paleozoic and Mesozoic Vertebrate Paleontology (3-0)

Study of evolution, biologic history, biostratigraphy, and classification of the Paleozoic and Mesozoic vertebrates with emphasis on the lower vertebrates and an introduction to early mammalian development. *Prerequisites:* BIOL 3105-06 and 1107-08, or GEOL 3101-02 or 4112, or permission of instructor. Concurrent with ZOOL 1455.

1455 Vertebrate Paleontology Techniques (0-3)

Collection, preservation, identification and curation of vertebrate fossils. Concurrent with ZOOL 3454. Laboratory Fee: \$8.

3456 Cenozoic Vertebrate Paleontology (3-0)

Study of the evolution, biologic history, biostratigraphy, and classification of the Cenozoic vertebrates with major emphasis on the mammals. *Prerequisites:* BIOL 3105-06 and 1107-08, or GEOL 3101-02 or 4112, or permission of the instructor. Concurrent with ZOOL 1457.

1457 Advanced Vertebrate Paleontology Techniques (0-3)

Collection, preservation, identification, and curation of vertebrate fossils. Concurrent with ZOOL 3456. Laboratory Fee: \$8.

3470 Protozoology (3-0)

The morphology, taxonomy, and physiology of the free-living and symbiotic protozoa. Concurrent with ZOOL 1471. *Prerequisite:* Senior standing in Biology.

1471 Protozoological Methods and Techniques (0-3)

Concurrent with ZOOL 3470. Laboratory Fee: \$8.

3476 Lower Vertebrates (3-0)

Classification and natural history of fish, amphibians and reptiles. Concurrent with ZOOL 1477. *Prerequisites:* BIOL 3105, 3106, 1107, and 1108.

1477 Lower Vertebrate Identification Techniques (0-3)

Recognition of selected local fish, amphibians and reptiles; methods of preparation of study specimens and techniques of collection and data gathering. Concurrent with ZOOL 3476. Laboratory Fee: \$8.

3478 Natural History of Birds and Mammals (3-0)

History of study, literature, and biology of birds and mammals. Concurrently with ZOOL 1479. *Prerequisites:* BIOL 3105, 3106, 1107, and 1108.

1479 Bird and Mammal Research Techniques (0-3)

Methods of study and familiarization with Southwestern species. Overnight field trips are required. Concurrent with ZOOL 3478. Laboratory Fee: \$8.

3480 Vertebrate Physiology (3-0)

Vertebrate systemic functions emphasizing nerve action and movement, endocrinology and metabolic controls, osmoregulation, cardio-physiology, and respiration. Concurrent with ZOOL 1481. *Prerequisites:* BIOL 3105-06, 1107-08, 3214, 1215, and CHEM 3105-06 and 2106.

1481 Vertebrate Physiology Methods (0-3)

Techniques and instrumentation used in study of vertebrate function. Concurrent with ZOOL 3480. Laboratory Fee: \$8.

See the *Graduate Studies Catalog* for graduate programs and courses.

Chemistry

209A Physical Science Building
(915) 747-5701, 5720

INTERIM CHAIRMAN: Michael I. Davis

PROFESSORS EMERITI: Harold Edwin Alexander, Lewis Frederick Hatch

ASSOCIATE PROFESSOR EMERITUS: Joseph Wallace Scruggs

PROFESSORS: Davis, Herndon, Pannell, Whalen

ASSOCIATE PROFESSORS: Becvar, Cabaness, Elizey, Lloyd, Rivera

B.S. Degree—Specific course requirements for the Chemistry major are CHEM 3105-06, 2106, 2261-1261, 3321-22, 3310, 1310, 2321-22, 3351-52, 1351-52, 2411-12, 3465, plus 3 additional advanced credit hours in Chemistry. CHEM 1476-3476 may not be used to satisfy this requirement. The minor must be chosen from one of the following fields: Biological Sciences, Business, Engineering, Geology, Mathematics, Physics, Psychology. Other minors may be substituted for the above with departmental approval. Students planning to attend Graduate School should take German.

B.A. Degree—Specific course requirements for the Chemistry major are Plan I (Pre-Medical—Pre-Dental Option): CHEM 3105-06, 2106, 2213-2214, 3324-1324, 3325-1325, 3326-1326, plus 6 additional advanced credit hours in Chemistry. The advanced courses from which these are to be selected are CHEM 3428, 3430, 3432, 3462, 3465, 3480, 1476-3476, 2411-2412. Plan II (General): CHEM 3105-06, 2106, 3321-22, 2321-22, 3310, 1310, 3351-52, 1351-52, plus one additional advanced course in Chemistry from the list given in Part I.

Five-year B.S.-M.S. Program—The curriculum for the B.S. degree in Chemistry can be completed in three and one-half years. After admission to the Graduate School of the University, it is possible to obtain the M.S. degree at the end of the 5th year of study in Chemistry. Qualified students should consult their academic advisor about the course of study, and regarding various forms of financial assistance obtainable through this program.

B.S. Degree with Departmental Honors in Chemistry—A candidate for Departmental Honors in Chemistry will have demonstrated ability in Chemistry, will have maintained a grade-point average of 3.0 by the end of the junior year, and will maintain this average until graduation. The main requirement for Departmental Honors will be the satisfactory completion of an Honors Thesis based on research in Chemistry. Usually this research will be carried out under the direction of a member of the faculty of the Department of Chemistry or a suitable faculty member from another department of the University. The satisfactory completion of the Honors thesis will be judged by the thesis-research director in conjunction with the Honors Committee. Other faculty and outside referees may be consulted if it is deemed to be appropriate to do so.

The candidate for Departmental Honors must request approval of candidacy during the second semester of the junior year. The Department of Chemistry reserves the right to accept or not accept a qualified student taking into consideration the number of applicants, the number of available faculty, and the competence of an individual student. The accepted honors candidate will enroll in CHEM 1476-3476 during both semesters of the senior year, and will have accumulated a total of 6 hours of 1476-3476 credit on completion of the honors program. Other regulations, procedures, and dates for use by honors candidates are available from the Chairperson, Department of Chemistry.

Advising/Placement—All Chemistry majors are required to consult with and have their enrollment forms signed by their department advisor before every enrollment.

All entering freshman students with at least one year of high school chemistry with an "A" or "B" in chemistry and an SAT score of at least 1000 may take an Achievement Examination given by the department. If a student scores 80 or above, he will be given the corresponding grade AND credit for CHEM 3105.

An entering freshman student with two years of high school chemistry with grades of "A" or "B" and an SAT score of at least 1000 may take Achievement Examinations given by the department over CHEM 3105 and 3106. If the score is 80 or above, the corresponding grade and credit for CHEM 3105 and 3106 will be given.

An entering freshman student with the above qualifications and with scores less than 80 on the Achievement Examination may at the discretion of the department be allowed to enter the next higher course without credit granted.

Chemistry (CHEM)

For Undergraduates

General Prerequisite: Junior standing for all 3300 or 3400 level courses.**4107-4108 Introductory Chemistry (3-3; 3-3)**

Basic concepts relating to composition, structure, and transformation of matter. Includes surveys of organic chemistry and biochemistry. May be counted toward the science requirement for students in Liberal Arts and Education. Students who need a foundation for work in advanced chemistry and related sciences or engineering fields should take CHEM 3105-3106-2106. *Prerequisite:* MATH 3105 (Intermediate Algebra), can be taken concurrently. Laboratory Fee: \$8.

3105-3106 General Chemistry (3-0)

The laws and theories of chemistry; the elements and their most important compounds with reference to their production and use. CHEM 3106 includes substantial coverage of inorganic chemistry topics. For students who need a foundation for work in advanced chemistry and related sciences. *Prerequisites:* MATH 4110 (or concurrently) or a Math SAT score of at least 600. Concurrent enrollment in CHEM 3106-2106 required. Note: All students in CHEM 3105 must reserve four (4) mornings from 7:00-8:00 a.m. for Chemistry examinations.

4105-3106 General Chemistry (4-0; 3-0)

CHEM 4105 includes more introductory material than CHEM 3105 and is designed for students who have not had a high school course in chemistry. For description and prerequisite see CHEM 3105-3106. Concurrent enrollment in CHEM 3106-2106 required. Note: All students in CHEM 4105 must reserve four (4) mornings from 7:00-8:00 a.m. for Chemistry examinations.

2106 Laboratory for Chemistry 3106 (0-6)

Laboratory Fee: \$8.

2213 Analytical Chemistry (2-0)

Analytical chemical practices, separations, identifications and quantitative measurements. This course is designed for students who are not chemistry majors. Concurrent registration in CHEM 2214 required. *Prerequisite:* CHEM 3106.

2214 Laboratory for Chemistry 2213 (0-6)

Laboratory Fee: \$8.

2261 The Periodic Table (2-0)

A survey course that expounds the principles of periodicity in the descriptive chemistry of the elements. Among the areas covered will be the alkali and alkaline earth metals, the carbon/silicon/germanium/tin and lead group, the chemistry of nitrogen, phosphorus and the halogens. Where possible, pertinent technical applications of the elements, and materials derived from them, will be presented, e.g., medicinal, inorganic polymer and semiconductor applications. *Prerequisite:* CHEM 3106-2106.

1261 Laboratory for CHEM 2261 (0-3)

Laboratory Fee: \$8.

3324 Organic Chemistry (3-0)

A study of the fundamental types of carbon compounds. Intended for students not requiring the detailed theoretical courses specified for the B.S. degree in Chemistry. May not be counted in addition to CHEM 3321 or 3322. *Prerequisites:* CHEM 3106-2106 and concurrent registration in CHEM 1324.

1324 Laboratory for Chemistry 3324 (0-3)

Laboratory Fee: \$8.

