



**THE UNIVERSITY
OF TEXAS
AT EL PASO**
Undergraduate Studies
1985-1987

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The University of Texas at El Paso

Undergraduate Studies Catalog 1985-1987

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GENERAL INFORMATION

University History

In 1988, the University of Texas at El Paso will celebrate its Diamond Jubilee, the 75th anniversary of its founding by the Texas Legislature. Originally the State School of Mines, at first it was located on the present Fort Bliss Military Reservation where an historic monument now marks the site. After a damaging fire, the school moved in 1916 to the present campus in the western foothills of the Franklin Mountains overlooking the Rio Grande.

The distinguishing characteristic of the campus is the Bhutanese architectural style, unique in the Western Hemisphere. It was inspired by the wife of the first dean who had seen photographs of Bhutan's distinctive buildings in a rugged mountain setting similar to that of the college. As new structures have been added through the years, architects have continued the original theme.

Among important landmarks in the University's history are these: in 1919 the institution became a branch of The University of Texas System; in 1927 liberal arts courses were added to the curriculum; in 1940 the Master of Arts became the first graduate degree offered; in 1949 the name was changed from College of Mines and Metallurgy to Texas Western College (enrollment 2,283); and in 1967 the name became The University of Texas at El Paso (enrollment 9,029).

Continuing growth has characterized the recent years in numbers of students, new facilities, faculty members from all over the world, and programs offered.

Enrollment passed the 10,000 mark for the first time in 1968 and in 1977 reached a record high of 15,836. 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, opened 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.

The University has six colleges: Business Administration, Education, Engineering, Liberal Arts, Science, and Nursing and Allied Health. Both baccalaureate and 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.

Although most of the students are from Texas, the annual enrollment usually includes about 1,000 students from about 60 foreign countries. Because of its proximity to the international border, the University has the largest enrollment of Mexican citizens of any college or university in the United States.

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.

Board of Regents

OFFICERS

JESS HAY, Chairman
ROBERT B. BALDWIN III, Vice-Chairman
SHANNON H. RATLIFF, Vice-Chairman
ARTHUR H. DILLY, Executive Secretary

MEMBERS

Terms Expire February 1, 1987:

JANEY SLAUGHTER BRISCOE (MRS. DOLPH), Uvalde
BERYL BUCKLEY MILBURN (MRS. MALCOLM), Austin
TOM B. RHODES, Dallas

Terms Expire February 1, 1989:

ROBERT B. BALDWIN III, Austin
JESS HAY, Dallas
MARIO YZAGUIRRE, Brownsville

Terms Expire February 1, 1991:

JACK S. BLANTON, Houston
SHANNON H. RATLIFF, Austin
BILL RODEN, Midland

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

HASKELL M. MONROE, JR., *President*, 1980*
B.A., M.A., D.H.L. (Hon.), Austin College; Ph.D., Rice University

DIANA S. NATALICIO, *Vice President for Academic Affairs*, 1971
B.S., St. Louis University; M.A., Ph.D., The University of Texas at Austin

WILLIAM C. ERSKINE, C.P.A., *Vice President for Business Affairs*, 1981
B.A., University of Washington

JOSE FERNANDO AVILA, *Dean of Students*, 1971
B.S., M.Ed., The University of Texas at El Paso

MICHAEL EVAN AUSTIN, *Dean, The Graduate School*, 1963
B.S.E.E., M.S.E.E., Ph.D., The University of Texas at Austin

JAMES VINCENT DEVINE, *Dean, The College of Liberal Arts*, 1967
B.S., M.S., University of New Mexico; Ph.D., Kansas State University

WILLIAM PHILLIP DUNLAP, *Dean, The College of Education*, 1982
B.S., Southwest Missouri State University; M.S., Ph.D. University of Oregon

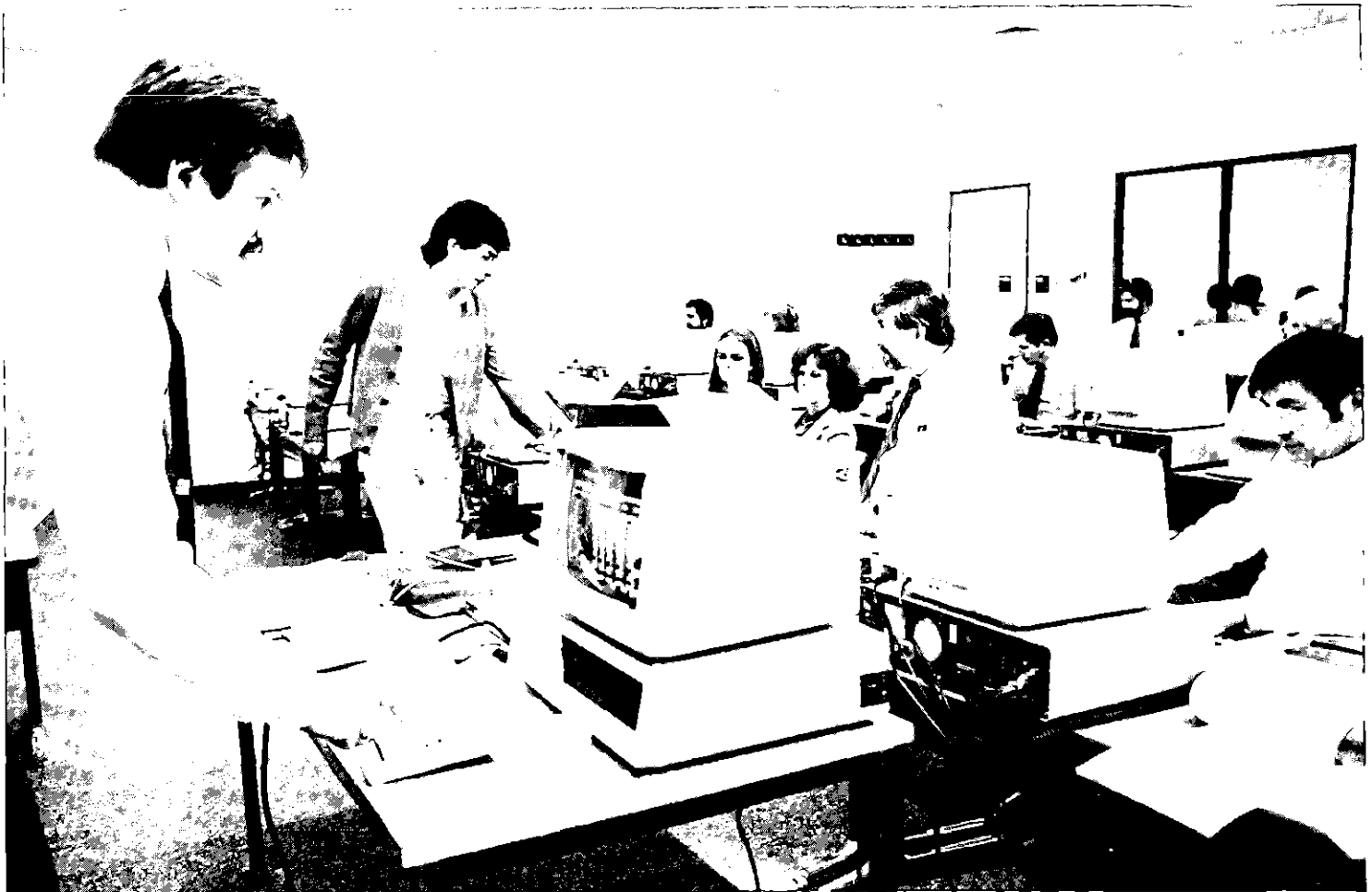
ROBERT BELANGER GRIEVES, *Dean, The College of Engineering*, 1982
B.A., M.S., Ph.D., Northwestern University

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

WILLIAM CECIL HERNDON, *Dean, The College of Science*, 1972
B.S., The University of Texas at El Paso; Ph.D., Rice University

EILEEN M. JACOBI, R.N., *Dean, The College of Nursing and Allied Health*, 1976
B.A., M.A., Adelphi College; Ed.D., Teachers College, Columbia University

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



University Calendar 1985-1987

1985

Wed-Fri	Aug. 28-30	Fall Registration
Mon	Sept. 2	Labor Day Holiday
Tue	Sept. 3	Classes Begin
Fri	Sept. 6	Last day of late registration, class or section additions or changes
Wed	Sept. 18	12th Class Day
Fri	Sept. 20	Application deadline for degrees to be conferred in December
Mon	Oct. 14	Last day to drop a class or officially withdraw with an automatic <i>W</i> ; after this date, grade of <i>W</i> or <i>F</i> determined by each instructor
Thur-Sat	Oct. 31-Nov. 2	Homecoming
Thur-Fri	Nov. 28-29	Thanksgiving Holidays
Mon	Nov. 25	Course drop/withdrawal deadline
		Students enrolled in courses after this date may not receive grade of <i>W</i>
Fri	Dec. 6	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. 13	Last day of Classes
Mon-Fri	Dec. 16-20	Final Examinations
Fri	Dec. 20	Winter Commencement, 7:00 PM
Fri	Dec. 27	Fall semester final grades due in Registrar's office, 12:00 noon
Dec. 23-Jan. 1		Winter Holidays
Thur Jan. 2, 1986		University offices re-open

1986

Wed-Fri	Jan. 15-17	Spring Registration
Mon	Jan. 20	Classes Begin
Fri	Jan. 24	Last day for late registration, class or section additions or changes
Fri	Jan. 31	Application deadline for degrees to be conferred in May
Tue	Feb. 4	12th Class Day
Fri	Feb. 28	Last day to drop a class or officially withdraw with an automatic <i>W</i> ; after this date, grade of <i>W</i> or <i>F</i> determined by each instructor
Mon-Fri	Mar. 24-28	Spring Holiday for students, no classes meet
Fri	March 28	Spring Holiday; no classes meet
Fri	April 25	Course drop/withdrawal deadline
		Students enrolled in courses after this date may not receive grade of <i>W</i>
Fri	May 2	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 9	Last day of Classes
Mon-Fri	May 12-16	Final Examinations
Sat	May 17	Commencement
Tue	May 20	Spring semester final grades due in Registrar's office, 12:00 noon

1986

Fri	May 30	Registration, Summer I
Mon	June 2	Classes Begin
Thur	June 5	4th Class Day
Thur	June 5	Last day for late registration, fee payment, class or section additions or changes, Summer I
Fri	June 13	Last day to drop a class or officially withdraw with an automatic <i>W</i> ; Summer I, 5½-week classes; after this date, grade of <i>W</i> or <i>F</i> determined by each instructor
Fri	June 13	Application deadline for degrees to be conferred in August
Fri	June 27	Last day to drop or officially withdraw with an automatic <i>W</i> ; Summer I, 11-week classes; after this date, grade of <i>W</i> or <i>F</i> determined by each instructor
Mon	June 30	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
Tue	July 1	Course drop/withdrawal deadline, Summer I, 5½-week classes; students enrolled in courses after this date may not receive grade of <i>W</i>
Fri	July 4	Independence Day Holiday
Tue	July 8	Last day of classes, Summer I, 5½-week classes
Wed	July 9	Final Examinations, Summer I, 5½-week classes
Thur	July 10	Registration, Summer II
Fri	July 11	Classes Begin, Summer II
Fri	July 11	Summer I, 5½-week final grades due in Registrar's Office, 12:00 noon
Wed	July 16	4th Class Day
Wed	July 16	Last day for late registration, fee payment, class or section additions or changes, Summer II
Thur	July 24	Last day to drop or officially withdraw with an automatic <i>W</i> ; Summer II; after this date, grade of <i>W</i> or <i>F</i> determined by each instructor
Thur	Aug. 7	Course drop/withdrawal deadline, Summer I 11-week classes and Summer II
		Students enrolled in courses after this date may not receive grade of <i>W</i>
Fri	Aug. 15	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	Aug. 15	Last day of classes, 11-week and Summer II classes
Sat	Aug. 16	Final Examinations, 11-week and Summer II classes
Mon	Aug. 18	11-week and Summer II final grades due in Registrar's office, 12:00 noon

FALL SEMESTER

1986

Wed-Fri	Aug. 27-29
Mon	Sept. 1
Tue	Sept. 2
Fri	Sept. 5
Wed	Sept. 17
Fri	Sept. 19
Mon	Oct. 13
Thur-Fri	Nov. 27-28
Mon	Nov. 24
Fri	Dec. 5
Fri	Dec. 12
Mon-Fri	Dec. 15-19
Fri	Dec. 19
Fri	Dec. 26
Dec. 22-Jan. 2	
Mon Jan. 6, 1987	

SPRING SEMESTER

1987

Wed-Fri	Jan. 14-16
Mon	Jan. 19
Fri	Jan. 23
Fri	Jan. 30
Tue	Feb. 3
Fri	Feb. 27
Mon-Fri	Mar. 16-20
Fri	April 17
Fri	April 24
Fri	May 1
Fri	May 8
Mon-Fri	May 11-15
Sat	May 16
Tue	May 19

SUMMER SESSION

1987

Fri	May 29
Mon	June 1
Thur	June 4
Thur	June 4
Fri	June 12
Fri	June 12
Fri	June 26
Mon	June 29
Mon	June 29
Mon	July 6
Tue	July 7
Wed	July 8
Thur	July 9
Thur	July 9
Tue	July 14
Tue	July 14
Wed	July 22
Wed	Aug. 5
Fri	Aug. 14
Thur	Aug. 13
Fri	Aug. 14
Mon	Aug. 17

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:

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. 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, 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. CARTER MEMORIAL ATHLETIC FUND

— Established in 1983 by Dorothy S. Carter in memory of her husband, Charles B. 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 a University Endowed Scholarship to any undergraduate student who meets the academic requirements.

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 foreign students.

ANDY AND SYD COHEN ENDOWMENT FUND

— Established by friends of the Cohen brothers, former collegiate and professional athletes, who are El Paso businessmen, civic leaders and friends of the University. Income from the endowment will provide support for the baseball program and scholarships to student baseball 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.

FRANK B. COTTON ESTATE FUND

— Founded by trustees of the Estate of Frank B. Cotton, a Massachusetts manufacturer and investor, the Estate's income has provided the University with the Cotton Memorial building, has afforded financial aid and scholarships to students and faculty, library support, the Cotton Visiting Professor, organized research, faculty teaching improvement program, and continues to contribute vitally to the 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.

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.

BROOKS DAWSON MEMORIAL SCHOLARSHIP

— 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.

8 / GENERAL INFORMATION

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 an endowed scholarship under the Presidential Scholarship Program. Income earned from the endowment fund will be used to provide a four-year scholarship for a deserving qualified student from Mexico with first preference given to residents of Cd. Juarez.

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. Interest earned from the endowment will provide academic resource funds in 1988 for the 75th Anniversary. Resource funds can be used for 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 A. 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.

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 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.

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, with income from this endowment fund providing scholarships for upper-level nursing students.

FESSINGER MEMORIAL 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 is used to bring a nationally-recognized lecturer to the University.

JOSEPHINE CLARDY FOX FOUNDATION

— Established by the bequest of a prominent El Paso woman who left her estate to the University upon her death in 1970. 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, Drama and Music 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.

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.

THE 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.

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.

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 whose income is to be used by the University to purchase books in her memory and in her husband's memory.

THE 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 needy and disadvantaged 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.

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.

HELEN O'SHEA KELEHER PRESIDENTIAL SCHOLARSHIP FUND

— Established in 1982 by Mrs. Helen O'Shea Keleher, a prominent El Paso citizen, with income from this permanent endowment fund providing a Presidential Scholarship for Texas resident students who attend UT El Paso and study in a field of business, education, engineering, science or nursing.

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.

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 thirty-five 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 Drama majors.

THE LIBRARY 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 \$100 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:

- Alpha Chi Library Endowment Fund
- The Alumni Association of UT El Paso Library Endowment Fund
- The Delores Anderson Library Memorial Fund
- Cheryl A. Anguiano Library Memorial Fund
- Elsa Arnstein Library Memorial Fund
- Mr. and Mrs. Robert K. Banner Library Memorial Fund
- Alice Pierce Barry Library Memorial Fund
- Dr. Anton H. Berkman Library Memorial Fund
- General Philip H. Bethune Library Memorial Fund
- Dr. and Mrs. Roland K. Blumberg Library Memorial Fund
- Jamie Bowen Library Memorial Fund
- Dan Boyd, Jr. Library Memorial Fund
- The Dr. Haldeen Braddy Library Memorial Fund
- Mrs. Harry Brand Library Fund
- Julie North Breck Library Memorial Fund
- Bill Broadus Library Memorial Fund
- Hughes Butterworth, Sr. Library Memorial Fund
- Johnnye Calhoun Library Memorial Fund
- Mike Callaghan Library Memorial Fund
- The Eddie Caples Library Memorial Fund
- John Francis Carson Library Memorial Fund
- Charles R. Carter Library Memorial Fund
- Robert Kimbrough Carson Library Memorial Fund
- Lee Chagra Library Memorial Fund

- Dr. Lurline H. Coltharp Library Fund
- Don Lee Cotton Library Memorial Fund
- John Kellogg Creighton Library Memorial Fund
- H. E. Crowson Library Memorial Fund
- James D. DeGroat Library Memorial Fund
- Mrs. Dante Del Campo Library Memorial Fund
- James W. Dunn Library Memorial Fund
- Employees of El Paso Electric Company Library Memorial Fund
- Dr. Floyd Farquhar Library Memorial Fund
- Frank Barron and Mildred Sullivan Fletcher Library Memorial Fund
- Wayne Folmer Library Memorial Fund
- Chris P. Fox Library Memorial Fund
- E. Joseph Franczak Library Memorial Fund
- Major William D. Fuchlow Library Memorial Fund
- Louise Galthers Library Memorial Fund
- Roy I. Glass, Jr. Library Memorial Fund
- Charles A. "Buddy" Glover Library Memorial Fund
- Ralph Gonzalez Library Memorial Fund
- Dr. Gladys Gregory Library Memorial Fund
- John Kenneth Hardy Library Memorial Fund
- Frances Elen Harrison Library Memorial Fund
- Rev. and Mrs. A. W. Hedman Library Endowment Fund
- Blanca Gomez Hill Library Memorial Fund
- Margaret W. Hilliker Library Memorial Fund
- Dr. Isabeli Welsh Hoenes Library Memorial Fund
- Commander Herbert Hunter Library Memorial Fund
- Dr. B. F. Jenness Library Memorial Fund
- Steele and Rita Jones Library Endowment Fund
- Mr. and Mrs. Crawford S. Kerr, Sr. Library Memorial Fund
- Emanuel, Charlotte and Julius Klein Library Memorial Fund
- Dr. E. J. Knapp Memorial Book Fund in Physics
- John Edward Lafayette Library Memorial Fund
- Marjorie A. Lawson Library Memorial Fund
- L. Vere and James L. Leasure Library Memorial Fund
- Victoria Gleem Leverett Library Memorial Fund
- Clara S. Lord Library Memorial Fund
- Gertrude N. Lynde Library Memorial Fund
- Frank K. MacCallum Library Memorial Fund
- Julia Greear MacQueen Library Memorial Fund
- Kirsten Main Library Memorial Fund
- Afili Maiooly Library Memorial Fund
- Reverend C. G. Manker Library Memorial Fund
- Melissa Mapula Library Memorial Fund
- Bernard Martin-Williams Library Memorial Fund
- Ruth B. McCluney Library Memorial Fund
- Lydia Ruiz McCord Library Memorial Fund
- James P. McDonald Library Memorial Fund
- Kelly McWhorter Library Memorial Fund
- Peggy Merrill Library Memorial Fund
- John Judy Middagh Library Memorial Fund
- Ross Moore Library Memorial Fund
- Marvin Nadier Library Memorial Fund
- Dr. and Mrs. C. R. Nelson Library Memorial Fund
- Mark W. Niemann Library Memorial Fund
- John Onick Library Memorial Fund
- The Optimist Club of Westside El Paso Library Fund
- Shirley Pearson Library Memorial Fund
- Elizabeth Cram Polk Memorial Collection
- Eugene O. Porter Library Memorial Fund
- Dean C. A. Puckett Library Memorial Fund
- Joseph M. and Jetti H. Ray Library Fund
- Arthur Reardon Library Memorial Fund
- Peter J. Rempe Library Memorial Fund
- Marion Tappan Rice Library Memorial Fund
- Nellie Pollard Rodgers Library Memorial Fund
- George N. Rodriguez, Sr. Library Memorial Fund
- Ethel Howe Rogers Library Memorial Fund
- John A. P. Romer Library Memorial Fund
- Mary E. Smiley Library Memorial Fund
- Ruth North Street Library Memorial Fund
- Dr. Arleigh B. Templeton Library Fund
- Judge and Mrs. R. E. Thomason Library Memorial Fund
- Thunderbird Optimist Club Library Fund
- H. Brooks Travis Library Memorial Fund
- UT El Paso Student Association Library Endowment Fund
- Marie L. Waddell Library Memorial Fund
- George F. Walker Library Memorial Fund
- William E. Walker Library Memorial Fund
- William F. Webb Library Memorial Fund
- Robert L. Wegstein Library Memorial Fund
- George M. Weidmann Library Memorial Fund
- Walter D. Weidmann Library Memorial Fund
- James C. and James H. White Library Memorial Fund

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Barney Wieland Library Memorial Fund
Andres Wiley Library Memorial Fund
Mrs. Ozelle G. Wishard Library Memorial Fund
Woman's Auxiliary of UT El Paso Library Endowment Fund

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 Drama 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.

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 the late 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, The 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 ENGINEERING FUND

— Established in 1985 by 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.

ELLIS MAYFIELD FAMILY PRESIDENTIAL SCHOLARSHIP FUND

— Established in 1984 by Mr. and Mrs. Ellis O. Mayfield, prominent El Paso attorney, 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.

MARTHA MILLER McDONALD MEMORIAL SCHOLARSHIP IN MUSIC

— This endowed scholarship was created in 1973 by Mr. Kenneth McDonald of Hampton, Virginia in memory of his wife, a 1959 graduate of the University.

DR. WILLIAM McANULTY MEMORIAL FUND

— Established in 1979 by alumni, friends, and associates, this permanent fund pays tribute in 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. & 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 a Presidential Scholarship.

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.

W.P. NASH SCHOLARSHIP FUND

— This endowment was created by W.P. Nash, Chairman and Chief Executive Officer of GEO Surveys, 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.

GORDON PONDER PERMANENT 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. Its 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 at least \$500 annually to academic programs. Each year one-half of unrestricted gifts from members is transferred to the endowment fund. Income from the endowment is used for academic improvement as determined by the President with approval of the Associates.

DR. HOWARD E. QUINN GEOLOGY LIBRARY MEMORIAL FUND

— Alumni, friends and associates established this tribute in memory of this longtime 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.

PRESIDENTIAL SCHOLARSHIP PROGRAM FUND

— Alumni, friends and associates established the Presidential Scholarship Fund 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.

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 Metallurgical Engineering student.

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.

JULIA ANN ROSS MEMORIAL SCHOLARSHIP

— Created by Mrs. Ross, an El Paso school teacher and alumna, who bequeathed a portion of her teacher's retirement 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 the El Paso National 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.

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 the El Paso National Bank, the income of which will be used by the University in the support 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 Lefkowitz Spitz, and his daughter, Leona Spitz Lakehomer. The scholarship will be awarded to a student in pre-medical studies.

THE 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.

THE 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 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 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.

LUCILLE T. STEVENS ESTATE FUND

— Established by the bequest of Mrs. Lucille T. Stevens, the estate provides income for the University's most valuable scholarship awards up to \$5,000, directed to male students with outstanding academic records.