3325 Organic Chemistry (3-0)

A continuation of CHEM 3324 with emphasis on organic compounds and their reactions in living systems. May not be counted in addition to CHEM 3321 or 3322. *Prerequisites:* CHEM 3324 and concurrent registration in CHEM 1325.

1325 Laboratory for Chemistry 3325 (0-3)

Laboratory Fee: \$8.

For Undergraduates and Graduates

3321-3322 Organic Chemistry (3-0)

A study of chemical bonding and structure in organic molecules, functional group synthesis and reactions, reaction mechanisms, nomenclature, and isomerism. Intended for Chemistry majors and others requiring a modern theoretical approach to organic chemistry. Concurrent enrollment in CHEM 3321-2321 and in CHEM 3322-2322 required. *Prerequisite:* CHEM 3106-2106. May not be counted in addition to 3324-3325.

2321-2322 Laboratory for Chemistry 3321-22 (0-6)

Laboratory Fee: \$8.

3310 Analytical Chemistry (3-0)

Quantitative measurements and calculations, chemical equilibrium as applied to analyses and separations. Concurrent enrollment in CHEM 1310, 3351, and 1351 required. *Prerequisites:* CHEM 3322, MATH 3213 (or concurrently) and PHYS 4210 and 4211. This course is designed for Chemistry majors.

1310 Laboratory for Chemistry 3310 (0-4)

Laboratory Fee: \$8.

3351-3352 Physical Chemistry (3-0)

Properties of substances in gaseous, liquid and solid states; solutions, thermodynamics, kinetics and other advanced topics. Concurrent enrollment in CHEM 3351-1351 and in CHEM 3352-1352 required. *Prerequisites:* CHEM 3106-2106, MATH 3213 (or concurrently) and PHYS 4210 and 4211.

1351-1352 Laboratory for Chemistry 3351-52 (0-4)

Laboratory Fee: \$8.

3326 Physical Chemistry (3-0)

A survey of physical chemistry for students not seeking a B.S. degree with a chemistry major. May not be substituted for or counted in addition to CHEM 3351 or 3352. *Prerequisites:* CHEM 3106-2106, MATH 4110, or permission of the instructor, and concurrent registration in CHEM 1326.

1326 Laboratory for Chemistry 3326 (0-3)

Laboratory Fee: \$8.

3428 Advanced Topics in Organic Chemistry (3-0)

Selected topics at the undergraduate level which are not usually covered in introductory courses in organic chemistry. Course may be repeated for credit when topics vary. *Prerequisite:* CHEM 3322 or 3325.

3430 Topics in Biochemistry (3-0)

Topics may include protein chemistry, enzyme kinetics, enzyme mechanisms, membrane structure and function, and protein biosynthesis. *Prerequisite:* CHEM 3322 or 3325.

3432 Biochemistry (3-0)

A study of enzyme action, the metabolic pathways, and their interrelationships, including energy generation, storage, and utilization. *Prerequisites:* CHEM 3322 or 3325 and 3351 or 3326.

2411 Instrumental Methods of Analytical Chemistry (2-0)

A study of the more important optical and electrical methods of chemical analysis. *Prerequisite:* CHEM 3352-1352 or consent of instructor.

2412 Laboratory for Chemistry 2411 (0-6)

Laboratory Fee: \$8.

3462 Structure of Matter (3-0)

Introduction to quantum theory; atomic and molecular structure; atomic and molecular spectra; chemical bonding. This course meets the American Chemical Society requirements for an advanced course in Inorganic Chemistry. *Prerequisites:* PHYS 4210 and 4211 and CHEM 3352 or consent of the instructor.

3465 Inorganic Chemistry (3-0)

Principles of molecular structure and chemical reactivity of inorganic compounds; coordination chemistry and introduction to ligand field theory; kinetics and mechanisms of inorganic reactions; organometallic compounds; chemistry of nonmetals and physical methods in inorganic chemistry. *Prerequisites:* CHEM 3321-22 and 3351-52.

1465 A Laboratory Course in Inorganic Chemistry (0-4)

Provides laboratory practical exposure for students taking inorganic CHEM 3465. Laboratory Fee: \$8.

3468 Inorganic Biochemistry (3-0)

A survey of the metals in biological systems. Considers metal interactions with amino acids, polypeptides, nucleic acids, and extends to studies of metalloenzymes, metal storage and transport systems, oxygen carriers and nitrogen cycle. May not be counted toward a major in Chemistry. *Prerequisite:* CHEM 3432.

1476-3476 Introduction to Research

Credit will be granted only upon completion of research in the senior year on the recommendation of the head of the Chemistry Department. May be repeated for credit up to a total of 6 credit hours; all credit accrued will be counted as elective hours only. *Prerequisite:* Permission of the instructor. Laboratory Fee: \$8.

3480 Polymer Chemistry (3-0)

A survey of high polymers, including synthesis, characterization, and structure-property relationships. Considers step and chain polymerization, stereochemistry, and copolymerization. Also thermally stable polymers, conducting and photoactive polymers. *Prerequisite:* CHEM 3322 or CHEM 3325.

See the *Graduate Studies Catalog* for graduate programs and courses.

Geological Sciences

201C Geology
(915) 747-5501

CHAIRMAN: G. Randy Keller, Jr.

PROFESSORS: Clark, Harris, Hoffer, Keller, LeMone, Roy (*L.A. Nelson Professor*), Schmidt

ASSOCIATE PROFESSORS: Bronson, Cornell, Fuentes, Goodell, Pingitore

ASSISTANT PROFESSORS: Anthony, Doser, Julian, Marsaglia

VISITING ASSISTANT PROFESSORS: Hinojosa, Mora

B.S. Degree—Geology—Specific course requirements for the geology major are GEOL 4111, 4112, 1212, 3213, 3214, 3315, 4320, 4323, 3325, and 6465; plus 12 additional advanced hours in geology, at least 6 of which must be senior-level courses. GEOG 3308 and 3310, and advanced Geophysics courses will be accepted toward these advanced hours. CHEM 3105, 3106, 2106; MATH 4111 and 3112; PHYS 4210, 4211, 1120, and 1121; CS 4120 and MATH 3213 are highly recommended. The minor must be from one of the following fields: Biological Sciences, Chemistry, Computer Sciences, Engineering, Physics, or Mathematical Sciences. Students planning to become professional geologists are strongly advised to take the B.S. degree program.

B.A. Degree—Geology—Specific course requirements are Geological Sciences 4111, 4112, 3213, 3315, 4320, 4323, 3325, and 6465; Chemistry 3105, 3106, 2106; Mathematics 4110 and 4111; Physics 4210 and 4211; Geography 3208.

B.S. Degree—Geophysics—Specific course requirements are Geological Sciences 4111, 4112, 3213, 3315, 3325, 4323, 3432, 3434 and 6465; Physics 4210, 1120, 4211, 1121, 3351, 3428, 3441; Mathematics 4111, 3112, 3213, 3226, 3436; Chemistry 3105, 3106, 2106; Computer Science 4120; plus 9 elective hours in advanced level courses in geological sciences, physics, mathematics, computer science or engineering. Program includes Physics minor.

"C" Rule—Students must earn a grade of C or better in all courses taken within the Department of Geological Sciences that are used to satisfy the above Geology and Geophysics degree requirements. Continuation in sequence courses (such as GEOL 3214 and 3315) after

receiving a D in one of these courses is permitted with permission of the instructor. A student receiving a grade of D in a required course must repeat the course at its earliest offering. Students receiving consecutive grades of D will not be allowed to continue sequence courses until grades of C or better have been earned in the appropriate courses. A minimum grade point average of 2.0 must be achieved in required science courses taken outside the Geological Sciences department.

Departmental Honors in Geology or Geophysics

Departmental honors in Geology or Geophysics will be awarded upon completion and acceptance of a Senior Honors Thesis. The senior thesis will describe original research in the appropriate discipline undertaken by the student in collaboration with one or more faculty members in the Department of Geological Sciences. Policies and procedures of the Honors degree will be administered by the Departmental Honors Committee.

Any UT EL Paso student having a strong background in geology or geophysics, at least 90 hours of undergraduate credit, and a GPA of at least 3.5 in courses in the Geological Sciences, as well as an overall GPA of at least 3.5, may apply for admission to the program. The Departmental Honors Committee retains the right to accept or not accept a qualified student, taking into consideration the number of applicants, the number of available faculty, and the competence of the individual student.

The main requirements for Departmental Honors in Geology or Geophysics will be the satisfactory completion of an Honors Thesis based upon research in geology or geophysics, maintenance of a 3.5 GPA or better until graduation and the presentation of a seminar on the thesis topic. The accepted student will register for two semesters of GEOL 3499. The research will be carried out under the direction of a member of the faculty of the Department of Geological Sciences. The satisfactory completion of the Honors Thesis will be judged by the thesis-research director and the Departmental Honors Committee. Departmental Honors may be awarded with or without other University honors.

Geography (GEOG)

For Undergraduates

General prerequisite: Junior standing for all 3300 and 3400 level courses.

3106 Physical Geography (3-0)

Introduction to features and processes of the atmosphere, hydrosphere, biosphere, and lithosphere, with emphasis on spatial (distribution) patterns, and interactions between the four earth realms and human activities. The course culminates in a discussion of global environmental regions. Required of all minors in geography and designed to fulfill natural science requirements for students in education, liberal arts, and business. Minors should take 3106/1106 concurrently.

1106 Laboratory for Geography 3106 (0-2)

Required for minors in geography concurrent with 3106 and optional for all other students. Laboratory Fee: \$4.

3110 Cultural Geography (3-0)

Introduction to cultural elements, their spatial distribution, and their interrelationship to the physical environment.

3208 Cartography (2-4)

Theory and construction of map projections, compilation procedures, principles of generalization and symbolization, cartographic drafting and lettering techniques, and map reproduction methods. Laboratory Fee: \$8.

3306 Weather and Climate (3-0)

Study of the components of weather, weather processes, and measurement, climate elements and control factors; geographic classification of climates and natural vegetation on the earth's surface. *Prerequisite:* GEOG 3106 or GEOL 3103 or 3101, or permission of instructor.

3308 Remote Sensing (2-2)

Identification and interpretation of landscape features from remotely sensed imagery; analysis of recent advances in remote sensing techniques, with emphasis on practical planning applications in the earth sciences. *Prerequisite:* An introductory course in the geological sciences or biological sciences, or permission of the instructor. Laboratory Fee: \$8.

3310 Geomorphology (2-2)

Qualitative and quantitative analysis of geomorphic processes generated by water, ice and wind, with special reference to their effect in North America. *Prerequisite:* GEOL 3103 or 3101 or 4111 or GEOG 3106. Laboratory Fee: \$8.

3312 Geography of Latin America (3-0)

Study of the physical and cultural features which characterize the economic, social, and political geography of Latin America. *Prerequisites:* GEOG 3106, 3110 or permission of instructor.

3407 Geography of Arid Lands (3-0)

A study of the physical complexes of the world's dry regions. Salient factors emphasized include climate, landforms, water, soils, natural vegetation and various aspects of human occupation. *Prerequisite:* GEOG 3106 or 3110 or GEOL 3103 or permission of instructor. GEOG 3306 recommended.

3411 Political Geography (3-0)

Study of behavior and interactions among politically organized territories in their geographic context (identical with POSC 3411).

Geology (GEOL)

For Undergraduates

General prerequisite: Junior standing for all 3300 or 3400 level courses.

3101 Introduction to Physical Geology (3-0)

An introductory study of the earth's composition, structure, and internal and external processes. Designed to fulfill laboratory science requirements for students in Liberal Arts and Business. Concurrent enrollment in laboratory (1101) suggested but not required. May not be counted toward a major or minor in geology.

1101 Laboratory for Introduction to Physical Geology (0-2)

Concurrent enrollment in GEOL 3101 suggested. Laboratory Fee: \$4.

3102 Introduction to Historical Geology (3-0)

An integrated study of the geologic history of the earth with a consideration of the history of life as documented by the fossil record. Designed to fulfill laboratory science requirements for students in Liberal Arts and Business. Concurrent enrollment in laboratory (1102) suggested but not required. May not be counted toward a major or minor in geology.

1102 Laboratory for Introduction to Historical Geology (0-2)

Concurrent enrollment in GEOL 3102 suggested. Laboratory Fee: \$4.

3103 Principles of Earth Sciences (2-2)

Study of the earth as a planet. A survey of the physical processes operating in the atmosphere, lithosphere, and biosphere. Includes an introduction to meteorology, physical geology, soils, and vegetation. May not be counted toward a major or minor in Geological Sciences. This course is designed primarily for earth science education majors, although it will also fulfill natural science requirements for Liberal Arts and Business majors. Laboratory is required. Laboratory Fee: \$8.

3104 Principles of Earth Sciences (2-2)

Study of the earth as a planet. A survey of earth history as interpreted from and exhibited by plants, animals, rocks and minerals; a study of the earth in space; a survey of the physical processes operating in the hydrosphere. Includes an introduction to historical geology, astronomy, physiography, and oceanography. May not be counted toward a major or minor in Geological Sciences. This course is designed primarily for earth science education majors; although it will also fulfill natural science requirements for Liberal Arts and Business majors. Laboratory is required. Laboratory Fee: \$8.

4111-4112 Physical and Historical Geology (3-3; 3-3)

The first course (4111) of this two-semester sequence deals with the principles and processes of Physical Geology. The second course (4112) is a critical study of the principles of Historical Geology. These courses must be taken in sequence. Required of all students majoring in Geology or Geophysics, and of all students minoring in Geology. Laboratory required. Laboratory Fee: \$8.

1212 Field Methods In Geology

One week introduction to the basic field methods used by geologists to describe and map in the field. The course will include introductions to use of the Brunton compass, aerial photos, topographic maps, field descriptions, and some reconnaissance surveying techniques. The course is required of all students majoring in Geology. *Prerequisite:* GEOL 4111 and 4112. Transportation fee varies.

3213 Mineralogy (2-3)

Study of the crystallography, physical properties, classification, and identification of rock-forming minerals and ores. *Prerequisites:* GEOL 4111, CHEM 3105. Laboratory Fee: \$8.

3214 Geological Microscopy (2-3)

Study of rock-forming minerals and crystals with the petrographic microscope. *Prerequisite:* GEOL 3213. Laboratory Fee: \$8.

3304 Principles of Geology for Teachers of Earth Science (2-3)

Study of the principles and processes of physical and historical geology. Designed for Education and Liberal Arts majors. A one-day field trip is required. *Prerequisites:* GEOL 3103 or 3106 and 3104. Not open to students who have completed GEOL 4111 or 4112. Laboratory Fee: \$8.

3305 Rocks and Minerals for Earth Science Teachers (2-3)

Hand specimen study of the common rock-forming minerals, gem and ore minerals, and of igneous, metamorphic, and sedimentary rocks. *Prerequisite:* GEOL 3304, or permission of instructor. Not open to Geology majors. Laboratory Fee: \$8.

For Undergraduates and Graduates

3315 Petrology (2-3)

Hand specimen study and classification of igneous, sedimentary, and metamorphic rocks. *Prerequisite:* GEOL 3214 or permission of instructor. Laboratory Fee: \$8.

4320 Invertebrate Paleontology (3-3)

A survey of the classification, paleoecology, and stratigraphic distribution of fossil invertebrates. *Prerequisite:* GEOL 4112 or 3305 or permission of instructor. Laboratory Fee: \$4.

3321 Geology for Engineers (2-3)

The principles of physical geology and their practical applications to civil engineering. This course cannot be counted as a required upper-level course in Geology. *Prerequisite:* Junior standing in engineering or permission of instructor. Laboratory Fee: \$8.

4323 Structural Geology (3-6)

An introduction to the recognition, description and analysis of deformed rocks, spanning the spectrum from microscopic structures to mountain belts and plate tectonics. Geometric and stereographic analysis of map-scale structures. Introduction to stress, strain and constitutive laws for rocks. Processes of rock deformation including folding, fracturing and grain-scale processes. Correlation of structural styles with tectonic environments. *Prerequisites:* GEOL 3315, MATH 4111 or concurrently, and PHYS 4210. Laboratory Fee: \$8. Transportation fee varies.

3325 Sedimentology (2-3)

An introduction to sedimentary processes, environments, and deposits. Ancient deposits and modern analogs are examined in the field. Laboratory work will introduce techniques for the study of sediments and sedimentary rocks. *Prerequisites:* GEOL 3315 or permission of instructor. Laboratory Fee: \$8. Transportation fee varies.

3340 Vulcanology (3-0)

A study of the origin, eruption patterns and products of volcanoes. Discussion of thermal energy resources. This course cannot be counted as a required upper-level course in Geology. *Prerequisite:* GEOL 3103 or equivalent.

3350 Oceanography (3-0)

Introduction to submarine geology, physical and chemical oceanography, marine organisms, marine resources, shore processes, and methods of marine technology. This course cannot be counted as a required upper-level course in Geology. *Prerequisite:* GEOL 3101 or 4111 or 3104, or permission of instructor.

3359 Mineral Resources and Economics (3-0)

Geological characteristics and classification of metallic, non-metallic and fuel resources. Economic factors and problems related to development. This course cannot be counted as a required upper-level course in Geology. *Prerequisite:* GEOL 3101, or 3103, or 4111, or 3305.

3360 Environmental Geology (3-0)

A study of the applications of the science of geology to the problems of urban development and environmental control. This course cannot be counted as a required upper-level course in Geology. *Prerequisite:* GEOL 3101 or 4111 or 3321.

3380 Fossils (2-3)

Survey of the evolution of ancient life on earth and the consideration of the practical application of fossils as time and environmental indicators as revealed by the rock record. *Prerequisite:* Open to all non-majors upon completion of GEOL 3102, or 3104, or 4112. May not be used for credit for geology majors. Laboratory Fee: \$5.

3454 Paleozoic and Mesozoic Vertebrate Paleontology (3-0)

Study of evolution, biologic history, biostratigraphy, and classification of Paleozoic and Mesozoic vertebrates with emphasis on the lower vertebrates with an introduction to early mammalian development. *Prerequisites:* BIOL 3105-06 and 1107-08 or GEOL 4112 or permission of instructor. Concurrent with GEOL 1455.

1455 Vertebrate Paleontology Techniques (0-3)

Collection, preservation, identification, and curation of vertebrate fossils. Concurrent with GEOL 3454. Laboratory Fee: \$8.

3456 Cenozoic Vertebrate Paleontology (3-0)

Study of the evolution, biologic history, biostratigraphy and classification of the Cenozoic vertebrates with major emphasis on the mammals. *Prerequisites:* BIOL 3105-06 and 1107-08 or GEOL 4112 or permission of instructor. Concurrent with GEOL 1457.

1457 Advanced Vertebrate Paleontology Techniques (0-3)

Collection, preservation, identification and curation of vertebrate fossils. Concurrent with GEOL 3456. Laboratory Fee: \$8.

4458 Geology Applied to Petroleum (3-6)

A study of the origin, nature, migration, and accumulation of petroleum. Special emphasis is placed on the economics of commercial deposits of oil and gas, and on specific techniques for studying rocks and structures beneath the earth's surface. *Prerequisite:* GEOL 3462 or permission of instructor. Laboratory Fee: \$8.