WILLIAM S. STRAIN GEOLOGY FUND

— Established in 1974 by alumni and friends, this fund honors 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 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 organization. The major named funds are:

- The Alumni Association 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
- Josephine Clardy Fox Student Loan Fund
- Reynolds-Friedman Memorial 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
- 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
- Women's Auxiliary 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, and associates of former University President, Dr. A. B. Templeton, established a professorship in his honor upon his retirement. The professorship required an endowment of \$100,000 and is used to

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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*.

CAPTAIN JAMES R. VALTR MEMORIAL FUND

— An endowed scholarship established by Mr. and Mrs. Robert F. 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.

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 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 of this fund will be used to purchase books for the Library and provide scholarship assistance.

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 Mrs. Judith Winters of El Paso and is awarded annually to a qualified and deserving female student.

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 Dittmer in honor of Mr. and Mrs. W. Henry Wooldridge of El Paso. The income from this endowment is used annually to purchase 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 is qualified to undertake academic work at the university level. 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 Admission and Evaluation is responsible for evaluating applicants for admission according to Texas state law, to regulations of The University of Texas Board of Regents, and to criteria set by the 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
201 Administration Building
El Paso, TX 79968-0510
(915) 747-5576

The Office of Recruitment and Scholarships serves as an information resource to high school counselors, directs New Student Orientation, and is responsible for arranging visits to the campus by prospective students and their parents. For general information about the University, contact

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

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

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 citizens of countries other than Mexico who are not 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. residents who submit undergraduate applications after the dates noted above. **NO APPLICATIONS FOR ADMISSION FOR A SPECIFIC SEMESTER WILL BE ACCEPTED 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. An applicant whose background does not fall into one of the categories below will be reviewed on an individual basis 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.

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.

Freshman Admission: Applicants With No Previous College Work

APPLICANTS WHO GRADUATED FROM HIGH SCHOOL WITHIN THE PAST 5 YEARS

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

Citizens or permanent residents of the United States who have completed at least the final three years of secondary school at an accredited U.S. high school and who meet the minimum requirements described below are eligible for admission to The University of Texas at El Paso. This preparation constitutes a minimum desirable background for successful University-level work.

- English4 years
- Mathematics3 years
(Algebra—2 years; Geometry—1 year;
Trigonometry—½ year for science and
engineering majors)
- Science.....3 years
(Biology, Chemistry, Physics)
- Social Studies.....3 years
(U.S. History—1 year; World History or History
of Civilization—1 year; American Government—
½ year; other Social Studies—½ year)
- Foreign Language2 years of one

The Scholastic Aptitude Test (SAT) or the American College Test (ACT) is also required for admission. 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 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 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 PROGRAM

Residents of Texas who graduated from 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 meet regularly with an assigned academic advisor, and must take a free, non-credit Study Skills course.

During the first semester of enrollment, 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, 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 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.

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 that allows students who are highly capable in one or more academic areas to concurrently enroll in high school and university courses. Individuals interested in this program should contact

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

APPLICANTS WHO GRADUATED FROM HIGH SCHOOL 5 OR MORE YEARS AGO

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

The academic preparation listed previously in this section is recommended. Students who lack adequate preparation will be considered for admission on an individual basis.

APPLICANTS WHO HAVE NOT GRADUATED FROM HIGH SCHOOL

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

Individuals who did not finish high school but who are 18 years of age or older and whose high school class has already graduated 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. Applicants passing the English version of the test must also submit SAT or ACT scores; those passing the Spanish version must submit scores of 1000 or higher on the PAA (Prueba de Aptitud Academica). Applicants whose admission is based on the Spanish GED are admitted into the bilingual Inter-American Science and Humanities Program.

Transfer Admission: Applicants With Previous College or University Work

Documents required: Application; complete, official transcript from each school 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.

International students who have attended another college or university should refer to the following section on International Student Admission.

An applicant from an accredited college or university who has completed at least 30 semester hours with a "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 scores requirement described in the section on freshman admission will be considered for admission on an individual basis.

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 of the intent to have the credit transferred. Failure to provide complete information and documentation will be considered grounds for denial of admission or cancellation of registration.

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.

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

In general, grades of "C" or better earned at fully-accredited institutions are evaluated on the same basis as if the work had been completed at UT El Paso. The applicability of all courses to the degree plan, including those with grades of "D", is determined by the student's academic dean.

A full-time student at another college or university who does not plan to pursue a degree at UT El Paso and wishes to attend for the summer only as a transient 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-US citizens who have completed any portion of their high school or university work at institutions outside the United States must meet the requirements described below.

Documents required: Application, accompanied by \$50 admission evaluation fee for citizens of countries other than Mexico who are not permanent residents of the United States; satisfactory entrance examination scores; complete, official high school transcript; complete, official college transcript, 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.

Entrance examination requirement:

Students whose primary language is not English:

TOEFL (Test of English as a Foreign Language) score of 500 or higher

Spanish-speaking students who are not currently proficient in English and who are seeking admission to the bilingual Inter-American Science and Humanities Program:

PAA (Prueba de Aptitud Academica) score of 1000 or higher

Students whose primary or secondary language is English:

An SAT of 800 or higher (minimum of 400 on the verbal portion) may be submitted in place of the TOEFL.

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 courses taken 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, 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 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.

ed. 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.

The admission credentials required of students who have attended high schools, colleges and universities in both the United States and in other countries will be determined on an individual basis.

Readmission

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

Former UT El Paso students who have been out of school for more than 12 months must submit an application for readmission to the University. 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 primarily intended for mature individuals who want to take undergraduate courses and who do not intend to pursue a degree at the time of their admission. These individuals may want to attend the University to achieve personal educational objectives or to complete work 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 re-enroll at any college or university previously attended. 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 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.

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.

Graduates of 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.

Students who have attended a non-accredited high school or university may be considered for admission to the University on a conditional basis if they meet the requirements for freshman or transfer admission. Conditions may be placed on the student's enrollment as determined by the Office of Admission and Evaluation.

Financial Aid

The Office of Financial Aid at The University of Texas at El Paso exists solely for the purpose of assisting qualified students to meet the costs of a college education. No person is excluded from participation on the basis of race, national origin, age, sex, religion 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
El Paso, Texas 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.

The University 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.

A student may establish independence from parental support only when all of the following requirements are met:

1. Applicant must not have been claimed as an exemption on last year's parent's Federal Income Tax return.
2. Applicant must not have received assistance worth \$750.00 or more from parents in the last 12 months.
3. Applicant must not have lived with parents for more than six (6) consecutive weeks during the last 12 months.

All students who apply for financial aid are required to submit an ACT Family Financial Statement or a College Scholarship Service Financial Aid Form (FAF) for the aid period.

The Application Process

To be considered for financial assistance, a student must file a need analysis document (Family Financial Statement) each year, no later than April 1, in addition to a General Application. As soon as the need analysis is processed, a notification copy will be mailed to the applicant and a similar report, giving a detailed analysis of the family's contribution, is 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 he/she 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. It is impractical for the applicant to limit the request to one type of aid such as grants. 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 funds 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 (first and second terms).

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

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

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	FULL-TIME UNDERGRADUATE student must earn at least		PART-TIME UNDERGRADUATE student must earn at least	
	HOURS PER ACADEMIC YEAR	CUMULATIVE TOTAL HOURS	HOURS PER ACADEMIC YEAR	CUMULATIVE TOTAL HOURS
1st	24	24	12	12
2nd	24	48	12	24
3rd	30	78	12	36
4th	30	108	12	48
5th	balance of hours required to complete degree		15	63
6th			15	78
7th			15	93
8th			15	108
9th			15	123
10th			balance of hours required to complete degree	

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 this institution's Evaluation Office. 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, Nursing Loan, or Teacher Loan Program provided that 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.
3. Non-degree seeking students enrolled without a baccalaureate degree but with more than one hundred fifty credit hours shall be granted Guaranteed Student Loan assistance only.

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.
2. Verifying grade 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 this office 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 both summer terms, 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

*These are minimum credit hour requirements. Each student must determine the number of hours the degree plan requires and the number of hours that must be completed each academic year in order to comply with the time frame requirement.

student's ineligibility, and the amount of aid the student would receive if eligible. 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 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 appeals must be picked up by the student from the Office of Student Financial Aid receptionist after the committee has met.

Types of Financial Assistance

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 an award 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 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 and must be enrolled part-time or more. It is necessary to file a separate application for this grant.

Texas Public Educational 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 law. Graduate and undergraduate students demonstrating financial need are eligible for participation in this program with priority given to students enrolled on a full time basis or more at the time of job referral.

LOANS

The Office of Financial Aid offers assistance to students through various long-term loan programs. Repayment begins six (6) months after the student ceases being at least a half-time student. If payment is not made after the six (6) month grace period, the student is in default. The loaning agency can then take necessary action to obtain payment. This can be by 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 qualifications for the 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.

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 on at least a half-time basis. There are provisions for partial cancellation and deferral for designated public service.

Guaranteed Student Loan

This program is offered through participating lending institutions and is designed for individuals who will have difficulty meeting college expenses. 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 re-payment 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. Maximum loans of \$50.00 may be made; 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 seventy-five (\$75.00) 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.

Teacher Education Loan Program

This program's purposes are: 1) to encourage practicing teachers to become certified in subject areas designated by the State Board of Education as having a shortage of teachers; and 2) to encourage students enrolled in teacher education programs to teach in public schools in Texas. This program is not based on financial need.

Future Teacher Loan Program

The purpose of this program is to encourage students to seek certification 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.

Undergraduate Scholarships

The University of Texas at El Paso has an excellent scholarship program designed to attract bright young 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.

New scholarship awards are given primarily to entering freshmen and are renewable for four years, or eight long semesters, to those who maintain the required standards.

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

Presidential Scholarship

- (1) Amount awarded to be \$1,500 annually, renewable for four years.
- (2) Qualifications: *a. 1300+ SAT or 30 ACT
*b. Top 2% of high school graduating class
*c. High School GPA of 3.75 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.
- (5) Final determination for the awarding of the Presidential 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. 1200+ SAT or 28 ACT
*b. Top 5% of high school graduating class
*c. High school GPA of 3.6 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. 1100+ SAT or 25 ACT
*b. Top 10% of high school graduating class
*c. High school GPA of 3.5 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.

General Scholarships

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

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

1. Secure an Undergraduate Scholarship Application from the Office of Recruitment and Scholarships, 203 Administration Building, and return the completed application to the same office. Note: Application should be made as early as possible in the student's senior year in high school.

2. Complete the application process for University admission outlined earlier in this section of the catalog. High school transcripts must include the following:
 - Grade point average
 - Present class rank
 - SAT or ACT scores

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 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 shown include the following:

Tuition

TEXAS RESIDENTS — \$12 per semester hour with a minimum assessment of \$100 for up to 8 semester hours.

NON-RESIDENT/INTERNATIONAL STUDENTS — \$120 per semester hour.

Mandatory Fees

GENERAL FEE — \$6 per semester hour

STUDENT SERVICES FEE — \$5.25 per semester hour, to a maximum of \$63 (12 semester hours).

In addition to these charges, students will be assessed the following, where appropriate:

STUDENT GENERAL PROPERTY DEPOSIT — a \$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.

COURSE-RELATED FEES — assessments of varying amounts, based on courses for which the student is enrolled. These fees and the courses to which they apply are listed below and include the following:

- Laboratory Fees
- Fine Arts Fees
- Transportation Fees
- Computer User Charges

Tuition and Mandatory Fees Schedules

Long Semesters (Fall and Spring), per semester:

Semester Hours	Resident Students	Non Resident/ International Students
1	\$111.25	\$ 131.25
2	122.50	262.50
3	133.75	393.75
4	145.00	525.00
5	156.25	656.25
6	167.50	787.50
7	178.75	918.75
8	190.00	1,050.00
9	209.25	1,181.25
10	232.50	1,312.50
11	255.75	1,443.75
12	279.00	1,575.00
13	297.00	1,701.00
14	315.00	1,827.00
15	333.00	1,953.00
16	351.00	2,079.00
17	369.00	2,205.00
18	387.00	2,331.00
19	405.00	2,457.00
20	423.00	2,583.00
21	441.00	2,709.00

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

Resident Students: \$69.75

Non-Resident/International students: \$393.75

Summer Sessions, each term:

Schedule 1—Students registering for 5½-week or shorter courses only. Fees are charged for each term of the Summer Session

Semester Hours	Resident Students	Non Resident/ International Students
1	\$ 61.25	\$ 131.25
2	72.50	262.50
3	83.75	393.75
4	95.00	525.00
5	116.25	656.25
6	139.50	787.50
7	162.75	918.75
8	186.00	1,050.00
9	209.25	1,181.25
10	232.50	1,312.50
11	255.75	1,443.75
12	279.00	1,575.00

Schedule 2 — Students registering for one or more 11-week courses, either with or without 5½-week or shorter courses.

Semester Hours	Resident Students	Non Resident/ International Students
1	111.25	131.25
2	122.50	262.50
3	133.75	393.75
4	145.00	525.00
5	156.25	656.25
6	167.50	787.50
7	178.75	918.75
8	190.00	1,050.00
9	209.25	1,181.25
10	232.50	1,312.50
11	255.75	1,443.75
12	279.00	1,575.00

A student who is enrolled for one or more 11-week courses, and who later registers for additional work during the 2nd Term, will not be assessed additional *tuition* but will be assessed only the appropriate fees (student activities fee, general fee, lab fees, etc.) for the 2nd Term courses, provided the 2nd Term enrollment is 8 semester hours or less.

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

Resident Students: \$69.75

Non-Resident/International students: \$393.75

Course-related Fees

LABORATORY FEES

AHS 3401, 3402	\$ 4.00
ARTE 3311, 3312, 3321	4.00
ARTF 3101, 3102, 3103, 3104	4.00
ASTR 1107, 1108	8.00
BIOL 1107, 1108, 1212, 1215, 1217, 1319, 1328, 1498, 2423, 2498, 2502, 3426, 3498, 3502, 3505, 3514, 3515, 3518, 3519, 3520, 3522, 3524, 5502	8.00
BOT 1336, 1340, 1473, 2338	8.00
CE 1234, 1236, 1238, 1453, 2396, 3105, 3313, 3314, 4390, 4448, 4456, 4460, 4470, 4508, 4509, 4515, 4522	8.00
CERM 3204, 3214, 3304, 3314, 3324, 3404, 3414	8.00
CHEM 1310, 1324, 1325, 1326, 1351, 1352, 1465, 1476, 2106, 2214, 2321, 2322, 2412, 3476, 4107, 4108	8.00
DRAW 3208, 3218, 3308, 3318	8.00
EE 1205, 1251, 1309, 1369, 1376, 1442, 1478, 2310, 2411, 2412, 4360, 4377	8.00
ESOL 2111, 2112	2.00
FREN 4101, 4102	2.00

GEOL	1101, 1102, 1455, 1457, 3103, 3104, 3213, 3214, 3304, 3305, 3315, 3321, 3325, 3462, 3470, 3472, 3530, 3534, 3535, 3536, 3540, 3541, 3542, 3545, 3546, 3566, 3567, 3568, 3576, 3580, 4111, 4112, 4320, 4323, 4458, 4591, 4592.....	8.00
GEOG	1106, 3208, 3308, 3310.....	8.00
GEOP	3333, 3432, 3434, 3558.....	8.00
GERM	4101, 4102.....	2.00
IE	3236, 3377.....	6.00
LATN	4101, 4102.....	2.00
LING	4103, 4104.....	2.00
MECH	3305, 3501, 4354, 4451, 4465.....	6.00
MET	1203, 3412, 3413, 4304, 4305, 4306, 4307, 4405, 4415, 4417, 4419.....	6.00
MICR	1241, 1328, 1344, 1346, 1350, 1452, 1454, 1456, 1473, 2348.....	8.00
MTLS	3203, 3213, 3303, 3313, 3323, 3403, 3413.....	8.00
NURS	3302, 6306, 6307, 6310, 6410, 7302, 7303, 7370, 7371, 7410, 7411, 7471, 7472.....	4.00
PE	1101.....	4.00
PSCI	3101.....	8.00
PHYS	1120, 1121, 1217, 1218, 2217, 2343, 2446, 4103, 4104.....	8.00
PNTG	3201, 3231, 3301, 3331, 3341.....	4.00
PNTG	3401, 3431.....	6.00
PRNT	3205, 3225, 3305, 3325, 3335, 3405, 3425.....	6.00
PSYC	1321, 1322, 3401.....	3.00
PSYC	3523.....	5.00
RUSS	4101, 4102.....	2.00
SCUL	3202, 3232, 3302, 3332, 3342, 3402, 3432.....	8.00
SPAN	4101, 4102, 4103, 4104.....	2.00
ZOOL	1365, 1369, 1455, 1457, 1471, 1477, 1479, 1481, 3473, 4366.....	8.00

FINE ARTS FEES

ART	3502.....	10.00
CERM	3424.....	10.00
DRAW	3430.....	10.00
MTLS	3423.....	10.00
MUSA	2181, 2191, 2391, 2581.....	20.00
MUSA	3181, 3191, 3391, 3581, 3591, 4191, 4391.....	35.00
PNTG	3441.....	10.00
PRNT	3435.....	10.00
SCUL	3442.....	10.00

TRANSPORTATION FEES will vary according to the destination of the trip involved in the course. An appropriate fee will be assessed in the following courses:

ANTH	6247, 6447
BIOL	2425, 3425, 4425, 5425, 6425
GEOL	6465

COMPUTER USER CHARGES — 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.

Methods of Payment

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

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 a Deferred 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 a Deferred 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 Charges)

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

- Student General Property Deposit
- Service Fees (Late registration and Add/Drop)
- Discretionary Fees (Parking decals, liability insurance, health insurance)
- Deferred 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 Deferred 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 Deferred 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. Students on scholarships, financial aid, or other third-party programs will be required to make full payment of tuition and all fees at the time of registration when the award amount is sufficient to cover the assessed amount. If the award amount is insufficient to cover the assessed amount, the total amount of the financial aid award will be applied to the payment of tuition and all other fees and charges; the student may then choose either Option 2 or 3 for payment of the remainder.
4. 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.
5. If a student fails to make a required payment, a grade notation of X will be entered on the record for all courses in which he or she is enrolled, and the student will be placed on financial hold. Upon payment of outstanding bills, the Bursar will release the financial hold status and the Office of the Registrar will remove X grades.
6. The courses for which a student is enrolled on the official census date — 12th class day in long semesters, 4th day in summer — will be the basis for the student's tuition and fees assessment. Except for students who officially withdraw up to the end of the refund period as indicated in the Schedule of Classes, no reduction in amounts due will be made after this date; further, the student is obligated to pay the assessed amounts whether or not class attendance is subsequently interrupted or terminated.
7. Students in default of deferred payments will not receive grades or diplomas, nor may they subsequently register at the University, until all amounts due are paid. After the official end of the semester or session — last day of final examinations — a student whose record indicates that the full amount due in deferred payment has not been paid will be denied credit and cannot subsequently receive grades and credit even if the amount due is paid. After this date, a student's record will show only W or F, at the discretion of the faculty.

Other Expenses

LATE REGISTRATION CHARGE — 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.

LATE APPLICATION FEE — A fee of \$15.00 is assessed when a prospective student applies for admission after the posted deadlines for a semester or session.

INTERNATIONAL STUDENT ADMISSION 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 described elsewhere in this section are not exempt from payment of this fee.

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.

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 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 the first four class days of a Summer Session term, provided the student remains enrolled for that semester or term. Refunds for courses dropped by a student who withdraws later in the semester or term will be calculated according to the percentage schedules in the Withdrawals section above. 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 occurs and if records indicate the official withdrawal or drop was appropriately completed.

Housing Expenses

Rates for 1985-86, which include board of twenty meals per week are as follows:

KELLY AND BARRY HALLS, Room and Board:

SEMESTER CONTRACT - 4½ months	
Double Room	\$1,330
Suite for Four (Kelly Hall ONLY)	1,480
Single Occupancy (When available)	1,630
LONG SESSION CONTRACT - 9 months	
Double Room	2,400
Suite for Four (Kelly Hall ONLY)	2,700
Single Occupancy (When available)	3,000
SUMMER SESSION, PER TERM	
Double Room	\$ 520
Single Occupancy (When available)	627

Telephone service is available for those students desiring a telephone in their room at an additional monthly charge. Each room and suite in the residence halls is provided with a telephone jack. Twenty meals per week are provided for board; accommodations without board are also available.

STUDENT APARTMENTS:

Monthly (includes utilities)	\$ 300
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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:

The Housing Office
101 Kelly Hall
UT El Paso
El Paso, Texas 79968
(915) 747-5353

Residency Regulations

The following regulations apply to permanent residents of the United States.

Each student is responsible for paying the proper tuition rate based upon residency classification. If there is any question of legal residence in Texas under state laws and University regulations, the student must resolve the question with the Director of Admission before registration. Attempts on the part of a non-resident to evade the non-resident tuition will be taken seriously and may lead to expulsion. Any student who has paid the wrong tuition will be charged the difference and will be responsible for paying the additional amount before the next registration period. Any student classified as a resident who becomes a non-resident at any time by virtue of a change of legal residence is required to immediately notify the Office of Admission and Evaluation.

MINORS

An individual under 18 years of age who is living away from home, 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.

An individual under 18 years of age or a dependent 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.

An individual under 18 years of age whose parents were residents of Texas at the time of the student's registration 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 long semester in a state-supported institution of higher education.

RESIDENCE OF INDIVIDUALS OVER EIGHTEEN

An individual 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 legal Texas residence is maintained.

An individual 18 years of age or over who resides out of the state or who comes 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.

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 petition for reclassification as a resident student as provided in the rules and regulations adopted by the Coordinating Board, Texas College and University System. Any individual reclassified as a resident student is entitled to pay the tuition for a resident of Texas at any subsequent registration as long as legal Texas residence is maintained.

MARRIED STUDENTS

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

MILITARY PERSONNEL AND VETERANS

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 that 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.

A person in military service who wishes to pay the resident tuition personally or for dependents must submit before EACH registration a statement from the Commanding Officer or Personnel Officer certifying assignment to duty in Texas and that same will be in effect at the time of registration in an institution of higher education.

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 and other fees or charges provided for Texas residents.

A person who enrolls in an institution of higher education following separation from military service must be classified as a non-resident student unless, (1) he or she was a legal resident of Texas at the time of entrance into military service and has not relinquished that residence, (2) he or she can prove that during military service bona fide, legal residence in Texas was established at a time at least 12 months prior to registration, or (3) he or she has resided in Texas other than as a student for 12 months prior to registration and subsequent to discharge from service.

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 resided within the State.

FACULTY AND DEPENDENTS

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 benefit 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

A teaching assistant or research assistant of any institution of higher education and the spouse and children of such a teaching assistant or research assistant are entitled to register in a state institution of higher education by paying the tuition fees and other fees or charges required of Texas residents, 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 assistant position which relates to the assistant's degree program under rules and regulations established by the employer institution.

SCHOLARSHIP RECIPIENTS

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 Coordinating Board, Texas College and University System, under criteria developed by the board.

CITIZENS OF OTHER COUNTRIES

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 tuition purposes as has a citizen of the United States.

OFFICIAL CHANGE OF RESIDENCE STATUS

Every student classified as a non-resident shall be considered to retain that status until such time as application for reclassification is made and approved by the Office of Admission and Evaluation, 201 Administration Building. Additional questions concerning residence should be directed to this office.





FACILITIES & SERVICES

Facilities & Services

THE LIBRARY is the heart of the institution, serving the research and study requirements of students and faculty with a rapidly-expanding collection of books, periodicals, microforms, audio-visual materials, documents, and maps. As of August 31, 1984, holdings of the Library include 588,000 books and bound periodicals, 112,336 documents, 5,373 current serial and periodical subscriptions, 256,576 volume equivalents of microform, and 80,769 maps. Although the Map Collection provides support for the geosciences, these holdings represent varied and important resources for all faculty and students.