3462 Stratigraphy (2-3)

A study of the fundamental principles of stratigraphy with special emphasis on the stratigraphy of Southwestern United States and Northern Mexico. *Prerequisite:* GEOL 4320, 3325 or permission of instructor. Laboratory Fee: \$8.

3464 The Geology of Groundwater (3-0)

Study of the geology and hydrology of groundwater, occurrences, movements, fluctuations, and production, with emphasis on the groundwater resources of the Southwest. *Prerequisite:* GEOL 4323, 3325, or permission of instructor.

6465 Field Geology (Summer Field Course)

A six-week summer course in field geology. The work will include preparation of topographic and geologic maps, cross-sections, columnar sections, and detailed structural studies of areas embracing both sedimentary and igneous rocks; plane table and aerial

photo mapping techniques will be used. A report will be required of each student. Five hours of lecture and thirty-two hours of field week per week. *Prerequisites:* GEOL 3315, 4320, 4323, and permission of instructor. Transportation fee varies.

1466-3466 Special Problems

Special problems in geology; hours and subjects to be arranged with each student; for undergraduate students of senior standing who wish to do special work on special problems. No student may receive credit for more than six hours of special problem work. Application of Special Problems toward required upper division elective hours in the major is subject to prior approval by the departmental undergraduate studies committee. *Prerequisite:* Permission of Department Chairman.

3499 Honors Thesis (3-0)

Guided program of research culminating in the writing of a senior thesis.

Geophysics (GEOP)

For Undergraduates and Graduates

General Prerequisite: Junior standing for all 3300-3400 level courses.

3432 Exploration Geophysics: Seismic Methods (2-3)

A detailed treatment of seismic prospecting for oil and minerals, includes principles and current practices in seismic refraction and reflection prospecting, as well as related aspects of acoustic logging and other subsurface techniques. *Prerequisites:* MATH 3112, PHYS 4210 and 4211, GEOL 3101 or 4111 or 3321, or permission of instructor. Laboratory Fee: \$8.

3434 Exploration Geophysics: Non-Seismic Methods (2-3)

A quantitative treatment of gravity and magnetic fields of the earth as applied to exploration for oil and minerals. Some coverage of nuclear and electrical methods of prospecting. *Prerequisites:* PHYS 4210 and 4211, MATH 3112, GEOL 3101 or 4111 or 3321 or permission of instructor. Laboratory Fee: \$8.

1467-3467 Special Problems in Geophysics

Special problems in geophysics; hours and subjects to be arranged with each student; for undergraduate students of senior standing who wish to work on special problems. No student may receive credit for more than six hours of special problem work. *Prerequisite:* Permission of Department Chairman.

See the *Graduate Studies Catalog* for graduate programs and courses.

Mathematical Sciences

124 Bell Hall
(915) 747-5761

CHAIRMAN: Simon J. Bernau

PROFESSORS: Bernau, Boyer, Guthrie, Leahey, Nymann,

Przymusinski, Schuster, Srinivasan

ASSOCIATE PROFESSOR EMERITUS: Charles Herman Gladman

ASSOCIATE PROFESSORS: Foged, Gregory, Hall, Kaigh, Liguori,

Narvarte, Strauss

ASSISTANT PROFESSORS: Fitzpatrick, Fox, Gray, Hansen, Huntley,

Lopp, Ng, Provencio, Rojo, Sewell

B.S. Degree—Mathematics—Specific course requirements for the *Mathematical Sciences Degree* are: 4111, 3112, 3213, 3226, 3325, 3330, 3426, 3441; at least one course from 3319, 3327, 3328, 3425; at least two courses from 3429, 3437, 3442, 3480. Other course requirements are: PHYS 1120, 1121, 4210, 4211, and CS 4101 or 4120. The degree requires a minor as specified below; minor and courses must be approved by the undergraduate advisor.

B.S. Degree—Applied Mathematics—Specific course requirements for the applied mathematics degree are: 4111, 3112, 3200, 3213, 3226, 3323 or 3426, 3325, 3330, 3335 or 3442, 3429, 3480; at least three courses from MATH 3327, 3341 or 3441, 3353, 3436, 3437, 3443, 3499 (Senior Project). The degree requires two eighteen hour minors, one in Computer Science with emphasis on computation and one in an

application area; minor and courses must be approved by the undergraduate advisor. Other course requirements (which can be included in the applied minor or the additional science requirement) are PHYS 1120, 1121, 4210, 4211.

B.S. Degree—Statistics Option—Specific requirements for the statistics option are: 4111, 3112, 3213, 3323 or 3426, 3330, 3341 or 3441, 3380, 3381, 3429, 3480; six additional advanced hours from Mathematical Sciences or Computer Science; and CS 4101 or 4120 (with a grade of "C" or better). The degree requires a minor in an application area; minor and courses must be approved by the undergraduate advisor.

The minor is usually chosen from one of the disciplines in the Colleges of Science, Engineering, or Business Administration. The specific courses for the minor must be approved by the undergraduate advisor prior to the preparation of the degree plan. The required physics courses can also be counted towards a minor in physics or as meeting the need for an additional science (but not both). Similarly, the required computer science course can count towards a minor in computer science or towards the additional science (but not both). A student who has met all criteria except practice teaching for certification as a high school teacher may present any of the approved teaching fields to meet the requirements for a minor for the B.S. degree in Mathematics.

B.A. Degree—Mathematics—Specific course requirements are: 3325, 3341; two courses chosen from 3319, 3323, 3327, 3328, 3330, 3480; and one additional advanced course.

Advising—All undergraduate mathematics majors are required to consult with and have their enrollment forms signed by their department advisor before every enrollment.

Placement—Students who intend to register in MATH 4109, 3120, 4110, or 4111 must present an official document at registration showing that they have either an adequate placement examination score or received a grade of C or better in the prerequisite course.

Prerequisites—Students who intend to register in any Mathematics or Statistics course must present an official document at registration showing that they received a grade of C or better in all prerequisite courses.

Mathematics (MATH)

For Undergraduates

3105 Intermediate Algebra (3-0)

This course is designed for students who lack training in algebra needed for MATH 4110 or 3120. Basic topics such as signed numbers, exponents, factoring, fractions, radicals, and quadratic equations are included, along with systems of linear equations and determinants. This course counts as elective credit only. *Prerequisites:* One year of high school algebra and an adequate score on a placement examination.

4109 Precalculus I (3-1)

Topics include the algebra of real functions, graphs of functions, analytic geometry of first and second degree curves, rational functions, exponential and logarithmic functions, and polynomial equations. A one hour per week laboratory is mandatory for problem solving, testing, concept development, and course enrichment. *Prerequisite:* MATH 3105, or an acceptable score on a placement examination.

4110 Precalculus II (3-1)

Topics include trigonometry, vectors in two dimensions, rotations of coordinate axes, trigonometric form for complex numbers, polar coordinates, systems of equations, matrices, and analytic geometry of three dimensional space. A one hour per week laboratory session is mandatory for problem solving, testing, concept development, and course enrichment. *Prerequisite:* MATH 4109, or an acceptable score on a placement examination.

4111 Calculus (4-0)

Topics include limits, continuity, differentiation, and integration of functions of a single variable. *Prerequisites:* Four years of high school mathematics including trigonometry and analytic geometry and an adequate score on a placement examination, or MATH 4110.

3112 Calculus II (3-0)

Continuation of MATH 4111. Topics include special methods of integration and applications; infinite series. *Prerequisite:* MATH 4111.

3120 Mathematics for Social Sciences I (3-0)

Topics of college algebra and geometry including the algebra of sets; linear, quadratic, exponential and logarithmic functions; systems of linear equations and inequalities; matrix algebra; probability and statistics. *Prerequisites:* Three years of high school mathematics and an adequate score on a placement examination, or MATH 3105.

3121 Quantitative Study Skills (3-0)

A course designed to teach students how to interpret, set up, and solve problems in science and engineering courses. Short lectures and ample classroom practice. May not count toward any mathematics requirement or block elective requirement. In the College of Business, may count for free elective credit only.

3200 Discrete Mathematics (3-0)

Topics in discrete mathematics including induction and recursion, sets and relations, combinatorics, graph theory, finite automata, and logic. *Prerequisite:* MATH 4110 or equivalent.

3201 Mathematics for Social Sciences II (3-0)

Topics include linear programming and an introduction to differential and integral calculus with applications to business and the social sciences. *Prerequisite:* MATH 3120 or 4110.

3203 Classroom Mathematics I (3-0)

A study of the structure of the real number system and its subsystems, emphasizing concepts usually taught in elementary school. Topics include set theory, numeration, counting numbers, integers, rational and real numbers, decimal representation, and elementary number theory. The notions of group, ring, and field are presented. May not be counted towards a major or minor on the B.A. degree in the College of Liberal Arts, the B.S. degree in the College of Science, or towards the minimum requirements of the B.S. degree in the College of Nursing or the College of Engineering. *Prerequisites:* MATH 4109 or 3120, satisfactory completion of an arithmetic skills test, current registration in elementary education, and junior standing.

3213 Calculus III (3-0)

Continuation of MATH 3112. Topics include solid analytic geometry, partial differentiation, and multiple integrals. *Prerequisite:* MATH 3112.

3226 Differential Equations (3-0)

A study of first order equations, linear equations with constant coefficients; general linear equations, the method of variation of parameters, the Laplace transform, and power series solutions. *Prerequisite:* MATH 3112.

3300 History of Mathematics (3-0)

An historical development of some of the important ideas in mathematics including the development of Geometry with focus on the development of non-Euclidean geometries, the development of the Calculus, the development of Modern Algebra, the development of Statistics and important developments in Mathematical Logic. *Prerequisite:* At least two junior level courses in Mathematics.