On October 24, 1984, the new six-level Central Library opened its doors to students and faculty. In keeping with campus tradition, the building is Bhutanese in architectural style, and its 275,000 square feet will seat 2,305 users and eventually house 1.2 million volumes. The high-quality, functional furniture complements the Bhutanese theme. 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 a special room for the hearing and visually impaired provides specialized equipment and materials.

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. The Library's memberships in AMIGOS Bibliographic Network and OCLC provide additional materials and services through the sharing of bibliographic information and library resources. Research facilities are also supplemented by interlibrary loan transactions with libraries throughout the United States.

The Library is fortunate to have several outstanding special collections of books and other materials which support important academic emphases of the University which are housed on the smaller sixth floor, the "Penthouse." In the John H. McNeely Room the Southwestern Collection, donated by Professor McNeely, is a major resource for scholars, and 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, and the S.L.A. Marshall Military History Collection. Rare books, archival and other manuscript materials are also located on the sixth level.

Latin American and Chicano Studies programs have shown rapid growth in the past few years and have required support by the Library in the development of library resources. Of special interest is the Library's Chicano Services Section, one of the pioneering efforts in this area of library service. During the 1970's, the Science and Education branch libraries were set up to provide additional space for the growing collections. These branch library collections merged into the new central library when it was completed. When the College of Nursing came into the University System in September, 1976, the Nursing/Medical Library became a branch of the University Library. It remains as a branch to serve the College of Nursing and Allied Health students and faculty because of its location near downtown El Paso.

The Library staff includes 23 professional positions, 48 classified positions and approximately 115 student assistants. The Library is open 92 hours per week with some departments and the Nursing/Medical Library maintaining shorter schedules.

The Computer Center was established in March of 1974. Previous to that time, computing needs of the University were serviced by two separate centers: one for the academic community and one for the administrative area.

The Computer Center now functions as a service agency for all academic and administrative units within the University. In this capacity, the Computer Center supports all data processing needs, including data entry processing for the administrative offices, and most of the computing needs for instruction and research in the academic departments.

Direct instruction in the area of computers through the Computer Science Department in the College of Engineering is augmented by computing instruction in many other departments. The Computer Center provides the facilities for this activity as well as consulting services for the benefit of faculty and students.

Currently, the Computer Center houses two computing systems. One is an IBM 4331-2 with two megabytes of real memory and more than 1.5 gigabytes of on-line direct access storage. This computer is dedicated to the McGill University System for Interactive Computing (MUSIC) under VM/SP. There are 107 terminals available for faculty and student use.

The second computer is an IBM 4341-M02 with 8 megabytes of main memory and 4.5 gigabytes of on-line direct access storage. The computer currently runs two major operating systems, OS/MVT/HASP and MVS/SP-JES3, under VM/SP. This machine is shared by academic and administrative users. Administrative data processing needs are handled by a TOTAL data base system and ENVIRON/1 and CICS teleprocessing monitors supporting 50 terminals in various administrative areas. The 4341 has two remote job entry stations and channel to channel communications to the IBM 4331.

Software installed for academic support includes various plotting packages; statistical packages including SPSS, BMD, NUROS, and STATPAK; and language compilers including ALGOL-W, ALGOL-68, PASCAL, SNOBOL LISP, WARFIV and WATBOL, as well as the standard compilers such as FORTRAN, COBOL, PL/1, BASIC and RPG.

Physical facilities of the Center are in three buildings. The administrative offices are located in Benedict Hall, first floor, south entrance. Computer operations, systems programming, production control, data entry and academic user services are located in the north section of Bell Hall, along with a small user area. The principal academic users' area is located on the fourth floor of the Classroom Building. This area has 34 terminals, several keypunches, a remote card reader and printer, documentation and some assistance.

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 and optical fiber communications.

The El Paso Centennial 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 human 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. The Museum is open to the public from 10 a.m. to 4:30 p.m. Tuesdays through Fridays of every week and on Sundays from 1:30 to 5:30 p.m.

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 investigat-

ing Southwest ethnic group relationships and conflicts. It aims at helping to prepare courses and self-containing 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 Modern Languages, 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 relating 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 sociolinguistics 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.

Currently the Center is undertaking a project on regional and national attitudes toward Hispanics and Hispanic immigration.

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 six 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 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 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 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 Economics 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 written by faculty members and off-campus authors, 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 1930 Wiggins.

Stations KTEP (FM) and KVOF (carrier current) are 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.

KVOF broadcasts to the dorm students. The facilities are designed to provide instruction and practice to beginning broadcasting students.

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 Science 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 Linguistics Department 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 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 seminar subject area, related work experience, and demonstrated ability to have successfully conducted

similar seminars/workshops. 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.

The Provisional Advising Program is a University-wide effort to insure that provisionally admitted students receive the advising, guidance, and support that will help them to become successful students. Orientation is required for all provisionally admitted students. The goal is to help provisional students by acquainting them with the University and helping them select courses appropriate to their academic skills and abilities. Faculty and staff members serve as academic advisors to newly admitted provisional students who are advised during Orientation and during their first semester at the University. Each provisional student is required to enroll in a Study Skills class designed to teach specific study skills that can be used to insure a successful college career. The Study Skills class is free, non-credit, and is accompanied by six Study Skills laboratories that are developed to provide a more in-depth view of selected areas of college level survival skills. Peer volunteers provide personal support and information about University services for students in the Program.

The Office of Student Affairs is under the direction of the Dean of Students, and coordinates many services available to students. Its primary purposes, however, are to ensure 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 student discipline, registered student organizations, student health insurance, Men and Women of Mines, Who's Who Among Students in American Colleges and Universities, the Leadership Development Program and Liaison with the Student Association. The Office is located in The Union 102 West.

University Counseling Service coordinates and provides a variety of services for all members of the University community. The core of these services is personal, vocational and academic counseling available to students, staff and faculty.

Other services coordinated by the Counseling Service include the Career Information Center, and testing. The Career Information Center, jointly administered by the Counseling and Placement Services, is a centralized library and resource center for students seeking information about graduate and professional opportunities and career opportunities in their major areas or related fields.

The office also serves as a testing center administering interest, aptitude and personality tests and a wide range of achievement tests such as the LSAT, SAT, ACT, GRE, GMAT, CLEP, TOEFL, NTE, Miller Analogies Test and Dental Aptitude Test. Placement tests are given in Biology, English, History and Mathematics. The office is located in The Union 103 West.

University Placement Service assists students in finding part-time employment while enrolled and permanent employment after graduation. The office also provides career counseling and advises students of future job opportunities, arranges interviews with agencies, organizations, or schools, gives advice on the best procedures for obtaining suitable employment, supplies employers with the names of prospective employees and 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 also 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.

Credit Class: Quantitative Study Skills, MATH 3121, is designed to help any student who needs to learn to solve word problems and apply quantitative skills in such courses as freshman chemistry, physics, calculus and business math. Students may register for these classes at registration each semester.

Study Skills I: Eight weeks, non-credit college study skills classes, followed by six weekly lab sessions in the Learning Assistance Lab, teach students to take lecture notes, study textbooks, prepare for and take exams, manage time, use the library, and otherwise develop skills needed for academic success. Students may enroll for these free classes during registration.

Study Skills II: Eight weeks, non-credit college reading class teaches students to improve their reading of textbooks, secondary sources, library materials, and other assigned reading materials. Instruction in rapid reading and skimming skills, the close reading of difficult material, and critical reading. Students may enroll for these free classes during registration.

Non-Credit Classes: Non-credit, short-term classes offered in study skills, math, writing and English, modern language and English conversation, subject reviews, and standardized test-taking techniques for the GRE, GMAT, LSAT, MCAT and PPST are scheduled and announced 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 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, chemistry and other sciences, writing, modern languages, study skills, accounting, economics, finance and nursing.

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 several experienced clinical assistants, and is located in The Union 206 West.

International Student Services serves as a source of information for prospective international students. 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.

Career placement service is available to international students in cooperation with the University Placement Service and also with the National Association for Foreign Student Affairs (NAFSA)

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

Student On-Campus Housing is provided in the University's two high-rise co-educational residence halls, Barry Hall and Kelly Hall. Both are air-conditioned and all student rooms are furnished with adequate facilities including bed, desk and sink. Mail delivery is provided to the residence halls daily Monday through Friday. Storage rooms, Music Room, Physical Fitness Center, TV lounges, quiet study areas and public lounges are provided, as are laundry rooms with automatic coin-operated washers and dryers. All meals are served at the Commons, immediately adjacent to the residence halls. Twenty meals per week are served, and no-meal contracts are also available.

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. There is usually a waiting list for student family apartments.

Application 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:

The Housing Office
105 Kelly Hall
UT El Paso
El Paso, Texas 79968
(915) 747-5353

All students residing on campus must sign a residence hall or apartment agreement which is a lease representing the contractual responsibilities of both the resident students and the University. An advance deposit for the residence halls and for student family apartments must accompany the signed lease-agreement.

For specific information on current rates in the residence halls or the student family apartments, please refer to the section on housing in the Financial Information section of this catalog.

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 about insurance is available at The Union 109 West, 747-5100.

Services include health promotion with emphasis on good health habits to keep healthy. Group sessions are offered for diet and weight control.

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 AM to 6 PM.

Student Leadership Development is a program designed to develop the leadership qualities of UT El Paso students. The program uses a variety of workshops, retreats, seminars and self-paced learning experiences to enhance three essential leadership qualities: creativity, managerial skill and good judgment. The approach to leadership consists of five individual programs, each with special aims and procedures (1) leadership retreats; (2) leadership consultation; (3) a freshman leadership program (4) noon leadership development workshops; (5) peer facilitator training program.

Each program utilizes the expertise of campus leaders — student, faculty and staff — as well as local, state and national leaders. The office is located in The Union 102 West.

Student Programs Office is the Union's programming branch, and provides programs and activities to complement the educational development process at The University of Texas at El Paso. These programs and activities, being both entertaining and co-curricular, can be used to develop personal and social skills and to broaden cultural awareness. Programs and activities presented by the Student Programs Office are generally free to students, staff and faculty of the University.

Activities offered by this office include the University Film Series, Fine Arts Exhibits, humorous and dramatical theatre presentations and speakers of local, national and international repute, novelty acts, festivals, and several of the Homecoming activities.

Program selections are made by committees composed of students, faculty and staff, of which there are five: Film, Lyceum, Arts, Entertainment, and Special Programs and Activities.

Students, faculty and staff interested in serving on these committees should apply at the Student Programs Office, The Union 302 East.

The Union is the community center of the University. The facility is service-oriented for the auxiliary needs of students, faculty and staff. The Union is provided to coordinate and house beneficial co-curricular activities, student and faculty meetings, departmental seminars and conferences of the University community, to promote the personal, recreational and cultural development of the student through the Student Programs Office, and to foster an intelligent interest in the University. The Union as both a building and concept is dedicated to furthering and complementing the academic and educational programs of the University. The Union is a member of the Association of College Unions-International (ACU-I).

The building provides office space for most of the student service functions which report to the Dean of Students and also houses the following: the Union Food Service/Campus Concessions (Sundries Center and cafeterias), the Music Listening Room (TV, magazines, cards, etc.) the Recreation Center (video games, ping pong, billiards, etc.), the Union Theater and the Union Exhibition Gallery and lounges. Meeting rooms are available to registered student organizations and the general University community.

The Union also includes the Bookstore, Student Association, Student Programs Offices and student organizations, a multi-purpose conference center, and office space for Student Publications and the Post Office.

Union Information Center is located on the first floor of The Union, West lobby. The main purpose of the Information Center is to provide personal service to members of the campus community and visitors. Available at the center, along with information on how to get where you are going, are various brochures on campus programs and a listing of current events. There is also a personal message board, and, if you are unable to get to the center, you can find out what's going on by calling 747-5455. The center is open Monday through Friday.

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

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.

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

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 co-rec innertube water polo, 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: frisbee, rodeo, karate, fencing, racquetball, soccer, sport parachuting, swimming, tennis, volleyball, and wrestling.

Drop-in Recreation involves leisure time use of recreational facilities. There are basketball, volleyball, badminton and indoor handball courts, out-door handball courts and grass fields are also available for use.

The Outdoor Adventure Programs 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 skiing, bicycling and camping equipment for students' use. The center is located in room 40 Memorial Gymnasium.

The Student Association is the official voice of the student body in the University decision-making process and 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 president of the Student Association is the chief executive of the Student Association.

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, The Union 303 East. The Student Association Internal Affairs Vice-President presides at senate meetings, which are open to all students. The external affairs Vice President is the liaison with areas or groups outside the University.

The Student Supreme Court, consisting of seven justices, is the highest student court in the Judicial branch of the student gov-

ernment. 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 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 reapply 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-three professional academic groups, eighteen honoraries and fourteen social fraternities and sororities. In addition, there are a number of service, religious and political groups.

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 woman today as they enter or return to the University. The UWC serves as a clearinghouse of information on services, departments, community agencies in such areas as admissions, academic advising, child care, legal services, health services, personal or career counseling, financial aid, etc.

The Center also sponsors orientations, referrals, workshops, films, lectures and other programs related to women. The services are available to all currently enrolled students or individuals contemplating enrolling at the University.

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, and also serves as a clearinghouse for referral of eligible students to a variety of other services, both on-campus and elsewhere.

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 is located in the News Service Building, South, (915) 747-5342.

Undergraduate Recruitment and Scholarships assists prospective students with enrollment at the University by informing them of the admission procedures, financial aid resources, and by providing general University information. New Student Orientation and the University's Scholarship Program are 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. In addition, the University's Provisional Advising Program is located in the Office of Undergraduate Recruitment and Scholarships. The office is in 115 Administration Building, (915) 747-5896.



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

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: \$5.00 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 the 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. Classes dropped prior to the official Census Date will be deleted from a student's semester record. Student-initiated drops completed after this period but prior to the end of the 6th week of a long session, or for appropriately shorter periods during a summer session, will receive a notation of *W*. Students dropping all classes are withdrawing and should consult the paragraphs on "Withdrawal from the University."

After these dates, it is ordinarily not possible to drop a course. In exceptional circumstances, however, a student may seek per-

mission to drop by providing the instructor with a written statement detailing the urgent reasons for dropping. If the drop is approved, the transcript will show *W* (if passing), or *F* (if failing at the time of the drop).

FACULTY-INITIATED REGISTRATION CHANGES

At the discretion of the instructor concerned and with concurrence of the instructor's academic dean a student may be dropped from a course because of excessive absences or lack of effort. The instructor determines whether the student is to receive an *F* or a *W*.

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 instructor's academic dean and the dean of students. The instructor determines whether the student is to receive an *F* or a *W*.

WITHDRAWAL FROM THE UNIVERSITY

Withdrawal from the University must be done through the Office of Registration and Records. Upon clearing the appropriate paperwork before the deadline for student-initiated drops from classes, the student will receive a *W* in each course for which enrolled at the time of withdrawal. If a student withdraws after that deadline, the instructors will assign grades of *F* or *W*.

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

COMPLETION OF REQUIRED FRESHMAN-LEVEL COURSES

All freshman courses which are required by specific course number must be completed before the student is within 30 semester hours of graduation; otherwise, no credit will be granted toward fulfilling the minimum credit hour requirements for the degree, even though the courses must be completed. This loss of credit penalty may be waived by the academic dean under exceptional circumstances. Inter-collegiate as well as intra-collegiate transfer students who lack required freshman courses must register for one or more such courses each semester until all requirements have been completed. Transfer students with senior classification will receive credit for required freshman courses provided the conditions stated above are fulfilled.

UNDERGRADUATE COURSE LOAD

In no case may a student whose grade point average is 2.0 or higher register for more than 21 hours in a semester or more than 7 hours in a single summer term without written permission of the academic dean. Full-time students are those who are registered

for 12 or more semester hours in a fall or spring semester or 6 or more semester hours 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 Academic Probation, Academic Suspension/Dismissal, 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, 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.

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
I	Incomplete	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.

Because the grade of I affects the GPA as an F, students can be placed on probation or be suspended with unresolved hours of I on the record.

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

Grade	Meaning
S	Satisfactory, in a Pass/Fail course
U	Unsatisfactory, in a Pass/Fail course
P	In Progress
W	Withdrawal
CR	Credit by examination

The following temporary administrative grading notations may appear on grade reports or academic records, and are not included in GPA calculations:

Notation	Meaning
N	Not reported by the faculty or because of some 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 Office of Registration and Records during the first four weeks of the long semester and the first week of the summer session. 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.

Credits obtained on a Pass/Fail basis may only be used for elective credit if approved by the student's department. Courses taken on a Pass/Fail basis are disregarded in determining the grade point average. There is no assurance that these credits will be counted 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 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 under 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 special permission of the student's academic dean. A college may require that a student obtain approval prior to repeating a course under condition #1, above. Students **MUST** request approval to repeat a course under condition #2, above, from the dean of the college in which they are majoring, **BEFORE** repeating the course. The GPA recalculation and record annotation will be done following receipt of final grades for the semester during which the course was repeated, but only if a grade of A, B, C, D, or F was earned when the course was repeated.

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 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 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.

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The courses for which credit can be earned by examination are:

Course		Test Used
ACCT 3201, 3202	CLEP	Introductory Accounting
BIOL 3105, 1107, 3106, 1108	CLEP	General Biology or CB-ACH Biology
BLAW 3301	CLEP	Introductory Business Law
CHEM 3105	CLEP	General Chemistry or Department Exam
CHEM 3106, 2106	Departmental Examination	
ECON 3203	CLEP	Introductory Macroeconomics
ECON 3204	CLEP	Introductory Microeconomics
ED PSYCH elective	CLEP	Educational Psychology
ENGL 3111	CLEP	College Composition with Essay, or
	CB-ACH	English Composition with Essay
ENGL 3111, 3112	CLEP	College Composition with Essay, or
	AP	English Literature/Composition
HE 3202	Departmental Examination	
HIST 3101	CLEP	Early Colonization to 1877
HIST 3102	CLEP	1855 to Present
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
NURS 3250, 3302, 3313, 7302, 7303, 7370, 7371	Departmental Examination	
PHYS 4103, 4104	CB-ACH	Physics
PHYS 4210, 4211	AP	Physics
PHYS 4210	AP	Physics C — Mechanics
PHYS 4211	AP	Physics C — Electricity & Magnetism
POSC 3110	CLEP	American Government
PSYC 3101	CLEP	General Psychology
PSYC 3210	CLEP	Human Growth and Development
SOCI 3101	CLEP	Introductory Sociology
STAT 3201	CLEP	Statistics

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. Courses for which placement is possible are:

Course	Test Used
ENGL 3110	Test of Standard Written English (TSWE)
FREN 4101	Departmental Examination Credit is granted if next course in sequence is successfully completed
GERM 4101	
SPAN 4101	
SPAN 4103	
MC 3200	Departmental Examination
MATH 3105, 3106, 3120, 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

It is the policy of the University to evaluate transfer work for new applicants and for former students who are transferring work back to UT El Paso. Equivalent or elective credit is generally given for academic courses taken at accredited colleges or universities, and the credit allowed is treated as though the work were done in residence here. 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 student's academic dean determines which of the evaluated courses will count toward a particular degree program.

CREDIT BY CORRESPONDENCE AND EXTENSION

Not more than 30 semester hours of credit earned by correspondence and/or extension may be applied toward a degree. Of those 30 hours, not more than 18 may be earned by correspondence.

ABSENCE FROM EXAMINATIONS

A student absent from a test during the semester is graded zero on that test unless another policy is set by the instructor.

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 standing 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 student 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, an application for readmission must be made to the Office of Admission and Evaluation. Before a decision is made on the application, the student will be required to negotiate a Contract of Readmission with the academic dean of the previous or intended new major. If readmitted, the student will be permitted to re-enroll under academic probation, plus any special conditions of the Contract of Readmission.
- **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, an appli-

cation for readmission must be made to the Office of Admission and Evaluation. Before a decision is made on the application, the student will be required to negotiate a Contract of Readmission with the academic dean of the previous or intended new major. If readmitted, the student will be permitted to re-enroll under academic probation, plus any special conditions of the Contract of Readmission.

- **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.

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 "six-year rule" (see Catalog Requirements below).

Irrespective of whether the student was eligible to re-enroll at the end of the last period of enrollment at the University, negotiation of a Contract of Readmission 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

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

A student may obtain a degree by successfully completing the course requirements of the catalog in force at the time of admission to the University, or the course requirements of a later catalog published during his enrollment at the University provided the requisite courses are still being offered. Graduation requirements in a given catalog are in effect for six years after the date of the catalog chosen. A student may choose a catalog only

from one of those years during which he or she was enrolled and earned credit at this University. A minimum of nine (9) advanced hours in the major field must have been completed in residence not more than three years previous to the date of graduation. No more than six one-hour courses may be counted toward completion of the minimum total hours required for any undergraduate degree, except with specific approval of the academic dean. Students entering the University for the first time during the summer session will be subject to the requirements of the catalog for the next long session, or of a later catalog.

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.

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, but the final deadline is the end of the second week of classes in the semester or session in which the degree is to be conferred. Diplomas are distributed by the Office of Registration and Records after all graduates have been certified by the academic deans. It is the graduate's responsibility to pick up the diploma from the above office or to make arrangements with that office to have it mailed.

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

University Honors Program students will enroll in selected honors courses and in special honors sections of regular courses. Courses may be experimental, team-taught, or interdisciplinary and most will be small in size to permit more discussion and interaction with the instructor and other students than is possible in larger classes. The courses emphasize writing, theory, critical thinking and oral expression. Depending upon the student's major, special independent readings courses and a Senior Honors Project are also available.

University Honors students have a variety of enrichment opportunities available to them. Most honors classes are located in Miners' Hall, home of the Honors Program and Honors Student Lounge. Honors students edit a monthly newsletter which provides a regular communication and writing vehicle. Each month, an Honors Forum is held with guest speakers on career, research, or other university issues. The Honors office will also facilitate mentoring between interested faculty and students. The annual Honors Banquet recognizes Honors students' academic performance.

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. Honors students are expected to maintain a GPA of 3.3 and to complete at least 9 hours of honors courses by the end of the sophomore year. There are two options in the program:

UNIVERSITY HONORS DEGREE—This option gives the student an opportunity to experience a richer, more intense and more personalized exposure to faculty in the complete spectrum of required academic work. Candidates will take honors sections of nearly all of their basic required courses, and will usually complete either 6 hours of upper-division honors courses or a 6-hour Honors Senior Project in their major. The Honors Degree Option consists of the following course requirements, which have been

planned to accommodate the curricular requirements of any major with little or no additional credit load:

Chemistry 3105, 3106 or Biology 3105, 3106 or Physics 4210, 4211 (any 6-hour combination of honors sections of these courses will satisfy the science requirement; e.g., CHEM 3105 and BIOL 3105 or PHYS 4210)

Mathematics 4111 or 3280 or Psychology 3103 or Accounting 3201*

Political Science 3110-3111

History 3101-3102 or 3103-3104

English 3111 (or 6111) and 3112 (may be achieved by examination)

Complete any 3201-3202 and 3203-3204 sequence in modern languages; or certify sophomore level competence by examination; or complete Computer Science 4101 or 4120*

6 hours of any upper-division humanities, social science, science or approved departmental honors courses; at least one such course will be offered each semester. 3 hours of this requirement may be met by approved independent study. These hours may also satisfy requirements in the student's major. In the case of Nursing/Allied Health or Engineering students, approved lower-division courses may be used.

OR

6 hours Honors Senior Project

*Regular non-Honors sections will satisfy these requirements.

Upon consultation with and approval of the student's departmental advisor and the Honors Program advisor, a maximum of 9 hours of these courses 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 freeing an Honors student to venture a course which he or she might otherwise feel inadequately prepared for.

Student Life Policies and Procedures

General Regulations

Detailed policies and procedures affecting student life are printed in the *Student Handbook of Operating Procedures*. 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 on campus. All students are expected and required to obey the law, to show respect for properly constituted authority and to observe correct standards of conduct.

Illegal conduct (including the illegal use, possession, or sale of drugs or narcotics, use of alcoholic beverages, dishonesty, gambling, defacing of property, endangering the health or safety of others, use of abusive or vulgar language, hazing, altering of records, possession or use of firearms, failure to respond promptly to official notices, etc.) will subject the student to disciplinary action.

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 examination 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.

Upon completion of this sequence with an overall cumulative GPA of 3.3 or higher, the student is eligible for 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. Finally, a cumulative GPA of 3.5 or higher may qualify the student for Academic Honors.

HONORS CERTIFICATE—Honors students who elect not to pursue the Honors Degree may obtain an Honors Certificate upon graduation by completing any 18-hour sequence of honors courses, of which at least 6 hours must be upper-division, and by maintaining a cumulative GPA of 3.3 or higher. Nursing/Allied Health or Engineering students may substitute approved lower-division courses. Upon graduation, the notation "Honors Certificate" will appear on the permanent academic record and on the diploma, and all honors courses completed will be marked with (H).

Students wishing to enroll in the Program are invited to discuss their plans with 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.

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.

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 official transcript or degree, restitution, failing grade, denial of degree, suspension and expulsion. 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 may 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, Rubella, and Polio. 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 Records Policies

The University of Texas at El Paso has developed policies regarding academic records of students which are in accordance with federal legislation such as the Family Educational Rights and Privacy Act of 1974, as well as legislation of the state of Texas. 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, how they are created and maintained, the use to which they are put, and how and to whom they can be released. Full information on legal rights and responsibilities of students and of the University is contained in the *Student Handbook of Operating Procedures* published by the Dean of Students. This section is intended to summarize policies and procedures having to do with academic records.

ACADEMIC RECORDS

An official academic record is created when an individual applies for admission to the University and if the applicant enrolls, however briefly, a permanent official record is maintained in perpetuity. All documents received become property of the University and cannot be returned. Copies of documents from other institutions submitted for admission purposes are released for internal use only. A student needing a copy of a transcript from a previous school must request the copy directly from that institution. The Office of the Registrar shares information from the academic record with other offices of the institution which are involved in the admission process or which are responsible for monitoring and assisting student progress toward a degree. Such offices include the academic dean and departmental offices of the student's major.

At each successive registration and following final examinations for each semester or term, academic records are updated, and reports are made to University offices which need such information. Changes in grades, evaluation of transfer credit, etc., result in changes to records and appropriate notification. Most of these procedures include notification to the student that the changes have been entered into the record.

REVIEW OF ACADEMIC RECORDS BY STUDENTS

The University encourages students to take an active interest in their academic records. To this end, academic records are open to student review in consultation with the faculty or administrative person responsible for the particular record. Faculty and administrators in University offices are available to discuss any questions students have about academic records. The Registrar is the person responsible for official academic records of students.

RELEASE OF ACADEMIC RECORDS TO OTHERS

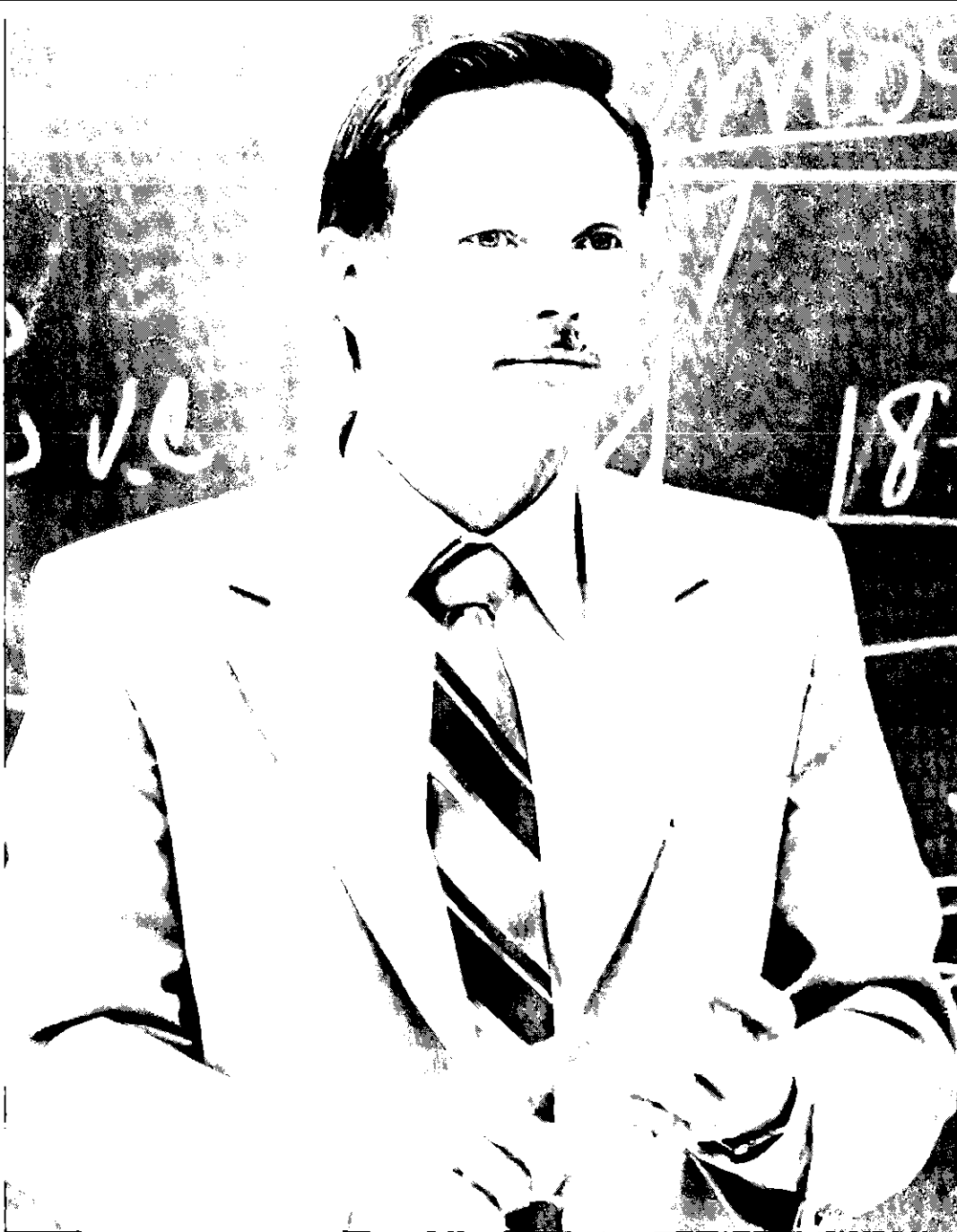
Matters which pertain to the education records of an identifiable student are covered by the provisions of the Family Educational Rights and Privacy Act of 1974, hereinafter referred to as the Buckley Amendment. The Buckley Amendment was enacted by Congress for the purpose of excluding from public disclosure personally identifiable information relating to a student in a public institution of higher education. In general, academic records for a student are not released to persons, companies, agencies, or institutions outside the University except by explicit request of the student. They are also not released, except by student request, to persons within the University who have no "legitimate educational interest" such as a dean or advisor has. Exceptions to this include federal and state agencies authorized access by law or in compliance with a judicial order or subpoena. In these cases, the University makes every effort to notify the student prior to release.

The University is often asked to release academic information to parents. It cannot do so under the law except by the student's request but, similarly, it cannot release financial information supplied by parents, in support of financial aid applications, to the student. The law anticipates candor between parents and students but protects the University in the event it does not exist.

The usual way for students to authorize release of information from their academic records is to come to the Office of Registration and Records and request that a transcript or other form of certification be sent to a third party. Forms for this purpose are available in 201 Administration Building. Frequently, students will receive other forms from agencies or institutions which they should bring to the office for certification.

DIRECTORY INFORMATION

The Buckley Amendment provides that the University may disclose personally identifiable information from the education records of a student (name, address, telephone number, major field of study, dates of attendance, degrees and awards received, etc.). However, the student has the right to refuse to permit the release of any or all of the categories of personally identifiable information as directory information. The full list of directory information is printed in the student handbook and in the Schedule of Classes available prior to each semester. There is a form available in the Office of Registration and Records by which a student may request that directory information not be released.



Accounting
Economics and Finance
Management
Marketing

Ronald W. Hasty, Dean
Wilke D. English, 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 prepare them 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 1982, including two Micro-computer laboratories and an HP3000 Mainframe.

The undergraduate program in the College leads to the Bachelor of Business Administration (B.B.A.) degree. Graduate programs lead to the Master of Arts (M.A.) 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*.

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; Commercial Banking; Computer Information Systems; Economics; Finance; International Business; Management, with concentrations available in General Management, Human Resource Management, Production Management, Marketing, with concentrations available in Consumer Marketing, Industrial Marketing, Marketing Management; Real Estate.

PRE-LAW STUDY

The Bachelor of Business Administration degree 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.

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.
- Advising is required before each registration for all College of Business students. Pre-Business students are advised in the Office of the Dean, Room 101, Business Administration Building. Other students are advised by the department of their major option.
- 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.
- Completion of 4a and 4b above is required before enrolling in any junior- or senior-level (3300 or 3400) course that is

taught in the College of Business Administration. Such courses taken before the requirements 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.

- When a major option has been selected, the student will file a degree plan in the Office of the Dean and, at the same time, request a change of major from Pre-Business to the selected option.
- A freshman-level 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 credit 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.
- Non-BBA students wishing to take upper division business courses must have Junior standing (60 credit hours) and specific course prerequisites before enrolling.

UNDERGRADUATE COURSE OF STUDY

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

Non-Business Core Requirements	—54 semester hours
Business Core Requirements	—48 semester hours
Major Option Requirements	—30 semester hours
Total:	132

Non-Business Core Requirements (54 semester hours)

- ENGL 3111* and 3112 (or ESOL 3111 and 3112);
- SPCH 3101* or 3102 or 3104 (3104 requires SPCH 1104, laboratory);
- MATH 3120 and 3201;
- POSC 3110 and 3111;
- HIST 3101-3102 or 3103-3104;
- Natural Science: Biology, Chemistry, Geology, or Physics;
- Behavioral Science: Anthropology, Cultural Geography, Sociology, or Psychology;

- 6 — Humanities Electives: ARTH 3100, 3110 or any Art History; DRAM 3113, 3290, 3317, 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.
 - 3 — Logic: Computer language**, PHIL 3104, or MATH (3200 or above, excluding Classroom Mathematics 3302, 3303, 3304);
 - 6 — ECON 3203 and 3204;
 - 3 — Non-Business Elective***
- *English 6111 may be counted for ENGL 3111 and SPCH 3101
 **Computer language is required for the Computer Information Systems Option
 ***ENGL 3001, ENGL 3110, MATH 3105 and prerequisites for ESOL 3111 may *not* be counted as electives in the degree plan

Business Core Requirements (48 semester hours)

- 6 — QMB 3201 and 3301;
- 6 — CIS 3225 and 3300;
- 3 — ADMS 3308;
- 6 — MKT 3300 and 3304;
- 9 — ACCT 3201 and 3202 plus 3 hours from ACCT 3314, 3321, or 3323 (department specifies);
- 9 — MGMT 3300, 3321, and 3400;
- 3 — BLAW 3301;
- 3 — FIN 3310;
- 3 — ECON 3302 or 3303 or FIN 3320. (Accounting, Banking, Economics, and Finance options require FIN 3320).

Major Option Requirements (30 semester hours)

- Accounting Option
 - 12 — ACCT 3322, 3323, 3404, 3327;
 - 9 — Electives from ACCT 3401, 3402, 3403, 3405, 3407, 3421, 3423, or 3428;
 - 9 — Free Electives* (6 hours must be upper division);
- Commercial Banking Option
 - 12 — FIN 3412, 3411, and 3418 plus 3 hours from FIN 3315, 3410, 3325, or 3425;
 - 6 — Accounting Electives (upper-division courses);
 - 12 — Free Electives* (6 hours must be upper division).
- Computer Information Systems Option
 - 18 — CIS 3235, 3335, 3425, 3445, 3455, and 3465;
 - 3 — Elective from CIS 3499, 3315, 3452, or 3462;
 - 9 — Free Electives* (6 hours must be upper division).
- Economics Option
 - 6 — ECON 3302 and 3303;
 - 12 — Electives from upper-division Economics courses;
 - 12 — Free Electives* (6 hours must be upper division).
- Finance Option
 - 15 — FIN 3315 and 3410 plus electives from Finance upper-division courses;
 - 3 — Accounting Elective,
 - 12 — Free Electives* (6 hours must be upper division).
- International Business Option
 - 12 — Electives from ACCT 3425, BLAW 3425, ECON 3425, FIN 3425, MGMT 3425, or MKT 3425;
 - 6 — Upper-division electives selected from a single *business* area or two additional business or non-business international courses;
 - 12 — Free Electives* (6 hours must be upper division).

Management Option

- 9 — MGMT 3310, 3311, and 3315;
- 12 — Free Electives* (6 hours must be upper division)
 Plus ONE of the following concentrations:
 General Management (9 semester hours — 6 hours of upper-division Management electives, and 3 hours of upper-division Business electives.
 Human Resource Management (9 semester hours — MGMT 3337, 3338, and 3403.

Production Management (9 semester hours) — MGMT 3333, 3331 or 3336, and 3422 or 3424.

Marketing Option

- 9 — MKT 3301, 3302, and 3495;
- 12 — Free Electives* (6 semester hours must be upper division)
 Plus ONE of the following concentrations:
 Consumer Marketing (9 semester hours) — MKT 3310, plus 6 hours from 3314, 3316, 3400, 3405, 3492, or 3494.
 Industrial Marketing (9 semester hours) — MKT 3490, plus 6 hours from 3316, 3405, 3410, 3430, 3492, or 3494.
 Marketing Management (9 semester hours) — MKT 3492, plus 6 hours from 3316, 3400, 3405, 3430, 3490, or 3494.

Real Estate Option

- 15 — REST 3300, 3405, 3406, 3408, and BLAW 3305;
- 3 — Elective from REST 3410, 3415, 3425, 3450 or 3496;
- 12 — Free Electives* (6 semester hours must be upper division)
 *ENGL 3001, ENGL 3110, MATH 3105 and prerequisites from ESOL 3111 may *not* be counted as electives in the degree plan.

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. Additional course requirements are as follows: EDPC 3301; RED 3342, SCED 2310, 3311, 3317, 3470 (or ADMS 3499); SPED 3425, TED 1201, 9495; plus 3 hours each of advanced typewriting, advanced shorthand, and office procedures, all with grades of B or better.

**SUGGESTED ARRANGEMENT OF COURSES:
 FRESHMAN YEAR**

1st Semester	Hours
English 3111 ¹ (ESOL 3111) ²	3
History 3101/3103	3
Political Science 3110	3
Behavioral Science	3
(Anthropology, Cultural Geography, Sociology or Psychology)	
Speech 3101, 3102, or 3104	3
	<hr/> 15

2nd Semester	
English 3112 (ESOL 3112)+	3
History 3102/3104	3
Political Science 3111	3
Mathematics 3120	3
Behavioral Science	3
Natural Science	3
(Biology, Chemistry, Geology, or Physics)	
	<hr/> 18

SOPHOMORE YEAR

1st semester	
Humanities Elective	3
Mathematics 3201 +	3
Quantitative Methods 3201 +	3
Economics 3203 +	3
Accounting 3201 +	3
	<hr/> 15

2nd Semester	
Humanities Elective	3
Computer Information Systems 3225 +	3

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Logic (see major department).....	3
Economics 3204 +	3
Accounting 3202 +	3
Elective (non-business)**	3
	18

JUNIOR YEAR

1st Semester	
Marketing 3300	3
Computer Information Systems 3300	3
Management 3300	3
Accounting 33XX (see major dept).....	3
Finance 3310	3
	15

2nd Semester	
Administrative Services 3308	3
Quantitative Methods 3301	3
Management 3321	3
Business Law 3301	3
Major Option 3XXX	3
Major Option 3XXX	3
	18

SENIOR YEAR

1st Semester	
Finance 3320 or Economics.....	3
3302/3303	
(see major department)	
Major Option 3XXX	3
Major Option 3XXX	3
Marketing 3304	3
	15

2nd Semester	
Management 3400	3
Major Option 3XXX	3
Major Option 3XXX	3
Free Elective ³	3
Free Electives	6

Total Semester Credit Hours: 132

+Grade of C or better required in these courses.

¹English 6111 may be counted for English 3111 and Speech 3101.
Prerequisite: English 3110 or placement by examination.

²English 3001, English 3110, Math 3105 and prerequisites for ESOL 3111 may not be counted as electives in the degree plan.

³Accounting and Computer Information Systems Options require one additional course in the option.

Accounting

260 Business Administration

(915) 747-5192

CHAIRMAN: Richard G. Schroeder

PROFESSOR: Schroeder

ASSOCIATE PROFESSORS: Austin, Flores, Collier, Harris

ASSISTANT PROFESSORS: Hoffmans, Koehler, Leahey, Mann,

Mayne, Omundson, Pavelka, Salome

VISITING ASSISTANT PROFESSOR: Braubach

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-B.B.A. 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.

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. *Prerequisite:* 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. *Prerequisite:* 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.

For Undergraduates and Graduates

3401 Advanced Accounting I (3-0)

A study of special problems of partnership accounting; of home office and branch accounting; and of corporate mergers, acquisitions. *Prerequisite:* 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. *Prerequisite:* ACCT 3322.

3403 Accounting Systems (3-0)

Analysis of fundamental accounting systems. Emphasis on systems design, relationship of system and organization, objectives, policies, procedures, and plans. *Prerequisite:* ACCT 3322.

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. *Prerequisite:* 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. *Prerequisite:* ACCT 3322.

3407 Internal Auditing (3-0)

A study of modern internal and operational auditing including the techniques, tools, and measurements utilized in testing, appraising, and evaluating internal control systems for efficiency and effectiveness. *Prerequisite:* ACCT 3321.

3421 Advanced Cost Accounting (3-0)

Theoretical issues of process and standard costing, performance measurement and capital budgeting, quantitative techniques, and other selected topics. *Prerequisite:* 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. *Prerequisite:* ACCT 3327.

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.

3497 C.P.A. Problem Review (3-0)

A study of past C.P.A. examinations and current topics. Cannot be used to satisfy the thirty semester hour requirement for an accounting major. *Prerequisite:* Twenty-one semester hours of accounting or consent of instructor.

3498 Independent Study in Accounting (3-0)

Prior 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. *Prerequisite:* Instructor's permission.

Economics and Finance

236 Business Administration
(915) 747-5245

CHAIRMAN: Timothy P. Roth

PROFESSOR EMERITUS: Paul D. Zook

PROFESSORS: James, Roth

ASSOCIATE PROFESSORS: Brown-Collier, Duriez, Schauer, Smith, Tollen

ASSISTANT PROFESSORS: Brannon, Evans, Holcomb, Sprinkle, Stripling

Economics (ECON)

For Undergraduates

3101 Basic Issues in Economics (3-0)

This course is designed to expose non-business majors to a broad range of economic issues and policies instituted to solve them. The course will emphasize trends in economic thought and selected topics of current interest.

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 National Income Analysis (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. *Prerequisite:* ECON 3203.

3303 Intermediate Economic Analysis (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 Policies (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.

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. *Prerequisite:* ECON 3204.

3373 Introduction to Econometrics (3-0)

An introductory course designed to acquaint the student with the basic concepts in model building, different types of economic models, problems in techniques of quantifying models and the use of such models for public and business policy. *Prerequisite:* ECON 3204.

3380 History of Economic Thought (3-0)

A study of the development of principal economic doctrines and schools of economic thought.

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. Finance 3420 and Economics 3420 may not both be counted for credit.

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.

3430 Public Finance (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.

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.

3434 Regional Economics (3-0)

Location theory, factors influencing regional growth, and techniques of analysis. Description of economic regions and analyses of interaction among economic regions.

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.

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.

3495 Selected Problems in Economics (3-0)

Special studies in areas for which a separate course is not organized. Supervised individual reading and research; writing of a substantial paper in the area chosen for study.

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.

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:* Junior standing.

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.

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 3204 and junior standing.

3325 Money and Capital Markets (3-0)

Analyses 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.

3350 Personal Finance (3-0)

A study of modern money management from the personal point of view. Budgeting, uses of savings, consumer credit, forms of insurance and estate planning are among the topics discussed.

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. FIN 3420 and ECON 3420 may not both be counted for credit.

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.

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.

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.

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.

3495 Selected Problems in Finance (3-0)

Special studies in areas for which a separate course is not organized. Supervised individual reading and research; writing of a substantial paper in the area chosen for study. May be repeated for credit. *Prerequisite:* Consent of instructor and Department Chairman.

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.

Management

208 Business Administration
(915) 747-5496

CHAIRMAN: Manab Thakur

PROFESSORS: Blanchard, George

ASSOCIATE PROFESSORS: Ibarreche, Thakur

ASSISTANT PROFESSORS: Case, Hoffman, Lackey, Lind, Nelson,
Walter

INSTRUCTOR: Coburn

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.

3306 Insurance Law (3-0)

Solicitation and sale of insurance; persons and interests protected by insurance; selection and control of risks; disposition of claims. *Prerequisite:* Consent of instructor.

For Undergraduates and Graduates

3400 Legal Aspects of the Management Process (3-0)

The nature of the partnership and corporation and their jurisprudential problems; the rights and powers of managers and the limits of their discretion; and the manager's duties and responsibilities to his organization, to investors, to creditors, to the state, and to the general public.

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.

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.

Computer Information Systems (CIS)

For Undergraduates

3225 Information Systems and Basic Programming (2-2)

This survey course covers topics of computer hardware, software, and people who work in the computer industry. It is a foundation containing the concepts and vocabulary necessary to continue study in Computer Information Systems. Proper methods of structured programming and documentation using ANS BASIC are also taught.

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 3325.

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)

As a continuation of COBOL, this course completes the instruction of language syntax, and includes topics of sequential and random access file processing, table processing, and the use of higher level commands and utilities within ANS COBOL 74. *Prerequisite:* CIS 3235.

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)

This course covers topics of lists, linked lists, trees, queues and other elements of data structures. It serves as technical foundation for understanding and using Data Base Management systems. *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)

The fundamentals of Data Base Management Systems (DBMS) are covered and the student works with a relational Data Base Management System. In addition, problems and issues of managing in a data base environment are discussed. *Prerequisite:* CIS 3455.

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.

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. *Prerequisite:* MGMT 3300.

3311 Introduction to Personnel Management (3-0)

Provides the student with a survey of policy, procedures and current practices in the area of the personnel subsystem. Exposure is provided to current concepts dealing with selection, utilization, and retention of employees. Topics to be covered are employment, manpower development, managerial selection, compensation, and labor relations. *Prerequisite:* MGMT 3300.

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 3300 and ACCT 3201.

3321 Production/Operations Management (3-0)

Study of basic quantitative procedures and techniques employed in operations management with emphasis on the development and understanding of analytical techniques and their contribution to managerial decision-making. Statistical linear programming and general quantitative analysis applied in case problems. *Prerequisite:* QMB 3201.

3331 Methods Analysis (3-0)

Methods improvement procedures, process analysis, principles of motion economy. Determination of time standards and their relation to incentive systems. Emphasis on human relations problems. Development and control of performance standards. *Prerequisite:* MGMT 3321.

3333 Production Control (3-0)

The control of time, quantity, and quality of operations. Routing, scheduling, dispatching, and control problems. System relationships in manufacturing, sales, and technical staff departments. MGMT 3321.