3303 Classroom Mathematics II (3-0)

A continuation of MATH 3203. *Prerequisite:* MATH 3203. May not be counted towards a major or minor on the B.A. degree in the College of Liberal Arts, the B.S. degree in the College of Science, or towards the minimum requirements of the B.S. degree in the College of Nursing or the College of Engineering.

3304 Classroom Geometry (3-0)

A development of geometrical ideas using an informed approach and emphasizing concepts usually taught in elementary schools. Notations of distance, Euclidean and non-Euclidean geometry are discussed. *Prerequisite:* MATH 3203. May not be counted towards a major or minor on the B.A. degree in the College of Liberal Arts, the B.S. degree in the College of Science or towards the minimum requirements of the B.S. degree in the College of Nursing or the College of Engineering.

3319 Elementary Number Theory (3-0)

An introduction to some of the classical topics in number theory including divisibility, congruences, quadratic reciprocity, Diophantine equations and the distribution of primes. *Prerequisite:* MATH 3112.

3323 Matrix Algebra (3-0)

Systems of linear equations, matrices, determinants, eigenvalues and eigenvectors, diagonalization, vector spaces and linear transformations. *Prerequisite:* MATH 3112.

3325 Principles of Mathematics (3-0)

Logic and proofs, elements of set theory, relations and functions. *Application of these ideas:* Cardinality, groups and their quotients, the field of real numbers. *Prerequisite:* MATH 3112.

3327 Applied Algebra (3-0)

Study of problems from one of the following subjects: Automata Theory; Formal Languages; Information Theory; Theory of Algorithms; Artificial Intelligence. This course deals with the theoretical components of computer science and is also of interest to students of structural/theoretical features in such disciplines as biology, linguistics, social science, and in learning theory. *Prerequisite:* Junior standing. May be repeated for credit if subjects differ.

3328 Foundations of Mathematics (3-0)

Study of principles of mathematical thinking and of common objects of mathematical thought. Emphasis on one of these aspects: Logic; Set Theory; Geometry; Topology. May be repeated for credit if subjects differ. *Prerequisite:* Junior standing or permission of instructor.

3335 Applied Analysis I (3-0)

Line and surface integrals, change of variable in multiple integrals, vector analysis and an introduction to complex variables. *Prerequisite:* MATH 3213.

3341 Introduction to Analysis (3-0)

A theoretical study of the foundations of the calculus of functions of one variable. Includes the real number system, convergence, continuity, differentiability and elementary integration theory. *Prerequisite:* MATH 3112.

3353 Mathematical Programming (3-0)

Theory and applications of linear, dynamic, integer, and nonlinear programming; linear inequalities; optimization; duality; simplex algorithm. *Prerequisites:* CS 4120 and MATH 3323.

3425 Modern Algebra (3-0)

Groups, rings, integral domains, and fields. *Prerequisite:* MATH 3325.

3426 Linear Algebra (3-0)

Vector spaces, linear transformations and matrix representations, canonical forms, eigenvalues, invariant subspaces, orthogonal and unitary transformations, bilinear and quadratic forms. *Prerequisite:* MATH 3325.

3429 Numerical Analysis (3-0)

The course covers numerical algorithms for approximation of functions, quadrature, solution of ordinary differential equations, solution of nonlinear equations, solution of linear systems of equations, computing eigenvalues and eigenvectors. Many computer applications will be required. *Prerequisites:* MATH 3323 and CS 4120 or equivalent.

3436 Applied Analysis II (3-0)

Series solutions of differential equations. Fourier series and Fourier integrals. Bessels's equation and Bessel functions. Legendre's equation and Legendre polynomials, the Sturm-Liouville problem and eigenfunction expansions, and an introduction to partial differential equations. *Prerequisite:* MATH 3226.

3437 Complex Analysis (3-0)

The definition of the elementary analytic function, differentiation, integration, Taylor series, and an introduction to conformal mapping. *Prerequisite:* MATH 3335 or 3341 or 3441.

3441 Real Analysis I (3-0)

Investigation of convergence, continuity, compactness, and connectedness in a metric space setting, the Riemann integral and series of functions with applications of these concepts in other branches of analysis. *Prerequisite:* MATH 3325 or 3341.

3442 Real Analysis II (3-0)

Differentiation and integration in Euclidean n-space including multiple integrals, line integrals and surface integrals. *Prerequisites:* MATH 3441 and either 3323 or 3426.

3443 Advanced Topics from Differential Equations (3-0)

A course in one of the disciplines from differential equations, such as partial differential equations, systems of ordinary differential equations, or numerical solutions of differential equations. *Prerequisites:* MATH 3226 and consent of instructor. May be repeated once for credit if topics differ.

1470-3470 Topics Seminar

Organized lectures in mathematics on topics not represented among the other course offerings. *Prerequisite:* Junior standing; additional prerequisites may be announced as required by the topic. May be repeated for credit.

3499 Individual Studies In Mathematics

Studies of topics not included in or going beyond the regular course offerings. *Prerequisite:* Students must make arrangements with the Department Chairman prior to enrolling. May be repeated for credit. Not to be counted towards major requirement.

Statistics

Minor In Statistics: Students may minor in Statistics by taking 18 hours (six advanced) as follows: CS 4120 or equivalent, MATH 3201 or 4111, plus 12 units from Statistics 3280, 3281, 3330, 3380, 3480. Students who plan to pursue graduate studies in statistics related areas are urged to take Statistics 3480.

For Undergraduates

3280 Statistical Methods I (3-0)

An elementary introduction to statistical concepts and methods. Descriptive statistics, elementary probability, binomial distribution, normal distribution, estimation and hypothesis testing for one- and two-sample problems, simple linear regression and correlation. *Prerequisite:* MATH 3105 or equivalent. Concurrent enrollment in Statistics 1282 is encouraged.

3281 Statistical Methods II (3-0)

A continuation of Statistics 3280 with treatment of more advanced statistical methods. Chi-square goodness-of-fit and contingency table analysis, analysis of variance and multiple comparisons, multiple linear regression and correlation and analysis. *Prerequisite:* MATH 3280.

1282 Computing Laboratory for Statistics 3280 (1-1)

Practical exercises in the handling of statistical data and experimental sampling as related to the coursework in Statistics 3280. Includes an introduction to data processing.

3330 Probability (3-0)

Theory and applications of probability models. Sample space, combinatorics, conditional probability, random variables, discrete and continuous probability distributions, expectation, moment generating functions, law of large numbers, central limit theorem. *Prerequisite:* MATH 3213.

3380 Sampling Techniques (3-0)

An account of sampling theory with practical applications; the role of sampling theory, simple random sampling, sampling for proportions, the estimation of sample size, stratified random sampling, systematic sampling. *Prerequisite:* Statistics 3280 or 3330 or equivalent.

3381 Nonparametric Statistical Methods (3-0)

Distribution-free procedures; nonparametric one and two sample tests for location and scale; nonparametric analysis of variance; nonparametric correlation. *Prerequisite:* MATH 3280 or equivalent.

3480 Statistics I (3-0)

A calculus-based development of statistical concepts and methods. Distribution theory, point and interval estimation and hypothesis testing in parametric statistical models, chi-square goodness-of-fit and contingency table analysis, simple linear regression analysis, introduction to analysis of variance. *Prerequisite:* Statistics 3330.

See the *Graduate Studies Catalog* for graduate programs and courses.

Physics

210 Physical Science
(915) 747-5715

INTERIM CHAIRMAN: Clarence H. Cooper
PROFESSORS EMERITI: Thomas Grogard Barnes, Max Carlton Bolen, Clarence Sharp Cook, Oscar Harry McMahan
PROFESSORS: Brient, Bruce, Craig, Lawson, McIntyre
ASSOCIATE PROFESSORS: Blue, Cooper, Dean, Schumaker
ASSISTANT PROFESSORS: Davies, Slusher
VISITING ASSISTANT PROFESSOR: Durrer

B.S. Degree—specific course requirements for the Physics major are: PHYS 3109, 1120, 4210, 1121, 4211, 1218, 3325, 3331, 2343, 3351, 3352, 3432, 3441, 3442, 2446, 3455 and 3456.

Applied Physics Concentration—The department offers physics majors the opportunity to obtain a concentration in applied physics. Sequences may be completed in Instrumentation Physics, Computational Physics, Physics of Materials and Environmental Physics. In order to obtain the B.S. in Physics with a concentration in Applied Physics, 12 hours of approved relevant upper division courses may be substituted for PHYS 3352, 3432, 3442 and 3456. Substitutions must be approved in advance by the undergraduate advisor of the Department of Physics.

B.A. Degree—specific course requirements for the Physics major are: PHYS 3109, 1120, 4210, 1121, 1218, 4211, 3325, 2343, 3351, 3441, 2446, and 3455. Mathematics is the suggested minor for a physics major; other minors can be substituted upon approval of the undergraduate advisor.

All undergraduate physics majors are required to consult with and have their registration forms signed by the undergraduate advisor in the Physics Department each semester before registering.

Physics Honors Program: The Physics Honors Program is designed to recognize and enhance the development of talented physics students. The program consists of departmental awards for outstanding achievement, special courses, seminars and research laboratories for honors students and the department's Summer Honors Program. In addition, Physics Honors Students are also eligible to earn the B.S. degree with Departmental Honors and to participate in the five year B.S./M.S. Program.

Incoming freshmen or students with fewer than thirty (30) semester hours of credit are eligible to be Physics Honors Students if they graduated in the top 20% of their high school graduating class and their combined SAT score is 1000 or more with at least 600 on the math portion of the SAT (or equivalent for other examinations). Students with thirty (30) or more semester hours credit must have a minimum 3.2 grade point average (with at least 3.2 GPA in all physics and mathematics courses) to be eligible.

Summer Honors Program

Participants in the Summer Honors Program are awarded a modest summer stipend and enroll in either PHYS 1217 or 2217 for participation in an unusual program of design, fabrication and testing of special laboratory and instructional equipment. Honors students invited to participate in this program work closely with several faculty members on individual or team projects which are fitted to the experience and interests of the individual students.

B.S. Degree with Physics Department Honors

Physics Honors students who satisfactorily complete an undergraduate Honors Thesis based on research in Physics are eligible to receive the B.S. degree with Departmental Honors in Physics. Usually the research will be carried out under the direction of a member of the faculty of the Department of Physics. The satisfactory completion of

the Honors Thesis will be judged by the Thesis research director in conjunction with the Physics Department's Honors Committee. The candidate for Department Honors must request approval of candidacy prior to the beginning of the senior year. Upon acceptance by the department, the candidate shall enroll in PHYS 1477-3477 for successive semesters and must have accumulated a total of six (6) semester hours of PHYS 1477-3477 credit on completion of the Honors Thesis Program.

Five Year B.S.—M.S. Program

The Department of Physics provides an opportunity for qualified students to participate in a five year bachelor/master of science degree program. The program is limited to students who maintain at least a 3.0 grade point average. Freshmen honors students should consult with the departmental undergraduate advisor about the details of this program including course selection and admission to the Graduate School.

Physical Science (PSCI)

3101 Principles of Physical Science (2-2)

Designed to introduce as clearly and simply as possible the concepts of physical science to non-science students, and especially those students with a limited background in mathematics. Laboratory experiments will be performed by students in this course. May not be counted as physics toward a major or minor in physics. Laboratory Fee: \$8.

3102 Application of Physical Science In Society (3-0)

The applications of physical science to societal problems with special emphasis on energy, energy resources, and energy utilization. May be taken independently of PSCI 3101. May not be counted toward a major or minor in physics, but may be counted as a laboratory science for business students.

3106 Elementary Theory of Sound (3-0)

A study of sound as related to speaking, singing, and to musical instruments. It includes physical principles of sound production, transmission, interference, hearing, resonance, pitch, quality, musical intervals, stringed instruments, wind instruments, acoustics of rooms, and associated electronic equipment. May not be counted toward a major or minor in physics or as a prerequisite to any course in physics.

Astronomy (ASTR)

3107 Elementary Astronomy of the Solar System (3-0)

A survey of the solar system. Topics include astronomical history and instruments, the planets and their moons, comets, and meteors. The course includes field observation with telescopes. May not be counted toward a major or minor in physics, but may be counted as a laboratory science for liberal arts and business students. Liberal arts students are encouraged to take ASTR 1107 concurrently.

1107 Astronomy Laboratory I (0-2)

Basic laboratory exercises in solar system astronomy. The laboratory experiments and exercises will provide the student with an introduction to the concepts and methods employed by the astronomer in studying the solar system. This course may be taken concurrently with ASTR 3107. *Prerequisite:* ASTR 3107 or concurrently. Laboratory Fee: \$8.

3108 Elementary Astronomy of Stars and Galaxies (3-0)

May be taken independently of ASTR 3107. Topics include stellar properties, galaxies, and cosmology. May not be counted toward a major or minor in physics, but may be counted as a laboratory science for liberal arts and business students. Liberal arts students are encouraged to take ASTR 1108 concurrently.

1108 Astronomy Laboratory II (0-2)

Continuation of ASTR 1107 except applied to the stellar systems. *Prerequisite:* ASTR 3108 or concurrently. Laboratory Fee: \$8.

Physics (PHYS)

4103 General Physics (3-2)

Mechanics and heat. May not be counted toward a major or minor in physics. May be counted as a laboratory science in the liberal arts curriculum and the teaching field requirement in education programs. Laboratory Fee: \$8.

4104 General Physics (3-2)

Electricity, magnetism, sound, and light. May not be counted toward a major or minor in physics. May be counted as a laboratory science in the liberal arts curriculum and the teaching field requirement in education programs. *Prerequisite:* PHYS 4103. Laboratory Fee: \$8.

3109 Fundamental Concepts of Physics (3-0)

The key concepts of physics and how they affect intellectual thought in physics and western culture. A course stressing discussion and minimizing mathematics. Designed for freshman Physics majors. Recommended for University Honors students and others with instructor's approval.

4210 Mechanics and Thermal Physics (4-1)

Dynamics of particles and rigid bodies using vectors and calculus, conservation of energy and momentum, kinetic theory and thermal physics. *Prerequisite:* MATH 4111 or concurrently.

4211 Fields and Waves (4-1)

Electric field and potential; current and magnetism; time varying fields and electromagnetic waves, waves in elastic media; interference and theory of waves. *Prerequisites:* PHYS 4210, MATH 3112, or concurrently.

1120 Physics Laboratory I (0-3)

Basic laboratory techniques, elementary error analysis and curve fitting of experimental measurements. *Prerequisite:* Two years high school algebra. Laboratory Fee: \$8.

1121 Physics Laboratory II (0-3)

Continuation of PHYS 1120. *Prerequisite:* PHYS 1120 or equivalent as determined by instructor. Laboratory Fee: \$8.

1216-2216 Undergraduate Seminar (1-0, 2-0)

Seminar on selected topics in modern or contemporary physics. Normally for Physics honors students. May be repeated for credit as study topic changes. *Prerequisites:* Registration by invitation or with approval of the instructor.

1217-2217 Lower-division Research Problems (0-3, 0-6)

Supervised laboratory research normally in topics related to content of concurrent Undergraduate Seminar (PHYS 1216 or 2216). Normally for Physics honors students. May be repeated for credit. *Prerequisites:* Registration by invitation or with approval of the instructor. Laboratory Fee: \$8.

1218 Intermediate Laboratory (0-3)

Intermediate laboratory techniques: electronic equipment, devices and minicomputers in experimental physics. May be repeated once for credit. With the undergraduate advisor's approval Physics honors students may substitute PHYS 1217-2217 for this course. *Prerequisites:* PHYS 1121 or equivalent. Laboratory Fee: \$8.

For Undergraduates and Graduates

3323 Physical Optics (3-0)

Wave propagation, interference, diffraction, absorption, scattering, and polarization. The theory and operation of lasers and optical resonant cavities are introduced. *Prerequisite:* PHYS 4211.

3325 Survey of Modern Physics (3-0)

Survey of topics from atomic, molecular, nuclear, and solid state physics. *Prerequisite:* PHYS 4211.

3331 Thermal Physics (3-0)

Introduction to the laws of methods of thermodynamics. *Prerequisites:* PHYS 4211 and MATH 3213.

2343 Advanced Laboratory Practice (0-6)

Topics and practices of modern experimental physics. May be repeated once for credit. *Prerequisites:* PHYS 1121 and 4211 or permission of instructor. Laboratory Fee: \$8.

3351 Analytical Mechanics (3-0)

Dynamics of particles and rigid bodies via Newtonian, Lagrangian, and Hamiltonian equations of motion. *Prerequisites:* PHYS 4211; MATH 3226 or concurrently.

3352 Advanced Mechanics (3-0)

Topics in mechanics such as mechanics of deformable bodies, mechanical radiation, and rheology. *Prerequisite:* PHYS 3351 or equivalent.

3359 Astrophysics (3-0)

The physical basis for stellar radiation, stellar motions, binary and variable stars, stellar interiors, and the formation of energy in stars, interstellar matter, galaxies, and cosmology. *Prerequisites:* PHYS 4211 and MATH 3226.

3360 Biophysical Mechanics (3-0)

A study of the application of continuum mechanics, thermal physics, bioelasticity, and acoustics to the description of life processes, characteristics of biomaterials, diffusion and transport processes, and ultrasound. The physical topics studied are selected according to their relevance to biology. *Prerequisites:* PHYS 4211 and MATH 3213.

3428 Theoretical Geophysics (3-0)

A study of the theory of potential, thermodynamics of the earth, and hydrodynamics. Emphasis is on the solving of various problems associated with the natural force fields of the earth. *Prerequisites:* PHYS 4211 and MATH 3226.

3432 Statistical Physics (3-0)

The statistical foundations of thermodynamics. *Prerequisite:* PHYS 3331.

3441 Electromagnetics I (3-0)

Electromagnetic theory via Maxwell's equations. *Prerequisites:* PHYS 4211 and MATH 3213.

3442 Electromagnetics II (3-0)

Advanced topics in electromagnetic theory such as relativistic electrodynamics, electromechanical systems, electromagnetic waves and radiating systems. *Prerequisites:* PHYS 4211 and MATH 3213.

2446 Experimental Physics (3-0)

Topics in experimental physics. May be repeated once for credit. *Prerequisite:* PHYS 2343. Laboratory Fee: \$8.

3448 Fundamentals of Acoustics (3-0)

The principles underlying the generation, transmission, and reception of acoustic waves. Mathematical analysis of the various types of vibration of solid bodies. Propagation of plane and spherical sound waves through fluids, transmission and absorption phenomena, resonators and filters. *Prerequisites:* PHYS 4211 and MATH 3226.

3453 Methods of Mathematical Physics (3-0)

Selected topics in mathematical physics. *Prerequisites:* MATH 3226 and six advanced hours of physics or engineering.

3455 Modern Physics I (3-0)

Study of topics from modern physics with emphasis on introductory quantum mechanics and its applications to atomic, molecular, nuclear, and solid state physics. *Prerequisite:* PHYS 3325 and MATH 3226.

3456 Modern Physics II (3-0)

A continuation of Physics 3455. *Prerequisite:* PHYS 3455.