3336 Purchasing Stores and Inventory Control (3-0)

Objectives, principles, and methods in managing the function of material supply in industry. Special attention to problems met in planning materials, requirements, purchasing, receiving, storing and disbursing. *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.

For Undergraduates and Graduates

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.

3402 Principles of Management Science (3-0)

The study and application of key management science techniques in business settings. Core topics to include linear programming, network models, queuing theory, and simulation. Computer programming and applications will be utilized in the solution of problems. *Prerequisites:* QMB 3201, CIS 3225.

3403 Seminar in Personnel Management (3-0)

A reading and research seminar dealing with major concepts and important current problems in personnel administration. The course consists of a broad range of readings, intensive group discussion, and the completion of individual research papers on significant subjects in the field. *Prerequisite:* MGMT 3311.

3418 Management for Technical Professionals (3-0)

An introduction to the basic elements of management and organizational behavior designed to better equip the scientist and engineer to assume managerial roles in complex organizations. Course will concentrate on basic managerial functions and responsibilities, and intra-organizational mobility. *Prerequisite:* Consent of instructor or graduate standing.

3422 Production Systems (3-0)

The study of systems theory and its application to the design of organizations. Emphasis on the design, scheduling, materials management, cost control, quality control, and the management of human resources. *Prerequisites:* ACCT 3323, MGMT 3311 and 3321, MGMT 3331 or 3336.

3424 Production Policy (3-0)

The study and analysis of cases in production/operations management. *Prerequisites:* MGMT 3311 and 3321, plus a minimum of three hours from MGMT 3331, 3333 or 3336.

3425 International Management (3-0)

This course presents a comparative approach to the study of management in international business. Using lectures and case studies, it explores the expanding world of international management by examining the historical settings of management in the United States, managerial philosophies and practice of management in major world trading countries, foreign cultures and attitudes affecting management of international business firms; the role of the business manager in world economic development. *Prerequisites:* MGMT 3300 and 3310.

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.

Quantitative Methods In Business (QMB)

For Undergraduates

3201 Fundamentals of Business Statistics (3-1)

Introduction to the foundations of descriptive statistics. Measures of location and variation, with emphasis on specific applications. Study of index numbers. Introduction to foundations of probability. Time series. Correlation analysis. The course will cover also an introduction to electronic data programming with application emphasis to the related statistical problems studied. *Prerequisite:* MATH 3120 or equivalent.

3301 Quantitative Methods In Business (3-1)

Introduction to quantitative methods applied to business decision making. These methods include multiple regression analysis and operations research techniques such as linear programming, queuing theory, Markov processes and dynamic programming. *Prerequisite:* QMB 3201.

For Undergraduates and Graduates

3401 Business Forecasting (3-0)

Introduction to the contemporary theory of economic fluctuations, economic indicators; foundations of business forecasting; analysis of business indexes in current use. Business index number construction, methods of measuring business trends and fluctuations, with applications to business forecasting. Serial and multiple correlation and business trends. Advanced study of time series. Application of forecasting methods to specific case studies, role of business forecasting in managerial planning, principles and methods of forecasting, and evaluation of the reliability of existing forecasting techniques. Short-term and long-term forecasting of industry, regional and national business trends. *Prerequisite:* QMB 3301.

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.

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.

Marketing

230 Business Administration
(915) 747-5185

CHAIRMAN: Donald A. Michie

PROFESSORS EMERITI: Lola B. Dawkins, Paul E. Fenlon, Wade J. Hatrick

PROFESSORS: Foster, Hasty

ASSOCIATE PROFESSORS: DeLisle, English, Martin, Michie, Palmore

ASSISTANT PROFESSORS: Dawson, Gifford, Sipes, Sullivan, Whistler

Administrative Services (ADMS)

For Undergraduates

3101 Typewriting/Keyboarding (3-2)

Fundamental keyboarding techniques with emphasis on development of speed and accuracy through touch typewriting. Laboratory Fee: \$5. Only for students with a typing rate of less than 40 words a minute.

3225 Advanced Office Technology (3-0)

Introduction to micro-computer equipment and software, with emphasis on the WordStar word processing program. Laboratory Fee: \$5. *Prerequisite:* Typewriting/keyboarding rate of at least 30 words per minute.

3307 Office Internship (3-0)

Office work experience with business or industrial firms. Two-hour seminar per week during internship. *Prerequisites:* Typewriting skill of 65 words per minute and permission of instructor.

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

3450 Business Education Workshop (3-0)

Areas of study will be designated.

3497 Business Report Writing (3-0)

Organization and preparation of reports of the types used in business. Techniques of collecting, interpreting, and presenting information useful to management.

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.

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.

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:* Junior standing or consent of instructor.

For Undergraduates and Graduates

3400 Advertising Management (3-0)

An introduction to mass media promotion. Emphasis is given to media selection, budgeting and evaluation of advertising campaigns. *Prerequisite:* MKT 3300.

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.

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 arrange-

ment, 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.

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.

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.

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.

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. *Prerequisite:* MKT 3300.

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.

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.

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)

Designed to provide practical work experience in marketing. To be taken during the senior year with permission of the internship advisor and the department chairperson.

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.

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:* 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.

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.

3406 Investment Analysis I (3-0)

Current concepts of real estate investment. Methods of analysis and evaluation of the various categories of real estate by quantitative techniques and computer application. *Prerequisite:* REST 3300.

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 property appraisal. *Prerequisite:* Consent of instructor.

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.

3415 Real Estate Property Management (3-0)

The course will be an indepth 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.

3425 Real Estate Appraisal II (3-0)

This appraisal course will focus on income property appraisal, for example, apartments, office buildings, farms, factories, and shopping centers. Condemnation will be addressed also. *Prerequisite:* REST 3408.

3450 Real Estate Investment Analysis II (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. *Prerequisite:* REST 3406.

3496 Internship in Real Estate (3-0)

A course designed to give a business major practical work experience. To be taken in senior year with permission of the internship advisor and the department chairperson.

3498 Independent Study in Real Estate (3-0)

Consent of instructor required.

3499 Current Topics in Real Estate (3-0)

May be repeated for credit when topics vary. Consent of instructor required.



**Educational Leadership
and Counseling
Teacher Education**

**William P. Dunlap, Dean
Jorge A. Descamps, Associate Dean
Education Building 414
(915) 747-5572**

**The College of
EDUCATION**

Introduction

The College of Education has a three-fold mission: to prepare effective teachers, counselors and school administrators; to investigate and disseminate knowledge in pedagogy; to work with persons in the profession and in the community to improve the schools.

The College offers programs that provide qualified students an opportunity to attain the knowledge and skills needed to become effective professionals. It also maintains close ties with the teaching profession through its participation in the local Teacher Center. In this cooperative endeavor, programs offered by the College are endorsed by the teaching profession and continuing relevance is maintained through pre-service and in-service classroom practice.

The faculty of the College strives to demonstrate by example the quality of teaching expected of its graduates. It also engages in a wide variety of research activities, and provides educational services to the community.

The College has two departments that offer undergraduate and graduate programs: the Department of Teacher Education and the Department of Educational Leadership and Counseling.

Undergraduate Degrees and Certificates

The College offers a Bachelor of Science in Education degree with specialization in Elementary Education, Secondary Education, and All Levels Physical Education. Students who complete the Bachelor of Science in Education meet the requirements for Texas teacher certification. These programs are accredited by the Texas Education Agency (TEA) and the National Council for Accreditation of Teacher Education (NCATE).

The College also offers Texas teacher certification programs for students who are working toward, or who have, a bachelor's degree outside of the College of Education.

For information on Graduate Programs see the *Graduate Studies Catalog*.

Instructional Facilities

The College of Education is housed in a modern building with excellent classroom and laboratory facilities. The departmental and faculty offices are on floors five through eight, and the Graduate School occupies the ninth floor.

In order to bridge the gap between classroom presentations and field applications, the College utilizes laboratories and clinics where students are offered hands-on experiences under controlled or simulated conditions. These facilities include a Kindergarten Laboratory, a Reading Center, a Science and Mathematics Laboratory, a Physical Education Laboratory, a Special Education Center, a Counseling Center, a Computer Laboratory and a Learning Resources Center.

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
- Teacher Education 1201 with a grade of S
- the Pre-Professional Skills Test (P-PST) with passing scores. This test measures basic skills in Reading, Mathematics and Writing and is offered three times each year. 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 prepared

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 working all day 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. 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 Specialization Area(s) with a GPA of at least 2.5 in each area
- completion of the following courses in the Professional Studies area with a GPA of at least 2.5:
 - Elementary: EDPC 3301; ELED 3302, 3303 or 3304, 3306, 3405; RED 3340
 - Secondary: EDPC 3301, SCED 3311, 2310 and an appropriate methods course
 - All Levels Physical Education-Elementary: EDPC 3301; ELED 3302, 3306, 3405; RED 3340; PE 3320
 - All Levels Physical Education-Secondary: EDPC 3301; SCED 3311; PE 3414, 3304
 - All Levels Art: EDPC 3301; SPED 3425; ELED 3302, 3307; ARTE 3322
 - All Levels Art-Elementary: EDPC 3301; ELED 3302, 3303 or 3304, 3306, 3405; RED 3340
 - All Levels Music: EDPC 3301; SPED 3425; SCED 3317; RED 3342
 - 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, including 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. After May 1, 1986, students must register for and pass a State certification exit test.

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

Bachelor of Science in Education: Elementary Education

- I. GENERAL REQUIREMENTS (59 semester hours)
 - 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 3106, 3302; CS 3110; BIOL 3105; GEOL 3103; PSCI 3101.
 - Electives: ARTE 3311; SPAN 4102 for non-natives or SPAN 4104 for native speakers; 3 hours of English literature or Drama.
 - Education: TED 1201.

II. SPECIALIZATION AREA AND COMBINATION SUBJECTS (42-48 semester hours)

Choose a Specialization Area from the list below and, in addition, complete the following Combination Subjects: EDPC 3301; RED 3340, 3441; SPED 3425; ELED 3406; MUSI 3334; HE 3302; PE 3318 or 3320.

III. PROFESSIONAL STUDIES (30 semester hours)

EDPC 3402; ELED 3302, 3303, 3304, 3306, 3307 3405; TED 9490.

Total: 131-137 semester hours

SPECIALIZATION AREAS IN ELEMENTARY EDUCATION

The student must choose one area and should consult an advisor for selection of area and 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 3402; plus 3 hours from HIST 3309, 3343 or ENGL 3474, 331027
3. Biological Sciences: BIOL 3106, 1107, 1108, 3216, 3318, 1319, 3320, 332118
4. Early Childhood Education: ECED 3350, 3451, 3452, 3454, 3455; SOCI 3349; HE 3202; plus 3 hours from ENGL 3305, DRAM 3350, BED 3436, TED 345024 (must take PE 3318 under combination subject)
5. Earth Science: GEOL 3104, 3304, 3305, 3350, plus 3 hours of Geology and GEOG 330618
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, 340118
8. Generic Special Education: SPED 3310, 3333, 3334, 3440, 3479; EDPC 3401, ECED 3452; PE 341424
9. Geography: GEOG 3106, 3208, 3311, 3309, GEOL 3466; plus 3 hours.....18
10. German: GERM 3201, 3202, 3355, 3357, 3401; plus 3 advanced hours.....18
11. History: HIST 3201, 3202, 3317, 3309 or 3328; plus 6 advanced hours.....18
12. 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
13. Mathematics: MATH 4110, 3280, 3300, 3303, 3304.....16
14. 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 3314 in lieu of SPED 3425)
15. Physical Science: CHEM 4107, 4108; PHYS 3107, 2343 twice, 2446 twice, 3475, plus 3 advanced hours in Chemistry or Physics.....25
16. 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)
17. Social Studies: GEOL 3466; ECON 3203, 3204; POSC 3327, 3341; HIST 3201, 3202, 3317.....24 (SOCI 3101 is strongly recommended)
18. Spanish:—non-native speakers—SPAN 3201, 3202, 3355, 3357, 3402, plus 3 advanced hours18 Spanish:—native speakers—SPAN 3203, 3204, 3356, 3357, 3402; plus 3 advanced hours18
19. Theatre Arts: DRAM 3113, 3110, 3210 (or 3221), 4313, 3325.....19 (must take SPCH 3103, 1103 in lieu of SPCH 3101, plus DRAM 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
CS 3110	Introduction to Computer Programming	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 3106	College Geometry and Algebra	3
GEOL 3103	Principles of Earth Science	3
		15

SOPHOMORE YEAR

1st Semester

ENGL 3303	English Grammar and Usage	3
POSC 3110	American Government & Politics	3
MATH 3302	Classroom Mathematics	3
ARTE 3311	Creative Art for the Classroom Teacher	3
TED 1201	Orientation to Education.....	1
3 hours of English literature or Drama.....		3
		16

2nd Semester

ENGL 3454	Teaching Comp in Elem and Middle School	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.....		3
3 hours in area of specialization.....		3
		16

JUNIOR YEAR

1st Semester

EDPC 3301	Intro to Educational Psychology	3
PE 3320	Teaching Physical Ed in Elementary School	3
or PE 3318 Physical Education for Early Childhood		3
ELED 3302	Curriculum Planning and Evaluation	3
MUSI 3334	Teaching Music in Elementary School.....	3
ELED 3307	Multicultural Ed in Elementary School.....	3
3 hours in area of specialization		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 area of specialization		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 area of specialization		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 area of specialization		3
		15

Bachelor of Science in Education: Secondary Education

- I. GENERAL REQUIREMENTS (49 semester hours)
 - Communication Arts: ENGL 3111 (or 6111), 3112, plus 6 hours sophomore level, English; SPCH 3101.
 - Social Sciences: HIST 3101, 3102; POSC 3110, 3111.
 - Mathematics/Science: MATH 3106; CS 3110; BIOL 3105; GEOL 3103; PSCI 3101.
 - Electives: ENGL 3303, plus 3 hours from Art, Music or Drama. Education: TED 1201.
- II. SPECIALIZATION AREAS (60 semester hours)
 - The student will choose two teaching fields or one composite teaching field from the list below.
- III. PROFESSIONAL STUDIES (29 semester hours):
 - EDPC 3301; RED 3342; TED 9495; SCED 3317, 3425, 3311, 2310; SCED 3312, or one of the following:
 - SCED 3467, 3468, 3470 (or ADMS 3499), 3455 (or ENGL 3455); PE 3304.

Total: 138 semester hours

SPECIALIZATION AREAS OR TEACHING FIELDS IN SECONDARY EDUCATION

The student must select two single areas or one composite area and should consult an advisor for selection of areas and scheduling of courses.

	Hours
1. Bilingual Education: LING 3307, 3308, 3472; SPAN 3402, BED 3430, 3435, 3436, 3437; RED 3441; plus 3 hours from HIST 3309, 3343 or ENGL 3374, 3310.....	30
(May not be combined with English)	
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 under General Requirements prior to BIOL 3214, 1215)	
3. Business: ECON 3203; ACCT 3201, 3202; ADMS 3308; BLAW 3301; FIN 3310; MGMT 3300; 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 CS 3110 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; ADMS 3225; EDRS 3410; plus 3 advanced CS 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; PE 3414.....	24
10. Geography: GEOG 3106, 3110, 3208, 3309, 3311, 3308, 3312, 3411, 3409, GEOL 3466.....	30
11. German: GERM 3201, 3202, 3355, 3357, 3320, 3401; plus 6 hours in German literature and 6 advanced hours.....	30
12. Health Education: HE 3201, 3202, 3307, 3401, 3403, plus 9 hours from HE 3101, 3301, 3303, 3402, 3404, 3405.....	24
13. History: HIST 3201, 3202, 3317, 3309 or 3328 plus 18 advanced hours (with no more than 9 hours in any one area).....	30
14. Journalism: MC 3102, 3201, 3206, 3250, 3355; JOUR 3302, 3304, 3305, 3307 and 3303 or 3312.....	30

15. 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)	
16. Mathematics: MATH 4111, 3212, 3217, 3325, 3328, 1282, 3280, or 3480, 3300, 3323; plus 3 hours from 3319, 3330, 3341.....	29
17. 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
18. Physical Science: CHEM 4107, 4108, 3326, 1326; PHYS 4103, 4104, 4475 plus 6 advanced hours from PHYS 2343, 2446.....	30
19. Physics: PHYS 4210 (MATH 4111 is prerequisite), 4211 (MATH 3212 is prerequisite), 1120, 1121, 1218 (may be repeated once for credit), 3325, 3326, 2343, 3351, 3441, 4475.....	30
(MATH 3326 is prerequisite to PHYS 3326, 3351, and 3441)	
20. Political Science: POSC 3231, 3224, 3336, 3325, 3328, 3327, 3322, 3340, 3330, 3320.....	30
21. 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
22. Reading: RED 3340, 3441, 3445, 3443, 3444, 3447 or 3446; BED 3437, plus 9 hours from ENGL 3456, DRAM 3301, LING 3448, or SPED 3333.....	30
23. Sociology: SOCI 3101, 3301, 3311, 3401 plus 18 advanced hours.....	30
24. 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)	
25. 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)	
26. Theatre Arts: DRAM 3110, 3210, 3113, 3221, 4213, 3325, 3332 or 3342, 3333 plus 6 hours from DRAM 3357, 3358, 3340, 3335 or 3336.....	31
(Must take SPCH 3103-1103 in lieu of SPCH 3101 under General Requirements)	

COMPOSITE AREAS:

27. English Composite: ENGL 3215, 3216, 3311, 3312, 3320, 3456, 3365 plus 6 advanced hours; RED 3447, 3441 and 3 hours from RED 3443, 3444, 3445; SPCH 3205, 3206, 3221, 3333, 3334; MC 3201; JOUR 3302, 3304.....	60
28. 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 3210, 3308, 3448, 3471; BED 3436, 3437; 3 hours from: SOCI 3336, 3357; HIST 3309.....	48
29. 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 also take PHYS 4210 (MATH 4111 is prerequisite), 4211 (MATH 3212 is prerequisite), 1120, 1121, 1218 twice. 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, 3326 (MATH 3326 is prerequisite), 2343 twice, 4475.....	56

30. Social Studies Composite: HIST 3201, 3302, 3317 plus 9 advanced hours; SOCI 3101, 3102; ECON 3203, 3204; GEOG 3110, 3106, 3309 or 3411; GEOL 3466; POSC 3327, 3328, 3341, 3336; plus 3 hours from SOCI 3370, POSC 3346, HIST 3329; and 3 hours from SOCI 3259, POSC 3321, HIST 3309.....60

2nd Semester
 TED 9495 Student Teaching in Secondary School9
 3 hours in second area of specialization3
 12

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
CS 3110	Introduction to Computer Programming	3
BIOL 3105	General Biology	3
PSCI 3101	Principles of Physical Science	3
		<u>18</u>
2nd Semester		Hours
ENGL 3112	Research and Critical Writing	3
HIST 3102	History of the U.S. since 1865	3
	3 hours from Art, Music or Drama	3
MATH 3106	College Geometry and Algebra	3
GEOL 3103	Principles of Earth Science	3
	3 hours of 3200 level courses	3
		<u>18</u>

SOPHOMORE YEAR

1st Semester		Hours
ENGL 3303	English Grammar and Usage	3
POSC 3110	American Government & Politics	3
TED 1201	Orientation to Education	1
	6 hours in first area of specialization	6
	6 hours in second area of specialization	6
		<u>19</u>
2nd Semester		Hours
ENGL	3 hours of 3200 level courses	3
POSC 3111	American Government & Politics	3
	6 hours in first area of specialization	6
	6 hours in second area of specialization	6
		<u>18</u>

JUNIOR YEAR

1st Semester		Hours
EDPC 3301	Introduction to Educational Psychology	3
SCED 2310	Evaluation in Secondary Schools	2
	6 hours in first area of specialization	6
	6 hours in second area of specialization	6
		<u>17</u>
2nd Semester		Hours
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 area of specialization	6
	3 hours in second area of specialization	3
		<u>18</u>

SENIOR YEAR

1st Semester		Hours
SCED	3 hours of appropriate methods course	3
RED 3342	Reading & Study in the Content Areas	3
	6 hours in first area of specialization	6
	6 hours in second area of specialization	6
		<u>18</u>

Bachelor of Science in Education: Physical Education

Students seeking a Bachelor of Science in Education with Specialization in Physical Education and All-Levels PE Certification must also complete the requirements for Elementary or Secondary Certification in Physical Education.

GENERAL REQUIREMENTS (49 semester hours)

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.

Social Sciences: HIST 3101, 3102; POSC 3110, 3111.

Mathematics/Science: MATH 3106; CS 3110; BIOL 3105-1107, and 4211-1212.

Electives: 3 hours from Art, Music or Drama; and 3 hours from a Behavioral Science, Economics, Humanities or Languages (SPAN 4102 recommended for students working on All-Levels PE and Elementary certification).

Orientation to Education: TED 1201.

SPECIALIZATION AREA (43 semester hours)

PE 4301, 3103, 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, 3411; also PE 3303 (if Elementary) or PE 3304 (if Secondary).

Students seeking All-Levels Physical Education and ELEMENTARY CERTIFICATION must complete the following:

COMBINATION SUBJECTS (21 semester hours): ELED 3303, 3304, 3306, 3405, 3406; RED 3441; HE 3302.

PROFESSIONAL STUDIES (24 semester hours)

EDPC 3301; ELED 3307; PE 3414, 3303; RED 3340; TED 9848.

Total: 137 semester hours

Students seeking All-Levels Physical Education and SECONDARY CERTIFICATION must complete the following:

Second Teaching Field: (must choose one field from the list which appears under Secondary Education)

PROFESSIONAL STUDIES (24 semester hours)

EDPC 3301; SCED 3317, 3311, 3467 or 3468; PE 3414, 3304; TED 9498; SCED 3467 or 3468 must be taken in addition to PE 3304 when second teaching field is math or science.

Total: 146 semester hours

ATHLETIC TRAINING SEQUENCE: A sequence of courses to meet the educational requirements of the Texas Athletic Trainers Association is available. Students who wish to prepare for the Texas Association examinations should consult both the head athletic trainer and a physical education advisor. A limited number of students will be admitted to this sequence.