3475-4475 Special Topics in Physical Science for Teachers

Designed for students in elementary or secondary education. This course is not designed to fulfill the science requirements for a Liberal Arts degree. May be repeated for credit upon change of subject. May not be counted toward a major or minor in physics. *Prerequisites:* Junior standing and permission of instructor.

1477-3477 Undergraduate Research Problems in Physics

Supervised individual research. May be repeated for credit. Students taking this course partially fulfill the requirements for the B.S. degree with Departmental Honors in Physics; they must complete six semester hours of PHYS 1477-3477 and submit an Undergraduate Thesis on the research accomplished. *Prerequisites:* Senior standing with a 3.2 grade point average or better and permission of both the research advisor and the department undergraduate advisor.

3478 Undergraduate Special Topics in Physics (3-0)

Topics to be announced. May be repeated for credit upon change of subject. *Prerequisite:* To be announced.

See the *Graduate Studies Catalog* for graduate programs and courses.

University Honors Program

309 Miners' Hall
747-5858

Director: Richard Ford

The University Honors Program offers students a richer, more intense and challenging academic experience, as well as closer, more personalized contact with faculty and fellow students. Enrollment in Honors classes is limited to 20. Students must apply to participate in the program. To be eligible, entering freshmen must have graduated in the top 15% of their high school class and/or obtained a superior score on the SAT or ACT. Maintenance of a prescribed cumulative 3.3 grade point average is the criterion for admitting current or transfer students and for continuance in the program.

The program offers two options:

UNIVERSITY HONORS DEGREE—Candidates will take Honors sections of nearly all of their basic required courses and will complete either 6 hours of upper-division Honors courses or a 6-hour Honors Senior Project in their major. Recipients of the University Honors Degree must complete the following course requirements:

ENGL 3111-3112. At least 3 hours of English must be taken for Honors credit. Entering freshmen who place beyond ENGL 3112 will take an Honors sophomore or upper-division course.

HIST 3101-3102 or 3103-3104. At least 3 hours of History must be taken for Honors credit.

POSC 3110-3111. At least 3 hours of Political Science must be taken for Honors credit.

8 hours of courses given by the departments of Biological Sciences, Chemistry, Geological Sciences, or Physics. At least 3 hours of science must be taken for Honors credit.

Complete 6 hours of upper-division work for Honors credit. Three of these hours may be satisfied through approved independent study.

OR

Complete a 6-hour Honors Senior Project.

Additional Honors credits as required to bring the total to 30 hours.

With approval of a student's departmental advisor and the Honors director, a maximum of 6 of these 30 hours may be taken on a Pass/Fail basis. Credits obtained on this basis may be used only for elective credit if approved by the student's academic department. Courses taken on a Pass/Fail basis are disregarded in determining the grade point average, thereby perhaps encouraging Honors students to venture a course for which they might otherwise feel inadequately prepared.

Completion of the above requirements with an overall cumulative GPA of 3.3 or higher entitles the student to receive the University Honors Degree. The notation "University Honors Degree" will be added to the permanent academic record and the diploma, and all Honors courses completed will be marked with (H). In several departments, completion of the Honors Senior Project may also qualify the student for Departmental Honors recognition.

UNIVERSITY HONORS CERTIFICATE—Students who wish to pursue a less comprehensive Honors curriculum may elect to obtain the University Honors Certificate by completing 18 hours of Honors course work. At least 6 hours must be upper-division, and 3 of these may be by approved independent study. A maximum of 3 Honors hours may be taken on a Pass/Fail basis, with the same restrictions described for such courses in the University Honors Degree option. Upon graduation with a cumulative GPA of 3.3 or higher, the notation "University Honors Certificate" will appear on the permanent academic record and on the diploma, and all honors courses completed will be marked with (H) on the transcript.

Honors (HON)

3300 Honors Colloquium (3-0)

Examination of a special topic or interdisciplinary area. May be repeated once for credit as subject varies. *Prerequisite:* Permission of the Honors program director.

3495-3496 Honors Senior Thesis

Students will conduct research under the direction of a faculty member in their major department and report their findings in thesis form. During the first semester (HON 3495), a prospectus prepared by the student describing the proposed thesis will be filed with the Honors office. The completed thesis will be defended orally.

(Note: Students in the University Honors Program who are also candidates for departmental honors in their major may carry out Honors thesis research by enrolling in special courses offered by their respective departments for this purpose and substitute credit earned in this way for HON 3495-3496.)

The Faculty

- LONNIE LEE ABERNETHY, P.E.**, Professor Emeritus of Metallurgical Engineering, 1963
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B.A., Valparaiso University; M.A., Western Michigan University
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- DOREENE WARD ALEXANDER, R.N.C.**, Assistant Professor in Nursing, 1984
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- KENNETH KYLE BAILEY**, Professor of History, 1960
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- STANLEY EUGENE BALL**, Associate Professor of Educational Administration and Policy Studies, 1964
B.S., University of Wyoming; M.S., University of Arizona; Ph.D., New Mexico State University
- MARIE ESMAN BARKER**, Associate Professor of Elementary and Secondary Education Studies, 1968
B.A., M.A., The University of Texas at El Paso; Ed D., New Mexico State University
- THOMAS S. BARKER**, Instructor of Economics, 1987
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B.S.C.E., Southern Methodist University; M.S.C.E., The University of Texas at Austin; Ph.D., Texas A&M University
- CHARLES RICHARD BATH**, Professor of Political Science, 1966
B.A., University of Nevada; M.A., Ph.D., Tulane University
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- ANNA BECHTEL**, Assistant Professor in Nursing, 1985
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B.S., M.A., Sul Ross State University; Ph.D., Cornell University
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B.S.Met.E., University of Utah; M.S., Ph.D., New Mexico Institute of Mining and Technology
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B.S., Baylor University; M.A., The University of Texas at Austin
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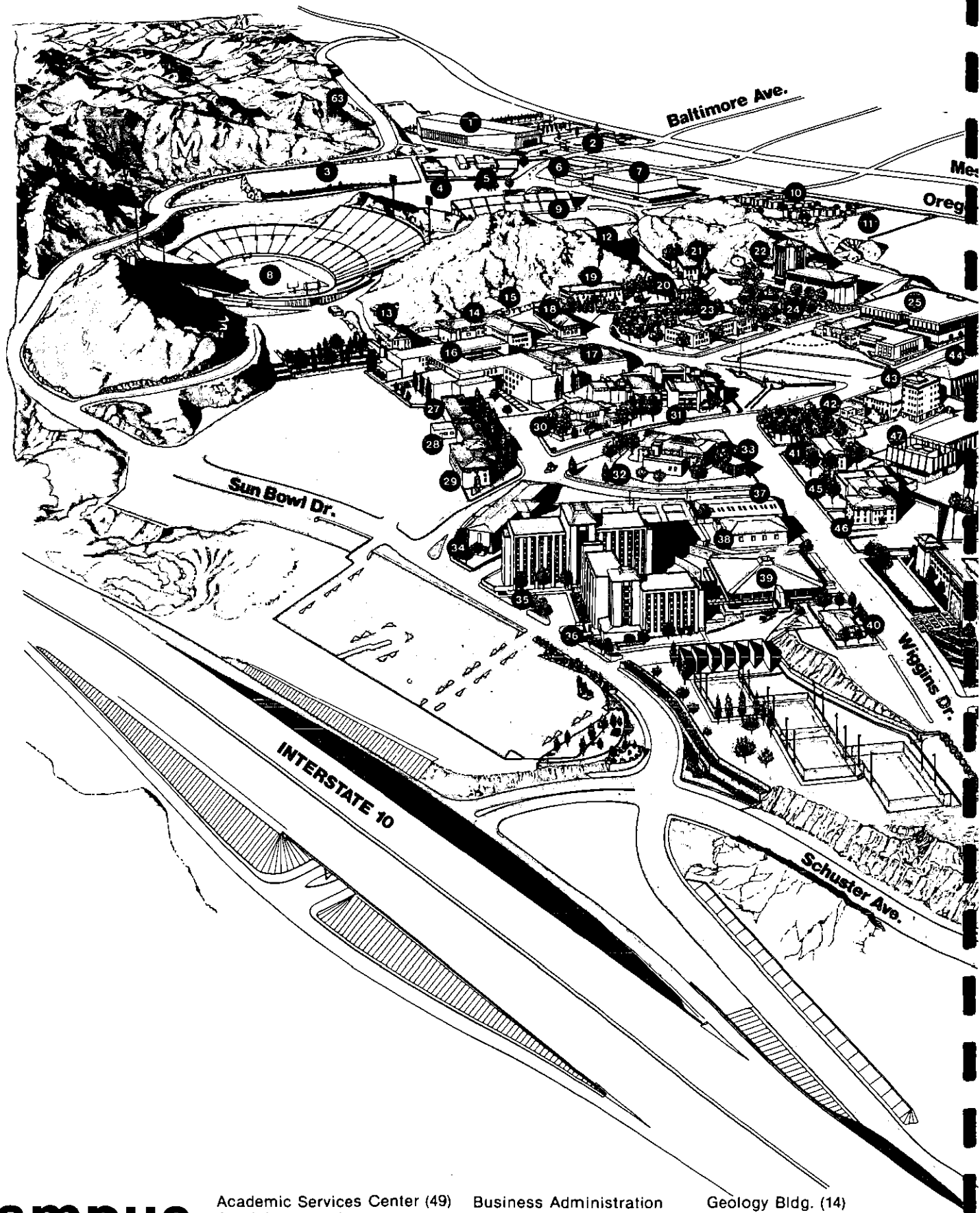
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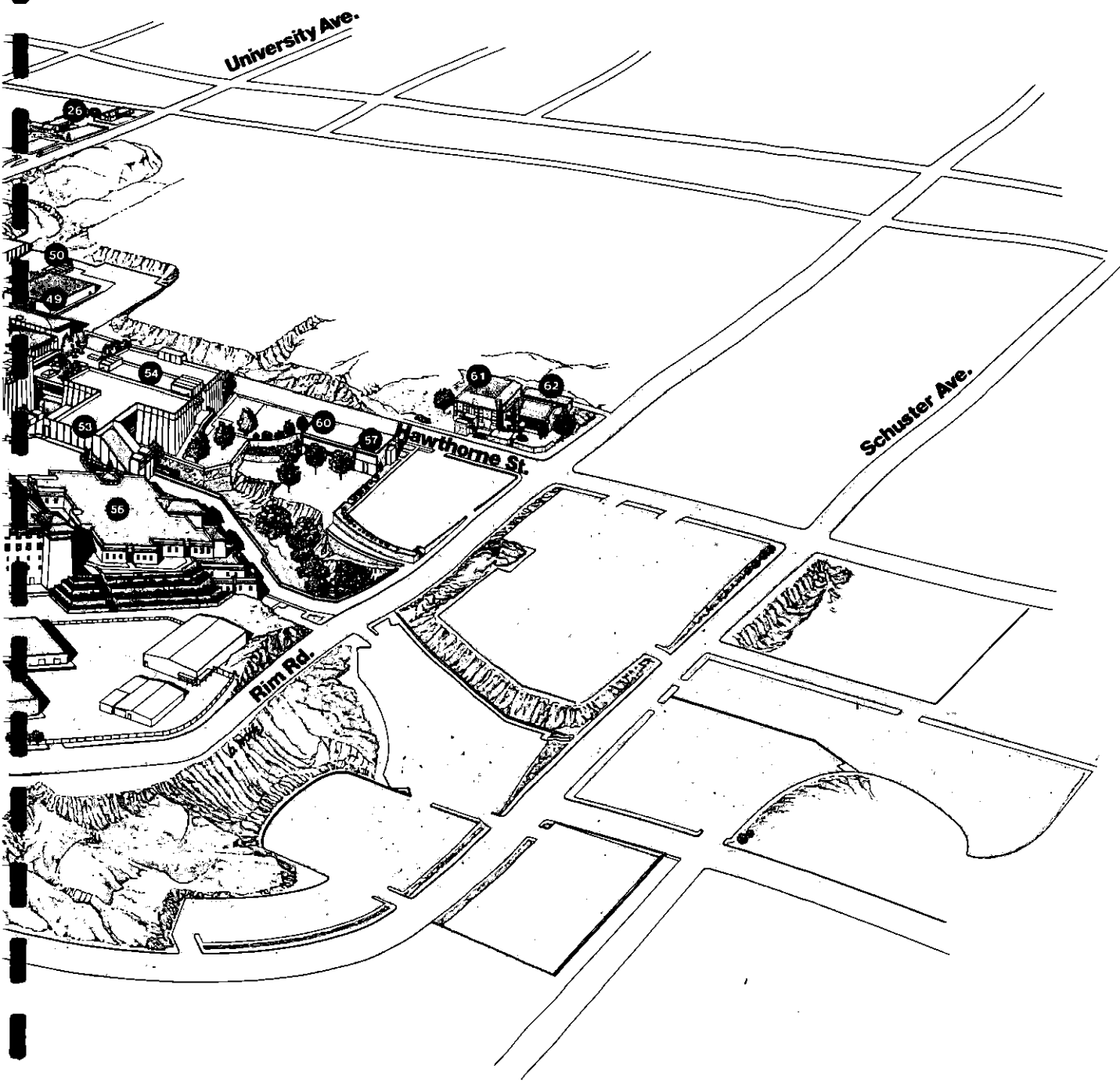
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| Administration Annex (Development/Alumni) (42) | Centennial Museum (32) | Geology Bldg. (future site) (31) |
| Administration Bldg. (43) | Central Energy Plant (47) | Graham Hall (21) |
| Auxiliary Gym (6) | Classroom Bldg. (52) | Health Service (40) |
| Barry Hall (Dormitory) (35) | Commons (39) | Holliday Hall (12) |
| Bell Hall (46) | Computer Center (45) | Housing, Student Family (10) |
| Benedict Hall (41) | Cotton Memorial Bldg. (30) | Hudspeth Hall (29) |
| Biology Bldg. (51) | Education Bldg. (22) | Kelly Hall (Dormitory) (36) |
| Brumbelow Bldg. (5) | Engineering Bldg. (54) | Kidd Field (9) |
| Burges Hall (Dormitory) (34) | Fox Fine Arts Center (16) | Kidd Seismic Observatory (15) |
| | | Liberal Arts Bldg. (44) |



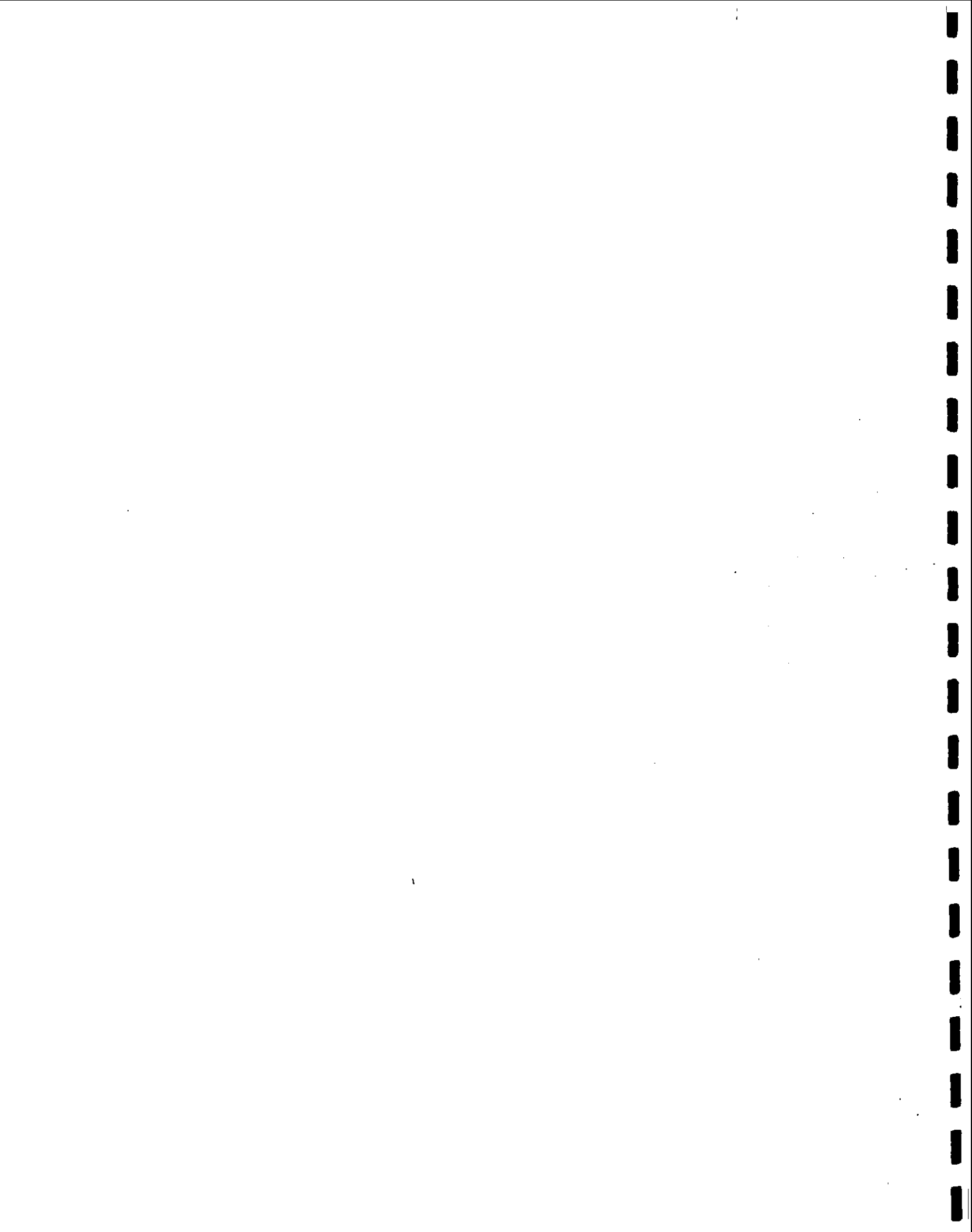
- Library, Central (55)
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- Special Projects Ctr. (24)
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- Sun Bowl Stadium (8)
- Swimming Pool (37)
- Texas Western Press (57)

- Ticket Ctr. (2)
- Union Bldg. (25)
- Upper Intramural Field (3)
- Vowell Hall (20)
- Women's Gym (38)
- Worrell Hall (28)

*The College of Nursing and Allied Health is located at 1101 N. Campbell St., corner of Campbell and Arizona streets.



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Location and telephone numbers for academic deans and departments, and for many other offices, are shown in the appropriate section of this catalog. For other numbers, the University directory operator can be reached at (915) 747-5005.

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Financial Aid	Office of Financial Aid 202 West Union (915) 747-5204
Financial Information	Cashier's Office — Bursar Academic Services Building (915) 747-5105
Health Services	Student Health Service Wiggins Drive (915) 747-5624
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Registration, Records, Schedule Book and Transcript Information	Office of the Registrar Academic Services Building (915) 747-5544
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New Student Information	Office of Undergraduate Recruitment and Scholarships Academic Services Building (915) 747-5896
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Veterans Information	Office of the Registrar Academic Services Building (915) 747-5342

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