Physical Education (All-Levels PE and Elementary certification)

SAMPLE OF 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
CS 3110	Introduction to Computer Programming	3
BIOL 3105	General Biology	3
BIOL 1107	General Biology Lab	1
PE	2 hours in skills	2
		<u>18</u>

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2nd Semester	
ENGL 3112	Research and Critical Writing3
HIST 3102	History of the U.S. since 18653
	3 hours from Art, Music or Drama3
SPAN 4102 or 4104	Spanish II4
BIOL 4211	Human Anatomy Physiology4
BIOL 1212	Human Anatomy Physiology Lab1
PE	1 hour in skills1
	<u>19</u>

SOPHOMORE YEAR

1st Semester	
ENGL 3303	English Grammar and Usage3
POSC 3110	American Government & Politics3
TED 1201	Orientation to Education1
PE	12 hours in area of specialization12
	<u>19</u>

2nd Semester	
ENGL 3454	Teaching Composition in Elem & Middle School 3
POSC 3111	American Government & Politics3
MATH 3106	College Geometry and Algebra3
PE	6 hours in area of specialization6
	<u>18</u>

JUNIOR YEAR

1st Semester	
EDPC 3301	Introduction to Educational Psychology3
PE 3414	Special Physical Education3
RED 3340	Developmental Reading in Elementary School3
PE	9 hours in area of specialization9
	<u>18</u>

2nd Semester	
ELED 3307	Multicultural Ed in Elementary Schools3
PE 3303	Measurement in Health and PE3
ELED 3405	Mathematics in the Elementary School3
RED 3441	Diagnostic Teaching of Reading3
HE 3302	Elementary School Health Education3
PE	3 hours in area of specialization3
	<u>18</u>

SENIOR YEAR

1st Semester	
ELED 3306	Language Arts in Elementary School3
ELED 3406	Diagnosis & Remediation in Teaching Math3
ELED 3304	Science in the Elementary School3
PE	9 hours in area of specialization9
	<u>18</u>

2nd Semester	
TED 9498	Student Teaching in All-Levels PE9
ELED 3303	Social Studies in Elementary School3
PE	1 hour in skills1
	<u>13</u>

Physical Education (All-Levels PE and Secondary Certification)

SAMPLE OF POSSIBLE SCHEDULE. Courses may be taken in different order:

FRESHMAN YEAR

1st Semester		Hours
ENGL 3111	Expository English Composition3	
SPCH 3101	Public Speaking (or English 6111).....3	
HIST 3101	History of the U.S. to 18653	

CS 3110	Introduction to Computer Programming3
BIOL 3105	General Biology3
BIOL 1107	General Biology Lab1
PE	2 hours in skills2
	<u>18</u>

2nd Semester	
ENGL 3112	Research and Critical Writing3
HIST 3102	History of the U.S. since 18653
	3 hours from Art, Music or Drama3
	3 hours from Beh Sc, Econ, Hum, Lang3
BIOL 4211	Human Anatomy Physiology4
BIOL 1212	Human Anatomy Physiology Lab1
PE	1 hour in skills1
	<u>18</u>

SOPHOMORE YEAR

ENGL	3 hours from 3200 level courses3
POSC 3110	American Government & Politics3
TED 1201	Orientation to Education1
PE	9 hours in area of specialization9
	3 hours in second area of specialization3
	<u>19</u>

ENGL	3 hours from 3200 level courses3
POSC 3111	American Government & Politics3
MATH 3106	College Geometry and Algebra3
PE	6 hours in area of specialization6
	3 hours in second area of specialization3
	<u>18</u>

JUNIOR YEAR

1st Semester	
EDPC 3301	Introduction to Educational Psychology3
PE 3414	Special Physical Education3
PE	6 hours in area of specialization6
	6 hours in second area of specialization6
	<u>18</u>

2nd Semester	
SCED 3317	Multicultural Ed in Secondary Schools3
SCED 3311	Curriculum Planning in Secondary Schools3
PE	6 hours in area of specialization6
	6 hours in second area of specialization6
	<u>18</u>

SENIOR YEAR

1st Semester	
PE 3304	Teaching PE in Secondary Schools3
PE	6 hours in area of specialization6
	9 hours in second area of specialization9
	<u>18</u>

2nd Semester	
TED 9498	Student Teaching in All-Levels PE9
PE	4 hours in area of specialization4
	<u>13</u>

SUMMER

PE	3 hours in area of specialization3
	6 hours in second area of specialization6
	<u>9</u>

DEGREE/CERTIFICATION IN ART, MUSIC, SPEECH, HEARING & LANGUAGE DISORDERS OR BUSINESS

Those students pursuing a degree and 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 certification will find this information under the College of Nursing and Allied Health. Those seeking a Business degree and certification will find this information under the College of Business. 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 a State certification exit examination.

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:

- Clear admission requirements to the Graduate School
- Consult an advisor in the College of Education to see what General Requirement and Specialization Area courses need to be completed
- Have completed freshman English and Speech with a grade of C or better
- Complete TED 1201
- Pass the Pre-Professional Skills Test (P-PST)
- 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 Specialization Area(s) and Professional Studies
- Apply for certification
- Register for and pass the State certification exit test

There are three areas in which all course requirements must be met: General Requirements, Specialization Area and Professional Studies.

General Requirements (Applied to all certification candidates)

English:	12 hours
Speech:	3 hours
US History:	6 hours
Texas Government:	3 hours
Laboratory Science:	3 hours
Mathematics:	3 hours (college algebra or above)
Computer Science:	3 hours
Orientation:	1 hour

Specialization and Professional Studies Requirements for Elementary Certification

- 18 or 24 hours in an approved Area of Specialization (see list on p. 53)
- 24 hours of Combination Subjects: 6 hours in reading, 3 hours in special education, 3 hours in mathematics methods, 3 hours in music for teachers, 3 hours in health methods, 3 hours of PE methods and 3 hours of art for teachers.
- 30 hours in Professional Studies: 3 hours in multicultural education, 3 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

Specialization and Professional Studies Requirements for Secondary Certification

- 36 hours in an approved Area of Specialization (see list on pp. 54-55), or two areas of 30 hours each, or a composite area of 60 hours
- 29 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 area(s) of specialization, 3 hours in reading, and 9 hours in student teaching.

Specialization and Professional Studies Requirements for PE All-Levels with Elementary Certification

- 36 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
- 24 hours in Professional Studies: 3 hours in multicultural education, 3 hours in educational psychology, 3 hours in special education, 3 hours in curriculum and evaluation, 3 hours in reading, and 9 hours in student teaching

Specialization and Professional Studies Requirements for PE All-Levels with Secondary Certification

- 36 hours in physical education
- 30 hours in an approved secondary Area of Specialization (see list on pp. 54-55)
- 24 hours in Professional Studies: 3 hours in multicultural education, 3 hours in educational psychology, 3 hours in special education, 3 hours in curriculum planning, 3 hours in special methods appropriate to the area(s) of specialization, and 9 hours of student teaching.

Specialization and Professional Studies Requirements for All-Levels Art, Music, Speech, Hearing and Language Disorders (SHLD) Certification

- 48 hours in Area of Specialization (Art, Music or SHLD)
- 24 hours in Professional Studies: 3 hours in multicultural education, 3 hours in educational psychology, 3 hours in special education, 3 hours in reading, 3 hours in methods or curriculum, and 9 hours in student teaching

Endorsements

Endorsements are teaching sub-specializations consisting of 12 semester hours of college work that may be added to a valid Texas certificate. The following endorsement programs are available.

Bilingual Education Endorsement. It may be added to valid provisional 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
- Evidence of a successful student teaching experience in an approved ESL program, or one year of successful classroom teaching experience on a permit in a approved ESL or bilingual education program as verified by the employing school district

Kindergarten Endorsement. It may be added to a valid provisional teacher certificate with elementary or all-level options, provisional special education certificates, or provisional vocational home economics certificates which require a college degree, plus:

- 9 semester hours of Kindergarten courses: EDPC 3401, ECED 3451, 3452 and

- 3 semester hours of kindergarten student teaching, or one year of successful kindergarten teaching experience on a permit in an accredited school, verified by the employing school district, and 3 additional semester hours of kindergarten education.

TRANSFER STUDENTS SEEKING DEGREES IN EDUCATION

Undergraduate transfer students must submit original copies of their transcripts to the Admission and Evaluation Office (Administration Bldg 201) for evaluation, prior to consulting an advisor in the College of Education. Graduate students must contact the Graduate School in Education 901.

OUT OF STATE GRADUATES WITH EXPIRED CERTIFICATES SEEKING TEXAS CERTIFICATION

Out of state teachers whose certificates have expired must go through an approved teacher education program in order to fulfill Texas certification requirements. They will have to meet the standards required of UT El Paso candidates and must bring original copies of their transcripts to the Certification Office, Education 412. A charge of \$15 will be made for evaluating the transcripts which will be credited toward the certification fee when the application for certification is sent to the Texas Education Agency.

Teachers with a valid out of state teaching certificate must contact the Texas Education Agency directly in order to have their certificate evaluated.

Educational Leadership and Counseling

701 Education Building
(915) 747-5300/5302/5355

PROFESSORS EMERITI: William Gerald Barber, James F. Day
PROFESSORS: R. Dunwell, L. Natalicio, C. Walker
ASSOCIATE PROFESSORS: Ainsa, Ball, Brooks, Duran, J. Walker, Wholeben
ASSISTANT PROFESSORS: Hamilton, Lindahl, Morgan

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 (3-1)**
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; field experience required.
- 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 Education of 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 Sociocultural Issues in Special Education (3-1)**
Identification of professional, community, governmental, and political organizations and the socio-cultural issues that influence change in special education; field work required. *Prerequisite:* SPED 3310.
- 3333 Teaching the Exceptional Child (3-0)**
Analysis of school curriculum, curriculum materials, and teaching methods for the exceptional child; includes planning techniques and classroom designs. *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 (3-1)**
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; field experience required.
- 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 Workshop 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.

Educational Research and Statistics (EDRS)

For Undergraduates 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.

See the *Graduate Studies Catalog* for graduate programs and courses.

TEACHER EDUCATION

501 Education Building
(915) 747-5426

CHAIR: James L. Milson

PROFESSOR EMERITUS: James Gordon Mason

ASSOCIATE PROFESSORS EMERITI: Benny Wesley Collins,
John Paul Scarbrough

PROFESSORS: Burmeister, Burns, Dunlap, Ekwall, Hardin, Harris,
Heger, Hernandez, Klingstedt, Milson

ASSOCIATE PROFESSORS: Barker, Edwards, B. Kelly, N. Kelly,
Kies

ASSISTANT PROFESSORS: Bixler-Marquez, Davis, Descamps,
Salinger, Tinaiero

LECTURER: Gamboa

Teacher Education (TED)**1201 Orientation of 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.

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.

3491 Student Teaching in Kindergarten (.5-15)

Minimum of 225 hours of student teaching in a kindergarten plus 8 hours of seminars.

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.

3492 Student Teaching in Special Education (.5-15)

Minimum of 225 hours of student teaching in a special education classroom plus 8 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.

3493 Student Teaching in Bilingual Education (.5-15)

Minimum of 225 hours of student teaching in a bilingual education classroom plus 8 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.

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.

9499 Student Teaching in All-Level 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)**

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 (3-1)

Content, materials, and methods for teaching language arts in the elementary school. Field experience required.

3307 Multicultural Education in the Elementary School (3-0)

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 (3-1)

Content, materials, and methods for teaching mathematics in the elementary school. Field experience required. *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. 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.

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)

Cultural education models, instructional methods, and classroom interaction processes in secondary schools that reflect the cultural composition of the U.S.

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 exercise for applying the approaches in the classroom. Field experience required. May be taken as ENGL 3456 or SCED 3456.

3467 Teaching Secondary School Mathematics (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 Secondary School Science (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 Secondary School Social Studies (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)**3333 Education and the Mexican American (3-0)**

Analysis of the achievement and behavior of the Mexican American in school, to include examination of curricular and organizational approaches designed to overcome group disadvantages.

3430 Principles of Bilingual Education/ESL (3-0)

Philosophies, theories, and history of bilingual education 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)

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)

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 (3-3)

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.

Early Childhood Education (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 (2-2)

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 of developing readiness and beginning skills in reading and writing in cognitive, affective, and psychomotor domains in monolingual and multilingual classrooms. Field experience required.

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)

1101 Activity Course (0-3)

Activity course. Co-educational. May be repeated for credit. Open to all students. *Laboratory Fee:* \$4

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
Volleyball	(life saving)
Swimming I	Fencing
Wrestling	Social dance
Field Hockey	Judo
Gymnastics I	Karate

Tennis
Basic Dance
Soccer
Backpacking

Golf
Self-Defense
Bowling

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.

1208 Ballet for Gymnastics/Rhythmical Gymnastics (0-3)

Dance movements used in gymnastics floor exercise and balance beam; rhythmical gymnastics with or without hand apparatus.

1209 Folk and Ethnic Dance (0-3)

Basic skills and techniques of folk and ethnic dances of the world; their origins, music and costuming.

1210 Social Dance and Square Dance (0-3)

Basic skills and techniques of social and square dance.

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.

3208 Recreation Leadership (3-0)

Philosophy, principles, methods, practical experiences, and professional preparation for leadership in the field of recreation.

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.

4301 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 (3-1)

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.

3317 Creative Dance Technique and Composition (1-2)

Methods of teaching creative dance and dance composition. *Prerequisite:* PE 1211.

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.

3411 Teaching Folk, Social, Square, and Ethnic Dance (1-2)

Practical application of theories of teaching dance, study and selection of materials, curricula, and music.

3412 Dance Production (1-0)

Choreography, lighting, make-up, programming, accompaniment, sound system, costuming, and set design in the production of dance. *Prerequisites:* PE 3316, 3411.

3414 Special Physical Education (2-1)

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 will be provided. *Prerequisite:* Junior standing.

3415 Advanced Athletic Training (3-0)

Development of competence in the uses of common techniques for both the prevention and rehabilitation of athletic injuries. Students will demonstrate an understanding of bone and soft tissue injury management and an understanding of 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.

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. *Prerequisite:* 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. See the *Graduate Studies Catalog* for graduate programs and courses.



Civil Engineering
Computer Science
Electrical Engineering
Mechanical and
Industrial Engineering
Metallurgical Engineering

Robert B. Grieves, Dean
Walter W. Fisher, Assistant Dean
Joseph H. Pierluissi, 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 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 computer science program is relatively new and will be reviewed for accreditation in the near future. The breadth of computer technology is presently covered by the computer science program options in the areas of computation and systems. A computer engineering degree option is also available in the Department of Electrical Engineering.

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 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 Students

A student may transfer from another ABET accredited program an amount of course work up to 66 credits in which grades of "C" or better have been obtained. This is the maximum amount of transfer credit which can be applied toward an Engineering degree at UT El Paso except under exceptional circumstances.

Credit for Upper Division courses will be given only on the basis of a departmental competency examination. Transfer students may be required to take specified courses which the department feels they must have in order to establish the quality of their degree. The acceptance of credits from programs not accredited by ABET will be more restrictive than the above.

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 in 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 2.00 GPA for the lower division course 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; all grades earned in the course will remain on the student's record and *will be used in the student's GPA calculation*. 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 earned 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

Some engineering courses may have restrictions on repeat enrollments.

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. Three routes are available for students. 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.

For more information concerning these programs, please refer to the *Graduate Studies Catalog* or write to the Assistant Dean of Engineering for Graduate Affairs.

**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 it offers an opportunity for specialization through junior and senior electives. These electives in (1) Environment Studies, (2) Structures-Design and (3) Geotechnical Engineering permit more in-depth study.

FRESHMAN YEAR

	Hours
1st Semester	
CE 3103 Introduction to Civil Engineering.....	3
CHEM 3105+ General Chemistry.....	3
ENGL 3111+ Freshman English.....	3
CE 3105 Graphical Fundamentals in Engineering Design.....	3
MATH 4111+ Calculus.....	4
	16

2nd Semester	
ENGL 3112+ Freshman English.....	3
CS 4120+ Computer Programming for Scientists & Engineers.....	4
MATH 3212+ Calculus.....	3
HIST 3101 or 3103.....	3
CHEM 3106 ¹ + General Chemistry.....	3
CHEM 2106 ¹ + General Chemistry Lab.....	2
	18

SOPHOMORE YEAR

1st Semester	
CE 3215+ Engineering Mechanics I.....	3
HIST 3102 or 3104.....	3
MATH 3217+ Calculus.....	3
PHYS 4211 Fields and Waves.....	4
POSC 3110 American Government.....	3
	16

2nd Semester	
ME 3238+ Engineering Mechanics II.....	3
CE 3234+ Mechanics of Materials I.....	3
ME 3375 Thermodynamics I.....	3
MATH 3326+ Differential Equations.....	3
POSC 3111 American Government.....	3
	15

JUNIOR YEAR

1st Semester	
CE 3313 Engineering Measurements.....	3
CE 3343 Structural Analysis I.....	3
MET 3203 ² Materials Selection.....	3
GEOL 3321 Geology for Engineers.....	3
CE 1234 Materials Laboratory.....	1
Electives ³	3
	16

2nd Semester	
IE 3326 Engineering Economy.....	3
ME 4354 Fluid Mechanics.....	4
CE 4448 Soil Mechanics.....	4
CE 1236 Materials Laboratory.....	1
CE 3440 Transportation Engineering.....	3
Electives ³	3
	18

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SENIOR YEAR

1st Semester	
CE 3435	Structural Design I.....3
CE 3441	Water Treatment.....3
EE 4377	Basic Electrical Engineering.....4
CE 1495	Senior Professional Orientation.....1
	Electives ³6
	17

2nd Semester	
CE 4456	Hydraulic Engineering.....4
CE 3442	Waste Treatment.....3
CE 1453	Water & Waste Laboratory.....1
CE 3461	Structural Design II.....3
	Electives ³6
	17
Total Semester Credit Hours.....133	

+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 consulting 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 leading to two options is provided through numerous upper division electives.

The Computation option builds an understanding of how software is designed and how operating systems and computers are constructed, and acquaints the student with the programming languages in use in the industrial sector.

The Computer Systems option places emphasis on the engineering of software systems. It requires of the student a good understanding of hardware, software and their interface.

FRESHMAN YEAR

1st Semester		Hours
CS 4101+	Introduction to Computer Science.....4	
ENGL 3111+	Freshman English.....3	
MATH 4111+	Analytic Geometry and Calculus.....4	
POSC 3110	American Government.....3	
	Free elective.....3	
	17	

2nd Semester	
MATH 3212+	Analytic Geometry and Calculus.....3
PHYS 4210+	Mechanics and Thermal Physics.....4
PHYS 1120+	Physics Laboratory.....1
ENGL 3112+	Freshman English.....3
HIST 3101	American History.....3
	Free elective.....3
	17

SOPHOMORE YEAR

1st Semester		Hours
CS 4201+	Programming and Algorithms.....4	
MATH 3200+	Computer Mathematics.....3	
MATH 3217+	Analytic Geometry and Calculus.....3	
PHYS 4211+	Fields and Waves.....4	
PHYS 1121+	Physics Laboratory.....1	
	Humanities/Social Science elective.....3	
	18	

2nd Semester	
CS 3202+	Data Structures.....3
CS 3220+	Introduction to Computer Architecture.....3
MATH 3323	Linear Algebra.....3
POSC 3111	American Government.....3
HIST 3102	American History.....3
	15

JUNIOR YEAR

1st Semester	
CS 4332	Assembler Language Programming.....4
CS 3330	Problem Oriented Programming Language.....3
MATH 3330	Probability.....3
	Technical elective.....3
	Humanities/Social Science Elective.....3
	16

2nd Semester	
CS 3360	Design and Implementation of Programming Language.....3
CS 3335	Systems Programming.....3
MATH 3326	Differential Equations.....3
EE 4360	Computer Organization and Design.....4
	Technical Elective.....3
	16

SENIOR YEAR

1st Semester		Hours
CS 3410	Software Engineering I.....3	
CE 1495	Senior Professional Orientation.....1	
MATH 3429	Numerical Analysis.....3	
EE 3473	Minicomputers.....3	
	Technical elective.....3	
	Technical elective.....3	
	16	

2nd Semester	
CS 3411	Software Engineering II.....3
	Technical elective.....3
	Technical elective.....3
	Technical elective.....3
	Humanities/Social Science elective.....3
	15

Total semester credit hours 130

For graduation a minimum GPA of 2.00 is required in the upper division Computer Science courses.

+Grade of C or better is required in these courses

Technical Electives. The seven technical electives may be chosen as follows:

In the Computation option choose five from:

- MATH 3325 Introduction to Algebra
- MATH 3341 Introduction to Analysis
- MATH 3353 Mathematical Programming
- MATH 3480 Statistics
- CS 3350 Automata, Computability and Formal Languages
- CS 3370 Computer Graphics
- CS 3420 Artificial Intelligence
- CS 3442 Data Base Management
- CS 3452 Translation of Programming Languages
- CS 3450 Systems Simulation

In the Systems option choose five from:

- MATH 3480 Statistics
- CS 3350 Automata, Computability and Formal Languages
- CS 3450 Systems Simulation
- CS 3452 Translation of Programming Languages
- CS 3475 Theory of Operating Systems
- EE 3376 Minicomputer Instrumentation
- EE 4377 Basic Electrical Engineering
- EE 3442 Digital Systems Design II
- EE 3474 Operating Systems Design
- EE 3478 Microprocessors and Interfacing

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 division. 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 for specialization in communications, control, electronics and electrical power systems.

General Option

FRESHMAN YEAR

1st Semester	Hours
EE 3105+ Intro to Electrical Engineering.....	3
ENGL 3111+ Freshman English	3
CHEM 3105+ General Chemistry	3
MATH 4111+ Calculus.....	4
Electives Humanities & Social Science	3
	<u>16</u>

2nd Semester

ENGL 3112+ Freshman English	3
CHEM 3106+ General Chemistry	3
MATH 3212+ Calculus.....	3
HIST 3101 or 3103 American History	3
CS 4120+ Computer Programming for Scientists & Engineers.....	4
	<u>16</u>

SOPHOMORE YEAR

1st Semester	Hours
MATH 3217+ Analytical Geometry and Calculus.....	3
HIST 3102 or 3104 American History	3
POSC 3110 American Government	3
EE 1205+ Measurements Lab	1
PHYS 4210+ Mechanics and Thermodynamics.....	4
	<u>14</u>

Total Semester Credit Hours131

+ 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+ Intro. to Electrical Engineering	3
MATH 4111+ Calculus.....	4
ENGL 3111+ Freshman English	3
Elective Humanities and Social Science.....	3
	<u>16</u>

The remaining technical electives must be taken from a list approved by the Computer Science Department.

Free Electives are defined as follows: Any non-skills related course which is not a prerequisite for either a required or an already-taken course, and is recommended for approval by the student's advisor.

Humanities and/or Social Science Electives must be from the list approved by the Office of the Dean of Engineering.

2nd Semester

EE 3251+ Networks I.....	3
EE 1251+ Basic EE Lab	1
MATH 3326+ Differential Equations	3
POSC 3111 American Government	3
PHYS 4211+ Electricity and Magnetism	4
ME 3239+ Particle Dynamics.....	3
	<u>17</u>

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
	<u>16</u>

2nd Semester

EE 2310 Elec. Eng. Lab I.....	2
EE 3340 Electronics II.....	3
Approved Elective ¹	3
EE 3385 Energy Conversion	3
EE 3347 Electromagnetic Energy Trans. & Rad.....	3
EE 3329 Electronic Materials.....	3
	<u>17</u>

SENIOR YEAR

Two Semesters

EE 1495 Senior Professional Orientation.....	1
EE 2411 Elect. Eng. Lab II	2
EE 2412 Senior Project Lab.....	2
EE 3441 Communication Systems	3
EE 3450 Phys. Elect	3
EE 3464 Systems & Controls.....	3
IE 3326 Engineering Economy	3
Approved Electives ¹	18
	<u>35</u>

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SOPHOMORE YEAR

1st Semester	
PHYS 4210+ Mechanics and Thermodynamics.....	4
MATH 3217+ Analytic Geometry and Calculus.....	3
POSC 3111 American Government.....	3
HIST 3102 or 3104 American History.....	3
CS 4120+ Computer Programming for Scientists & Engineers.....	4
	<u>17</u>

2nd Semester	
PHYS 4211+ Electricity and Magnetism.....	4
EE 3251+ Networks I.....	3
MATH 3326+ Differential Equations.....	3
Approved Elective ¹	3
EE 1251+ Basic EE Lab.....	1
MATH 3323+ Linear Algebra.....	3
	<u>17</u>

JUNIOR YEAR

1st Semester	
EE 1309 Computation Lab.....	1
EE 3376 Microcomputer Instrumentation.....	3
EE 1376 Microcomputer Instrumentation Lab.....	1
PHYS 3325 Intro to Modern Physics.....	3
EE 3321 Electromagnetic Field Theory.....	3
EE 3352 Networks II.....	3
EE 3339 Electronics I.....	3
	<u>17</u>

Total Semester Credit Hours134

+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.

FRESHMAN YEAR

1st Semester		Hours
CE 3105 Graphical Fundamentals.....	3	
IE 3101 Intro. to IE.....	3	
ENGL 3111+ English Composition.....	3	
MATH 4111+ Calculus.....	4	
HIST 3101 Hist. 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 & Critical Writing.....	3
MATH 3212+ Calculus.....	3
CHEM 3105 General Chemistry.....	3
	<u>17</u>

SOPHOMORE YEAR

1st Semester	
CE 3215+ Engineering Mechanics I.....	3
PHYS 4211+ Fields & Waves.....	3
MATH 3217+ Calculus.....	3

2nd Semester	
EE 3329 Electronic Materials.....	3
EE 3369 Digital Sys. Design I.....	3
EE 2310 Elect. Eng. Lab I.....	2
EE 3340 Electronics II.....	3
EE 3473 Minicomputers.....	3
EE 3484 Probabilistic Methods.....	3
	<u>17</u>

SENIOR YEAR

1st Semester	
EE 1495 Senior Professional Orientation.....	1
EE 3450 Physical Electronics.....	3
EE 3478 Microprocessors and Interfacing.....	3
EE 1478 Microprocessors and Interfacing Lab.....	1
EE 3474 Operating Sys. Design.....	3

2nd Semester	
IE 3326 Engineering Economy.....	3
EE 3342 Digital Sys. Design II.....	3
EE 1442 Digital Sys. Design Lab.....	1
EE 2411 Elect. Eng. Lab. II.....	2
EE 2412 Senior Project Lab.....	2
Approved Electives ¹	12
	<u>34</u>

Science Elective, GEOL 3101, 1101, BIOL 3105, 1107, CHEM 3106, 2106.....	4(5)
HIST 3102 Hist. of U.S. since 1865.....	3
	<u>17(18)</u>

2nd Semester	
ME 3238+ Engineering Mechanics II.....	3
IE 3216+ Ergonomics.....	3
IE 3236+ Manufacturing Processes.....	3
CE 3234+ Mechanics of Materials.....	3
MATH 3326+ Differential Equations.....	3
POSC 3110 American Government & Politics.....	3
	<u>18</u>

JUNIOR YEAR

1st Semester	
ECON 3204 Principles of Econ.....	3
ME 3375+ Thermodynamics I.....	3
IE 3377 Methods Engineering.....	3
MATH 3323 Linear Algebra.....	3
ACCT 3309 Survey of Acct.....	3
POSC 3111 American Govt. & Politics.....	3
	<u>18</u>

2nd Semester	
IE 3389 Deterministic Operations Research.....	3
EE 3484 Probabilistic Methods.....	3
EE 4377 Basic EE.....	4
ME 4354 Fluid Mechanics.....	4
IE 3326 Engineering Economy.....	3
	<u>17</u>

IE 3432 Safety Engineering.....	3
IE 1495 Senior Prof. Orientation.....	1
Physics Elective (PHYS 3320, 3323, 3325, 3428, 3448, 3470).....	3
Humanities Elective.....	3
	<u>16</u>

SENIOR YEAR

1st Semester	
IE 3492 Probabilistic Operations Ressearch.....	3
IE 3491 Production and Inventory Control.....	3

2nd Semester	
IE 3484 Industrial Layout.....	3
IE 3485 Statistical Quality Control and Reliability.....	3
IE 4466 Senior Design.....	4
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.

Approved IE Technical Electives: ME 3305, 3376, 3411, 3468, 3491; CE 3313, 4390, 3438; MET 3309, EE 3384, 3473, CS (any 33XX or 34XX course), MATH 34XX, MGMT 3315, 3480, BLAW 3401, 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	Hours
CE 3105 Graphical Fundamentals.....	3
ME 3101+ Intro. to Mechanical Engineering.....	3
ENGL 3111+ English Composition.....	3
MATH 4111+ Calculus.....	4
POSC 3110 American Gov't and Politics of HIST 3101 or 3103 Hist. of U.S.	3
	<u>16</u>

POSC 3111 American Gov't and Politics or HIST 3102 or 3104 Hist. of U.S.	3
Humanities Elective.....	3
	<u>18</u>

2nd Semester	
CS 4120+ Computer Programming for Scientists & Engineers.....	4
PHYS 4210+ Mech/Thermal Physics.....	4
ENGL 3112+ Research & Critical Writing.....	3
MATH 3112+ Calculus.....	3
CHEM 3105 General Chemistry.....	3
	<u>17</u>

JUNIOR YEAR

1st Semester	
PHYS 4211 Fields & Waves.....	4
CE 3234+ Mechanics of Materials I.....	3
ME 3363 Kinematics of Mechanisms.....	3
ME 3375+ Thermodynamics I.....	3
POSC 3111 American Gov't & Politics or HIST 3102 or 3104 History of U.S.	3
	<u>16</u>

2nd Semester	
EE 4377 Basic Electrical Engr.....	4
ME 3367 Dynamics of Machinery.....	3
ME 3305 Basic Measurements and Instrumentation.....	3
ME 4354 Fluid Mechanics.....	4
ME 3376 Thermodynamics II.....	3
	<u>17</u>

SOPHOMORE YEAR

1st Semester	
CE 3215+ Engineering Mechanics I.....	3
MATH 3217+ Calculus.....	3
Science Elective, GEOL 3101, 1101, BIOL 3105, 1107, CHEM 3106, 2106.....	4(5)
MET 3203 Materials Selection.....	3
POSC 3110 American Gov't and Politics or HIST 3101 or 3103 Hist. of U.S.	3
	<u>16(17)</u>

SENIOR YEAR

1st Semester	
ME 4451 Heat Transfer.....	4
ME 3464 Senior Analysis.....	3
IE 3326 Engineering Economy.....	3
Math Elective, MATH 3335 or 3436.....	3
Humanities Elective.....	3
ME 1495 Senior Prof. Orientation.....	1
	<u>17</u>

2nd Semester	
ME 3238+ Engineering Mechanics II.....	3
IE 3236 Manufacturing Processes.....	3
ME 3241+ Engineering Analysis.....	3
MATH 3326+ Differential Equations.....	3

2nd Semester	
Physics Elective, PHYS 3323, 3351, 3325 or 3448.....	3
ME 4466 Senior-Design.....	4
Approved Electives ¹	6
ME 4465 Dynamic Response.....	4
	<u>17</u>

Total Semester Credit Hours.....134(135)

+Grade of C or better required in these courses.

¹Approved electives are: ME 3411, 3412, 3442, 3455, 3456, 3468, 3471, 3487, 3491; 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. A Chemical Process option is available for students primarily interested in the chemical industries. Courses related to advanced materials topics are also available.

FRESHMAN YEAR

1st Semester	Hours
CHEM 3105+ General Chemistry	3
ENGL 3111+ Freshman English	3
MATH 4111+ Calculus	4
MET 3101+ Intro to Metallurgy	3
CE 3105 Graphical Fundamentals	3
	<u>16</u>

2nd Semester	
CHEM 3106+ General Chemistry	3
CHEM 2106+ Chemistry Lab	2
ENGL 3112+ Freshman English	3
MATH 3212+ Calculus	3
MET 3102+ Met. Engr. Fundamentals	3
CS 4120 Computer Programming for Scientists & Engineers	4
	<u>18</u>

SOPHOMORE YEAR

1st Semester	
CE 3205+ Chem & Met Proc Analysis	3
MET 3203+ Materials Selection	3
MATH 3217+ Calculus	3
PHYS 4210 Mech & Thermal Physics	4
CE 3215+ Mechanics I	3
	<u>16</u>

2nd Semester	
MET 3206+ Transport Processes	3
MET 3208+ Applied Thermodynamics	3
MATH 3326+ Differential Equations	3
PHYS 4211 Fields & Waves	4
POSC 3110 American Gov't & Politics	3
MET 1201+ Materials Selection Lab	1
	<u>17</u>

Total Semester Credit Hours134

+Grade of C or better required in these courses.

¹Chemical Process option students should substitute Organic Chemistry I and II for MET 4306 and 4307, and take ME 4451 and 4354 as electives.

²Students interested in Physical Metallurgy take MET 3309 or 3314; those interested in Extractive Metallurgy take MET 3315. All three courses can be taken as electives.

³Math elective: ME 3241, MATH 3280, 3323, 3335 or a Math course approved by advisor.

⁴Metallurgy electives: MET 3309, 3314, 3315, 3403, 3409, 3412, 3413, 3416, 3420, 4405, 4415, 4419.

⁵Humanities/Social Science elective: Check current list of approved courses.

JUNIOR YEAR

1st Semester	
MET 3302+ Mineral Engineering	3
MET 4306+ ¹ Physical Metallurgy I	4
CHEM 3351 Physical Chemistry	3
CE 3234+ Mechanics of Materials	3
HIST 3101/3103 Hist of U.S.	3
	<u>16</u>

2nd Semester	
MET 4304+ Process Metallurgy I	4
MET 4307+ ¹ Physical Metallurgy II	4
MET 3309+, 3314+ or 3315+ ²	3
POSC 3111 Amer Govt & Politics	3
HIST 3102/3104 Hist of U.S.	3
	<u>17</u>

SENIOR YEAR

1st Semester	
MET 4305 Process Metallurgy II	4
MET 1495 Senior Prof Orientation	1
MET 4417 Instr. & Control	4
Math Elective ³	3
Metallurgy Elective ^{1, 4}	3
Humanities/Soc Sci Elective ⁵	3
	<u>18</u>

2nd Semester	
MET 4418 Metallurgical Design	4
IE 3226 Engr. Economy	3
Metallurgy Electives ⁴	6
Humanities/Soc Sci Elective ⁵	3
	<u>16</u>

Engineering

For Undergraduates

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 depart-

mental 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 Co-op Coordinator, department chairman and employer.

Civil Engineering

201B Engineering Science Complex
(915) 747-5464

CHAIRMAN: Wayne F. Echelberger, Jr.

PROFESSOR EMERITUS: Ralph M. Coleman

PROFESSORS: Applegate, Bartel, Das, Echelberger, Grieves, Hassler

ASSOCIATE PROFESSORS: Oey, Rozendal, Tarquin, Young

ASSISTANT PROFESSOR: Picornell-Darder, Roschke

Civil Engineering (CE)

For Undergraduates

General prerequisite: All upper division undergraduate courses (X3XX, X4XX) in Civil Engineering, plus 1234 and 1236, 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:* Mathematics 4111.

3234 Mechanics of Materials I (3-0)

Study of stress, strain, torsion, shear, moment, flexure, combined stresses and column action. *Prerequisite:* CE 3215.

1234 Mechanics of Materials Laboratory (0-3)

Laboratory practices in the manufacture and testing of bituminous materials, manufactured base materials, and bituminous, cement and lime stabilized base materials. Instrumentation and techniques of measurement in-place materials for quality control and determination of stresses and strains under loads will be included. Lab Fee \$8. *Prerequisite:* CE 3234.

1236 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.

1238 Engineering Transportation or Urban Surveys (0-2)

Field surveys for the purpose of collecting data for transportation or urban engineering projects. Problem to be determined by the senior or graduate student principal investigator with the approval of the chairperson of the department. *Prerequisites:* Sophomore standing and consent of the chairperson of the department. May be repeated once for credit.

3245 Urban Systems Engineering (2-1)

Fundamentals of pollution control and transportation planning from an engineering point of view will be presented. Extensive computer simulation studies of the impact of engineering decisions regarding air pollution control, water pollution control, and transportation systems on dynamic communities will be conducted. *Prerequisite:* Permission of instructor.

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.

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.

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.

2326 Project Impact Analysis (1-2)

A study of the basic analysis and reporting procedures for assessing the impact of proposed public works on the community and its environment. *Prerequisite:* Permission of instructor.

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. Computer User Charge: \$10.

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, gasses, 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 1236.

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.

3439 Design of Transportation Systems (3-0)

Geometric design of public transportation facilities, highways, and airports with consideration of the historical, political, social, and economic aspects of the systems in an urban environment. *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 (3-2)

Principles of water supply and the application of those to the design and operation of municipal and industrial water supplies. *Prerequisites:* CHEM 3105, IE 3326, ME 4353.

3442 Waste-Water Engineering (3-2)

Principles of waste-water collection, treatment and disposal and their application to the design and operation of municipal and industrial waste-water systems. *Prerequisites:* CHEM 3105, IE 3326, and ME 4354.

3443 Surface and Subsurface Drainage Design (3-0)

Hydraulic and hydrologic engineering design aspects of culverts, outlet works, energy dissipators, storm and tile drainage systems, infiltration galleries, small dams, impoundments, spillways, straight-gravity, arch, and earth-fill dams. *Prerequisite:* CE 4456 or approval of the instructor.

3444 Design and Evaluation of Wastewater Treatment Systems (3-0)

Physical, chemical and biological treatment processes will be reviewed. The CAPDER computer program will be used for design and evaluation of synthesized treatment systems. *Prerequisite:* CE 3442.

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, ME 4354, GEOL 3321.

3449 Foundation Engineering (3-0)

Subsoil exploration spread footings, mat foundations, retaining wall, sheet pile structures, braced cuts, pile foundations, caissons. *Prerequisite:* CE 4448.

3450 Engineering Hydrology (3-0)

Study of the hydrologic cycle, precipitation, flood frequency, storm characteristics, net rain, surface drainage, and flood runoff. *Prerequisites:* Senior standing and approval of instructor.

3451 Public Health Engineering (3-0)

Principles of public health and the application of engineering methods to public health. *Prerequisite:* Senior standing in engineering or science.

1453 Water and Waste Laboratory (0-3)

Laboratory analysis of water and wastes. *Prerequisite:* 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:* ME 4354. Laboratory Fee: \$8. Computer User Charge: \$10.

4460 Structural Analysis II (3-3)

Analysis of statically indeterminate structures including continuous beams and frames. *Prerequisite:* CE 3343. Laboratory Fee: \$8. Computer User Charge: \$10.

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. Laboratory Fee: \$8. Computer User Charge: \$10.

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.

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

VISITING PROFESSOR: Challman

ASSOCIATE PROFESSOR: Patterson

ASSISTANT PROFESSORS: Bernat, Gelfond, Przymusinska, Starner

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 3106 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, program complexity, testing and software reliability. Organizing and managing software system development including milestones, estimating, teams, walk-throughs and documentation. *Prerequisite:* CS 3335.

3411 Software Engineering (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.

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, and SLAM. *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. May be repeated to a maximum of six credit hours. *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.

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 (3-0)

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

PROFESSOR EMERITUS: Clyde R. Nichols

PROFESSORS: Austin, Gibson, McDonald, Pierluissi, Riter, Schroder, Smith

ASSOCIATE PROFESSORS: Liu, Manoli, Singh, Williams

ASSISTANT PROFESSORS: Alafodimos, Grande-Moran, Hippenstiel, Izquierdo, 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: \$5.

1251 Basic Electrical Engineering Laboratory (1-2)

Introduction to oscilloscopes, oscillators and function generators, transient RLC network experiments and diodes, fundamental laboratory procedures, laboratory manual preparation. *Prerequisite:* EE 1205 concurrently with EE 3251. Laboratory Fee: \$5.

3251 Networks I (3-0)

Theory and analysis of electrical networks including basic fields and circuits concepts, Kirchoff's laws, mesh and nodal analysis, classical and Laplace transform solutions of network equations, and an introduction to the sinusoidal steady state. *Prerequisites:* MATH 3326 or concurrently and CS 4120.

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. Laboratory Fee: \$2.

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: \$4.

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.

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. *Prerequisites:* EE 3251 and MATH 3326.

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, micro-processor architecture and programming, and general computer organization. Laboratory exercises in digital logic and practical applications of micro-processors. Not intended for EE majors. *Prerequisite:* CS 4120 or equivalent or permission of the instructor.

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: \$5.

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 (3-0)

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. *Prerequisite:* EE 3352.

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: \$4.

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. Laboratory Fee: \$5.

3450 Solid-State Physical Electronics (3-0)

Structure of the solid state, quantum theory, statistical electronics, band theory of solids, semiconductor electronics, photo conductivity, applications in p-n junctions, FET, Gunn effect, thermoelectric phenomena. *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:* EE 3352 and 3484.

1471-3471 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. Laboratory Fee: \$5.

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.

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.

3483 Digital Signal Processing (3-0)

Introduction to discrete systems, signals and signal processing. Topics include digital filter design, 2-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.

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.

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: Robert L. Reid

PROFESSORS: Dowdy, Edwards, Levosky, McLean, Reid, Whitacre

ASSOCIATE PROFESSORS: Bhaduri, Craver, Herrera, Johnson

ASSISTANT PROFESSORS: Christiansen, Hawkins, Hu, Swift

Mechanical Engineering (ME)

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. No credit for engineering degree.

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 3212.

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 3217.

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 3120 and MATH 3326 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 3326, ME 3238, and CE 3234. Laboratory Fee: \$4.

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:* ME 3375, MATH 3326. Laboratory Fee: \$4.

3363 Kinematics of Mechanisms (2-3)

Analysis of displacement, velocity, and acceleration in mechanisms; technology and design of gears, gear trains, cams, linkages. *Prerequisites:* ME 3238 and 3241.

3367 Dynamics of Machinery (3-0)

Forces in machine members, balance of machinery; critical speeds; three dimensional analysis; gyroscopic forces. *Prerequisite:* ME 3363.

3375 Thermodynamics I (3-0)

Principles of thermodynamics of single and multi-phase systems of pure substances. *Prerequisites:* MATH 3212, CHEM 3105, PHYS 4210.

3376 Thermodynamics II (3-0)

Continuation of ME 3375. Application of principles of cycles and reactive systems; energy relationships and equilibrium requirements. *Prerequisite:* ME 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. *Prerequisite:* Senior standing or 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:* ME 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 3326.

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:* ME 3241, 3305, and 4354. Laboratory Fee: \$4.

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:* ME 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 3326 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, ME 3241 and 3305.

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.

4465 Dynamic Response (3-3)

Fundamentals of vibration theory and system response. Single and multiple degrees of freedom, damping, isolation. *Prerequisites:* ME 3305 and 3367. Laboratory Fee: \$4.

4466 Senior Design (2-6)

Conceptual, preliminary and final design solutions to problems furnished by industry, handled on team basis. *Prerequisites:* ME 3464 and 4451.

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.

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:* ME 4354 and 3376 or permission of instructor.

3491 Noise Control (3-0)

Basic concepts of noise and sound, noise criteria, regulations and standards, measurement of noise, methods of control, community noise. *Prerequisite:* Senior standing or 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.

3236 Manufacturing Processes (2-3)

Theory and practice of metal cutting, finishing, product measurement and inspection, shop demonstrations and visits to area factories.

3326 Engineering Economy (3-0)

Application of economics to engineering and industrial problems which require a knowledge of engineering for their solution. *Prerequisite:* MATH 3217.

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 3216.

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 PER/CPM, project scheduling and control, linear programming, and queuing theory. Open only to non-BSIE students.

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.

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 queueing 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.

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

CHAIRMAN: Stephen W. Stafford

PROFESSORS EMERITI: Lonnie L. Abernethy, Joseph C. Rintelen, Jr.

PROFESSOR: Guard

ASSOCIATE PROFESSORS: Bronson, Fisher, Stafford, 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.

1203 Materials Selection Laboratory (0-3)

The laboratory serves to introduce the student to experimental tools and techniques employed in the characterization and study of materials. *Prerequisite:* MET 3203. Laboratory Fee: \$6.

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 momentum, heat and mass transfer with application to metallurgical processes. *Prerequisites:* MET 3102 and MATH 3212.

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

3302 Mineral Engineering (3-0)

Principles and practice of comminution, classification, separation/concentration, dewatering and tailings disposal in the treatment of metal-bearing ores, recycled waste and secondary materials. *Prerequisite:* MET 3206 or permission of the instructor.

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.

3310 Thermodynamics of Solids (3-0)

Application of the principles of statistical and classical thermodynamics to solids. *Prerequisite:* MATH 3212.

3314 Advanced Materials Concepts (3-0)

Relationship between structure and properties of engineering alloys. Alloy systems covered include steels, stainless steels, aluminum titanium and superalloys. Processing history, microstructure and properties of each alloy system illustrated by case studies. Composites and other advanced materials will be studied. *Prerequisite:* MET 4306 or concurrently or permission of the instructor.

3315 Metallurgical Process Fundamentals (3-0)

Introduction to aqueous solutions, electrochemistry, surface phenomenon, kinetics and radiochemistry as they apply to metallurgical processes. *Prerequisite:* MET 3208. May be taught in alternate years.

4304 Process Metallurgy I (3-3)

Basic scientific and engineering principles involved in the production of ferrous metals from ores and concentrates or other raw materials. Topics include refractories, slags, furnace design, blast furnace operation, steelmaking practice and secondary steel operation. *Prerequisites:* MET 3205, 3206, 3208 or CHEM 3351. Laboratory Fee: \$6.

4305 Process Metallurgy II (3-3)

Scientific and engineering principles and plant practice involved in the extraction and production of non-ferrous metals will be covered. Emphasis is placed on the pyro-, hydro-, and electro-metallurgical unit operations used to produce aluminum, copper, lead, zinc, gold and uranium. Other non-ferrous metals are discussed to a limited extent. *Prerequisite:* MET 4304 or permission of instructor. 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 crystal structure, the metallic bond, solid solutions, diffraction, and phase analysis. *Prerequisite:* MET 3203 and 3206. Laboratory Fee: \$6.

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 dislocation theory, annealing, nucleation and growth, diffusion, solidification, and austenitic decomposition transformations. *Prerequisite:* MET 4306 or permission of instructor. Laboratory Fee: \$6.

3404 Electrometallurgy (3-0)

The principles of electrochemistry are applied to electrometallurgy. Topics covered include electrowinning, electrorefining, electroplating, anodizing, electropolishing and electroless plating. *Prerequisites:* MET 3208, 3315 or permission of instructor. May be taught in alternate years.

4405 Materials Fabrication (3-3)

A study of the most common manufacturing and fabrication processes used in industry. Topics include forging, stamping, casting, machining, rolling, roll forming, extrusion, wire drawing and welding. *Prerequisites:* MET 3203 and senior standing. May be taught in alternate years.

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.

3412 Microscopy (2-3)

An introduction to electron microscopy and the scanning electron microscope. The discussion and interpretation of results will be stressed. *Prerequisite:* MET 4307 or permission of instructor. Laboratory Fee: \$6.

3413 X-Ray (2-3)

An introduction to x-ray diffraction, fluorescence analysis and other x-ray techniques with emphasis on interpretation of results. *Prerequisite:* MET 4307 or permission of instructor. Laboratory Fee: \$6.

4415 Mechanical Metallurgy (3-3)

A study of elastic and plastic deformation of metals, mechanical testing, the fundamentals of metal forming and related subjects. *Prerequisites:* MET 3203 and CE 3234. May be taught in alternate years. Laboratory Fee: \$6.

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.

4420 Metallurgy of the Less Common Metals (3-0)

A continued study of the extraction, refining and production of non-ferrous metals. Emphasis will be placed on the unusual methods used to produce metals such as magnesium, titanium, zirconium, tantalum, tungsten, chromium, manganese, molybdenum and the rare earths. *Prerequisite:* MET 4305. May be taught in alternate years.

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.

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:* 4304, 4305, 4306, 4307 and IE 3326 or concurrently.

4419 Foundry Engineering (3-3)

Basic concepts of foundry engineering including furnace types, pattern making, molds and molding techniques, gating and risering, part finishing and testing, metal-sand reactions and alternatives to casting. *Prerequisites:* MET 3203, 3205, 3206 and Junior standing in Metallurgical Engineering. May be taught in alternate years.

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.

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.



Art
Chicano Studies
Communication
Criminal Justice
Drama
English
History
Latin American Studies
Linguistics
Military Science/Aerospace Studies
Modern Languages
Music
Philosophy
Political Science
Psychology
Religion
Social Work
Sociology and Anthropology

James V. Devine, Dean
Philip J. Gallagher, Assistant Dean
Kathleen Staudt, Assistant Dean
Ray Small, Dean Emeritus

Liberal Arts Building 350
(915) 747-5666

The College of **LIBERAL ARTS**

The College of Liberal Arts, the largest of the six undergraduate colleges, offers the following programs:

Degrees and Majors

BACHELOR OF ARTS

The BA degree is offered in the following major fields: Anthropology, Art, Broadcasting, Chicano Studies, Drama, English, French, German, History, Journalism, Latin American Studies, Linguistics, Music, Philosophy, Political Science, Psychology, Sociology, Spanish, Speech; also Accounting, Biology, Business, 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 125 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 (62-65 hours)

- 9-12 Communication Skills; ENGL 3111, 3112 and SPCH 3101; or ENGL 6111 and 3112; or ESOL 3111, 3112, 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.
- 6 Western Cultural Heritage; to be selected from any combination of ARTH 3105-06, DRAM 3357-58, ENGL 3215-16, HIST 3201-02, PHIL 3220-21, POSC 3334-35.
- 3 Mathematics/Statistics; any course offered by the Department of Mathematical Sciences (*except* MATH 3105, 3121, 3302, 3303, and 3304); or PSYC 3103; or SOCI 3212.
- 8 Science; to be selected from BIOL 3105-1107, 3106-1108; CHEM 4107, 4108; GEOG 3101-1101, 3102-1102, 3106; or PHYS 4103, 4104, 3107, 3108. (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 (3320, 3307, 3357, 3454), Psychology or Sociology.
- 6 Fine Arts; select one three-hour course from each of two of the following disciplines: Art, Drama or Music.
- 3 Literature; to be selected from advanced (300-400) level literature courses offered by the English Department or the Modern Languages 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 urged 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 hours)

Complete a major prescribed by an academic department in the College of Liberal Arts (or Science or Business) 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, Criminal Justice, Drama, English, German, History, Linguistics, Music, Philosophy, Political Science, Psychology, Sociology, Spanish, and Speech. 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: 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.

Minors may also be selected from the following approved disciplines in other Colleges:

Business Minor—BLAW 3301; ACCT 3309; MKT 3300, MGMT 3300; 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.

Computer Science Minor—CS 4100, 4200, 3210, 3220, 3230, 3310; MATH 4111, 3200.

Elementary Education Minor—EDPC 3302; ELED 3302, 3306, 3405, 3303, 3304; TED 3307, 9410; plus 24 additional hours in Combination Subjects (See College of Education).

Secondary Education Minor—EDPC 3302; SCED 3311, 3312, 3317, 9420; SPED 3425.

Science Minors are available in Biology, Chemistry, Geography, Geology, Mathematics, and Physics.

Electives

Complete electives as needed to bring the total semester hours of credit to at least 125. Any undergraduate course offered by an academic department in any college of the University may be counted as an elective. Elective credit cannot also be used in meeting any other degree requirement. Electives of advanced (300-400) level may 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: Painting, Printmaking, Ceramics, Metals, Sculpture

MINOR: Art History, Painting, Printmaking, Ceramics, Art Education, Sculpture.

Senior candidates for the BFA degree are required to have an exhibition prior to graduation. 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 Drama, English, History, Interdisciplinary Studies, Linguistics, Music, Political Science, Public Administration, Psychology, Sociology, Spanish, and Speech. 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 which 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, 3340; PHIL 3340; POSC 3342; SOCI/ANTH 3318.

Optional Courses include: MICR 3230, 3459; ZOOL 2364; ECON 3367; HIST 3324, 3339; MGMT 3405; POSC 3440; RELI/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 a serious 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.

These courses may also be offered, as a concentration, to students enrolled in other colleges of the University.

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; POSC 3324, 3338, 3343, 3431; MS 3401-3402; 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 Religion.

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 3395; HIST 3369, 3374; POSC 3426; RUSS 3320; SOCI 3425

TRANSLATION AND INTERPRETATION (Spanish/English)

The Translation and Interpretation Program crosslisted in the Departments of Modern Languages, English, 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 Modern Languages section.

URBAN STUDIES

The Urban Studies minor is intended for students with a serious 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.

These courses may also be offered as a concentration, by students enrolled in other colleges of the University.

Core Courses include: ECON 3335, GEOG 3311, POSC 3322, and SOCI 3303.

Optional Courses include: HIST 3306, 3309, 3328, 3343; POSC 3227, 3322, 3351, 3421; PSYC 3207; SOCI 3303, 3304, 3327, 3404; SOWK 3311.

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.

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 18 hours must be at the upper-division level. Core courses include: ENGL 3360, HIST 3329, POSC 3346, and SOCI 3370. A variety of other courses appropriate for the Women's Studies minor may be taught regularly or as special topics in a number of departments.

The Women's Studies Program is coordinated by a board of directors consisting of: Gail Mortimer, Teresa Melendez-Hayes, and Lois Marchino, (English), Kathleen Staudt (Political Science), and Gay Young (Sociology). Students should consult one of the above for information about the program or the applicability of any course toward the minor. The Women's Studies Office is in Worrell Hall 303, telephone 747-5200.

Special Programs

HONORS

The University Honors Program, the details of which can be found in the Student Programs and Services section of this *Catalog*, actually had its beginnings as a Liberal Arts Honors Program. Many of the current emphases of University Honors—including the promotion of excellence, the scheduling of small classes, and facilitating close interaction between students and faculty—had their genesis in the College of Liberal Arts.

Although the Honors Program now enjoys University-wide status, it has not lost its roots in liberal arts. Each semester the College offers a significant number of honors sections of both required and elective courses. In the past, honors courses have been offered in the departments of Criminal Justice, Drama and Speech, English, History, Linguistics, Music, Philosophy, Political Science, Psychology, Religion, and Sociology/Anthropology. Moreover, History, Political Science and Psychology offer departmental honors upon completion of an honors thesis. Through these offerings, as well as by means of individualized learning experiences such as independent study in special topics courses and the creative articulation of Honors contracts, the College of Liberal Arts continues to contribute to the University goal of providing its students with the satisfaction of having stretched 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 want undergraduate students to acquire a broad education and to master certain skills. In particular, law schools want students whose comprehension and written expression are superior, who have acquired a critical understanding of human institutions and values, and who have demonstrated ability as creative thinkers. Any course or major that helps you 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 of majors for pre-law students, they do advise against taking many law courses at the undergraduate level; however, the particular choice 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 Office of the Dean of Liberal Arts (915) 747-5666.

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 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/English as a Second Language, and Social Studies.

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.

Art

350 Fox Fine Arts
(915) 747-5181

CHAIRMAN: Charles E. Fensch

PROFESSOR: Fensch

ASSOCIATE PROFESSORS: Arnold, Bishop, Thiewes

ASSISTANT PROFESSORS: Gregory, Kemp, Parish, Perlman

GALLERY DIRECTOR: Henry Barendse

Bachelor of Fine Arts

1. 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 international students and others who are not native speakers of 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 3106; CS 3110; plus 3-hour Biology elective.

Humanities

PHIL 3208; plus 6 hours of upper-division English; creative writing or literature.

2. Art Foundations (54 hours)
ARTF 3101, 3102, 3103, 3104, 3315; ARTH 3105, 3106, 3319, 3329; ARTG 3206; CERM 3204; DRAW 3208, 3218, 3410; MTL5 3203; PNTG 3201; PRNT 3205; SCUL 3202.
3. Major Art Area (21 hours)
To be selected from Ceramics, Drawing, Graphic Design, Metals, Painting, Printmaking, or Sculpture; 18 hours must be upper-division.
4. Minor Art Area (12 hours)
To be selected from a field other than the major; 9 hours must be upper-division.
5. 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 163 semester hours. The 12 Art Education hours may count in the minor and elective blocks of the BFA program.

1. Professional Studies (25 hours)
EDPC 3301; ELED 3302; RED 3340; SCED 3317; SPED 3425; TED 1201, 9496.
2. Art Education (12 hours)
ARTE 3312, 3321, 3322, 3421.

Bachelor of Arts

The BA degree may be earned with a major in Art by completing the 62-hour general requirement block listed in the Liberal Arts introductory section, plus the following, for a total of 128 semester hours:

1. Major area (24 hours)
ARTF 3101, 3102, 3103, 3104; ARTH 3105, 3106; DRAW 3208, 3218.
2. Concentration (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.
3. Minor area (18 hours)
4. 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:

1. **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 3106; CS 3110; plus 6 hours of science electives.
 - Humanities
6 hours of upper-division English: creative writing or literature.
2. **Professional Studies** (25 hours)
EDPC 3301; ELED 3302; RED 3340; SCED 3317; SPED 3425; TED 1201, 9496.
3. **Art Foundations** (54 hours)
ARTF 3101, 3102, 3103, 3104, 3315; ARTH 3105, 3106, 3319; ARTG 3206; CERM 3204; DRAW 3208, 3218; MTL5 3203; PNTG 3201; PRNT 3205; SCUL 3202; plus 6 hours Art electives.
4. **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.

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)

Designed to provide a basis 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 to meet the needs of the prospective classroom teacher. The course will develop 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.

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.

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 the crafts area to develop understanding and skills.

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:* ART 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)

Problems in color mixing, utilizing various color theories and color scales. Special projects stressing color relationships. 6 hours in studio per week.

3102 Basic Drawing I (0-6)

Stress upon achieving mastery 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.

3103 Basic Design II (0-6)

Compositional color structure; emphasis upon varied media and materials, and upon two-dimensional color problems. *Prerequisite:* ARTF 3101. 6 hours in studio per week.

3104 Basic Drawing II (0-6)

Compositional factors in drawing, to include a continuation of basic skill studies, directing these skills toward achieving two-dimensional structure. Stress of shape factors. *Suggested:* Take concurrently with ARTF 3103. *Prerequisite:* 6 hours in studio per week.

3135 Advanced Design (0-3)

In-depth study of the fundamental elements and principles of two and three dimensional design. Emphasis on development of 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, 3103, 3104 or Instructor Approval. Basic Drawing I and II. 6 hours in studio per week. Laboratory Fee: \$8.

3214 Ceramics II (0-6)

Stressing wheel production for perfection of the 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)

Emphasis on the chemistry and formulation of glazes used at varying temperatures; triaxial blending, empirical formulas. Special decorating techniques. *Prerequisite:* CERM 3214 or permission of the instructor. 6 hours in studio per week. Laboratory Fee: \$8.

3314 Ceramics IV (0-6)

Exploration of clay from the non-utilitarian aspect, stressing sculptural relationship of joined forms, both thrown and hand built. Research into clay and clay bodies. *Prerequisite:* CERM 3214 or permission of instructor. 6 hours in studio per week. Laboratory Fee: \$8.

3324 Ceramics V (0-6)

Stress placed on utilitarian forms and techniques of production; slip casting, jiggering, and moulding, added experience in clay body formulation for specific design problems. *Prerequisite:* CERM 3314 or permission of instructor. 6 hours in studio per week. Laboratory Fee: \$8.

3404 Ceramics VI (0-6)

Emphasis placed on the studio aspect of production, including kiln materials, kiln construction, potter's wheels; problems involved with studio function. *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.

Graphic Design (ARTG)

3206 Introduction to Graphic Design/Illustration (2-4)

This course will explore the fundamental theories, principles, skills, and vocabulary needed to foster original design and illustration.

3216 Advertising Design (2-4)

The design principles and the interrelationship of illustration, type, graphics, and symbols are analyzed. Group projects will familiarize students with current methods and techniques employed in the advertising field. *Prerequisite:* ARTG 3206

3316 Illustration I (2-4)

Students will be exposed to problems faced by the illustrator in drawing technique, media, and preparation of art work for reproduction. Assignments will be similar to those faced by the working illustrator. *Prerequisite:* ARTG 3216

3326 Illustration II (0-6)

This course will continue with problems and assignments encountered by the illustrator. Emphasis will be placed on contemporary media and techniques and the use of visuals for television. *Prerequisite:* ARTG 3316

3406 Graphic Design Internship (0-6)

This course will be an internship with a design firm, art studio, television station, or advertising agency. The student will gain actual experience "on a board" or in another phase of the studio's operation. *Prerequisites:* ARTG 3206, 3216, 3316, 3326.

3416 Portfolio Design (0-6)

This course will give the student an opportunity to develop a professional portfolio for presentation. All phases of graphic design may be encountered. *Prerequisite:* Design Internship.

3426 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.

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.

3209 History of Contemporary Art (3-0)

A critical study of post war developments in modern art in Europe and the United States. *Prerequisite:* ARTH 3106.

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 1600's 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.

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 learning to draw from the live model with varied perceptual approaches. *Prerequisites:* ARTF 3101 and 3102 or permission of instructor. Laboratory Fee: \$8.

3218 Life Drawing II (0-6)

Drawing the human figure from live model(s). Emphasis upon the rendering of form by use of line, light and shade. Some mixed media experience. *Prerequisite:* DRAW 3308 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 (other than human). Emphasis upon learning the differences and similarities among vertebrates. Includes research, precision skeletal renderings and gestural sketches from the live animal. *Prerequisite:* DRAW 3218 or permission of instructor. Laboratory Fee: \$8.

3430 Special Problems in Life Drawing (0-6)

Emphasis upon individual direction in drawing the live figure. May be repeated for credit. *Prerequisite:* 12 semester hours in life drawing or permission of instructor.

3410 Advanced Drawing I (0-6)

Exploration of drawing media, expansion of subject matter capabilities and the practice of individual expression into finished drawing compositions. *Prerequisite:* DRAW 3308 or permission of instructor. No Laboratory Fee.

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. No Laboratory Fee.

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. 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:* MTLS 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:* MTLS 3403 and permission of instructor. Minimum of 6 hours in studio per week. May be repeated for credit if problems vary. Laboratory Fee: \$8.

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 3103 or Instructor Approval. 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. Laboratory Fee: \$6.

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.

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 3103 or Instructor Approval. 6 hours in studio per week. Laboratory Fee: \$4.

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: \$4.

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: \$4.

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: \$4.

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: \$4.

3405 Printmaking VI (0-6)

Special problems in printmaking. *Prerequisite:* 4 courses in printmaking. A minimum of 6 hours in studio per week. Laboratory Fee: \$6.

3425 Printmaking VII (0-6)

Emphasis upon individual direction and achievement. *Prerequisite:* 12 semester hours in printmaking or permission of instructor. Laboratory Fee: \$6.

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.

Sculpture (SCUL)**3202 Sculpture I (0-6)**

Fundamentals of design working with clay, plaster and related materials. *Prerequisite:* ARTF 3101 and 3102 or permission of instructor. 6 hours in studio per week. Laboratory Fee: \$8.

3232 Sculpture II (0-6)

Continued work with fundamental design and technique. Introduction to mouldmaking and simple metal casting, metal fabrication and soft sculpture. *Prerequisite:* SCUL 3202. 6 hours in studio per week. Laboratory Fee: \$8.

3302 Sculpture III (0-6)

Experimentation in bronze and aluminum casting, welding, plastics, and concrete. *Prerequisite:* SCUL 3232. 6 hours in studio per week. Laboratory Fee: \$8.

3332 Sculpture IV (0-6)

Experimentation in individual directions with a few problems related to practical application of sculpture to our environment. *Prerequisite:* SCUL 3302. 6 hours in studio per week. Laboratory Fee: \$8.

3342 Sculpture V (0-6)

Continued individual investigation into advanced sculpture involving contemporary techniques and materials. *Prerequisite:* SCUL 3332. 6 hours in studio per week. Laboratory Fee: \$8.

3402 Sculpture VI (0-6)

Emphasis on advanced sculptural design with individual investigation and criticism. *Prerequisite:* SCUL 3342. 6 hours in studio per week. Laboratory Fee: \$10.

3432 Sculpture VII (0-6)

Emphasis upon individual direction and achievement. *Prerequisite:* 12 semester hours in sculpture or permission of instructor. Fine Arts Fee: \$10.

3442 Special Problems in Sculpture (0-6)

Emphasis upon individual direction and achievement in sculpture. May be repeated for credit when problem varies. *Prerequisite:* 12 semester hours in sculpture or permission of instructor.

See the *Graduate Studies Catalog* for graduate programs and courses.

Chicano Studies

104 Graham Hall

(915) 747-5462

DIRECTOR: Roberto E. Villarreal

PARTICIPATING FACULTY:

Drama: Pomo

English: Day, Gingerich, Melendez-Hayes, West

History: Jackson, Martinez

Linguistics: Amastae, Blansitt, Cotton, Sharp

Modern Languages: Aguilar, Garcia, Teschner

Music: Cardon

Philosophy: Haddox, Springer

Political Science: Bath, Peterson, Staudt, Villarreal

Sociology and Anthropology: Eyde, Foster, Rivera, Stoddard

Teacher Education: Barker, Bixler-Marquez, Hernandez,

Midobuche-Bernal, Villamil-Tinajero

Chicano Studies offers a variety of courses from a number of disciplines. These courses are designed to provide knowledge 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; satisfactory completion of an area of concentration will be recorded on the student's transcript.
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 are follows:
 - 3 Chicano Studies 3105 (Prerequisite for majors)
 - 3 Philosophy 3109
 - 3 One of the following: Anthropology 3205, Philosophy 3213, Sociology 3258, 3259
 - 3 Anthropology/English 3374, or Drama 3335
 - 3 English 3310
 - 3 History 3309
 - 3 Political Science 3321
 - 6 From the following: Bilingual Education 3402, 3434; History 3327, 3328, 3342, 3343, 3350; 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 B.A., B.S., or B.S.W. 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. In order to obtain recognition, students must complete 18 hours, at least 12 of which must be upper-division level.

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).
- 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).

Humanities Option

- 3 Chicano Studies 3105 (It is recommended that this course be taken first)
- 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, 3452 (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: Teacher Education 3307, 3317
- 12 From the following: Chicano Studies 3450 (when topic is appropriate); Bilingual Education 3371, 3402, 3434, 3435, 3440; 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); Chicano Studies 3450; Drama 3335; Bilingual Education 3402; English 3310; History 3309; Philosophy 3351; Political Science 3321; Spanish 3325.

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.

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
 Drama: 3335
 English: 3310, 3374
 History: 3309, 3327, 3328, 3342, 3343, 3350
 Linguistics: 3472
 Philosophy: 3109, 3213, 3351, 3452 (when topic is appropriate)
 Political Science: 3321, 3342, 3345, 3410 (when topic is appropriate)
 Sociology: 3258, 3259
 Spanish: 3325, 3472
 Teacher Education: BED 3402, 3434, 3435, 3440; TED 3450 (when topic is appropriate)

Recommended Electives

Anthropology: 3211, 3313
 Art: ARTH 3310
 Economics: 3366, 3368
 English: 3371
 History: 3316, 3349, 3344, 3345
 Linguistics: 3308, 3309, 3315
 Music: 3126, 3325

Philosophy: 3312

Political Science: 3343, 3344

Sociology: 3304, 3327, 3336, 3352

Spanish: 3309, 3315

Teacher Education: BED 3371; TED 1209, 3307, 3317

Communication

202 Cotton Memorial
 (915) 747-5129

CHAIRMAN: Lawrence J. Johnson

PROFESSOR EMERITUS: Virgil C. Hicks

PROFESSOR: Small

ASSOCIATE PROFESSOR EMERITA: Jean H. Miculka

ASSOCIATE PROFESSOR: Wood

ASSISTANT PROFESSORS: Byrd, Chavez, Etheridge, Jones

LECTURERS: Mearns, Montes, Skibbe, Wilson

The Department of Communication affords students the opportunity to pursue the Bachelor of Arts degree in one of three majors: Broadcasting, Journalism, and Speech. In addition, the Department also offers secondary education majors the opportunity to pursue a teaching certificate in journalism or speech.

Major in Broadcasting

Students pursuing a BA in Broadcasting must complete the lower division Mass Communication Core Courses before enrolling in any other course in the department. MC 3355 may be taken only after a student successfully completes 60 semester hours. After completion of the core courses, students will complete the Broadcast News sequence and additional coursework in news, advertising or production.

1. Mass Communication Core Courses (15 hours): MC 3102, 3201, 3206, 3250, and 3355;
2. Broadcast News Sequence (12 hours): BROD 3303, 3304, 3306 and 3320;
3. Electives (6 hours): News—BROD 3408, 3405, or MC 3357; Advertising—MC 3315, 3408, or 3357; Production—BROD 3421, 3407 or MC 3357.

Major in Journalism

Students pursuing a BA in Journalism must complete the lower division Mass Communication Core Courses before enrolling in any other course in the department. The upper division core requirement may be taken only after a student successfully completes 60 semester hours. After completion of the core courses, students may select a course of study in the News Communication Sequence, the News Communication Sequence/Advertising Emphasis area, or the News Communication/Photojournalism Emphasis area.

1. Mass Communication Core Courses (15 hours): MC 3102, 3201, 3206, 3250, and 3355;
2. Journalism Sequences/Emphasis Areas
 News Communication Sequence (18 hours): JOUR 3302; 3303 or 3307; 3304; 3305; plus 6 additional hours:
 News—JOUR 3312, 3406, or MC 3357;
 Photojournalism—JOUR 3308, 3454, or MC 3357;
 Magazine—JOUR 3351, 3352, or 3353
 News Communication Sequence/Advertising Emphasis Area (18 hours): JOUR 3351, 3352, 3304, and 9 hours from MC 3307, 3315, 3357, 3408, JOUR 3330, and 3493.
 News Communication Sequence/Photojournalism Emphasis Area (18 hours): JOUR 3304, 3307, 3308, and 9 hours from JOUR 3301, 3302, 3303, 3305, 3353, 3406, 3454, and MC 3357.

Secondary education majors desiring a teaching certificate in journalism must complete the following: MC 3102, 3201, 3206, 3250, 3355, JOUR 3302, 3304, 3305, 3303 or 3312, and 3307.

Major in Speech

Majors must choose a speech program from one of the following options:

1. Organizational Communication. Recommended for students interested in careers in public relations, industrial training, or personnel development. Required courses are SPCH 3102, 3221 or 3222, 3206, 3307, 3308, 3430, 3491, plus 6 advanced speech hours. Recommended electives are ENGL 3362; 6 hours of Management/Marketing; PSYC 3203, and 3 additional hours in Sociology or Psychology.
2. Rhetoric and Public Address. Recommended for students interested in careers in law, theology, politics, or wishing to pursue graduate studies in speech. Required courses are SPCH 3101, 3220, 3221, 3222, 2221, 2222, 3205 or 3206, 3307, 3414, 3415, 3430.
3. Communication Studies. Recommended for students interested in careers in communication analysis, law, government service, or wishing to pursue graduate studies in communication. Required courses are SPCH 3101 or 3102, 3206, 3220, 3222, 3307, 3316, 3414, 3430, 3443, and 3 additional advanced speech hours.
4. Speech Education. Recommended for Liberal Arts students wishing to teach speech. Certification requirements are listed in the College of Education. Required courses are SPCH 3101, 3103 and 1103, 2221, 2222, 3205, 3206 or 3220, 3221 or 3222, 3290, 3307, 3333, and 6 advanced speech hours selected in consultation with the advisor.

Minor in Speech

Students majoring in other disciplines may earn a minor in Speech with the following courses: SPCH 3205 or 3206, 3221 or 3222, 3307 or 3308, 3316 or 3443; plus any two of the following: SPCH 3411, 3414, 3415, 3430, 3450, or 3491.

Mass Communication (MC)**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.

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, and ability to type 30 words per minute.

3201 Writing for the Mass Media (2-5)

Emphasis on fundamentals of newswriting and story structures with emphasis on development of information gathering skills and journalistic style. Concentration on print media application to student newspaper and other related areas of written communication. *Prerequisites:* Sophomore standing, completion of MC 3102, ENGL 3111-3112 and completion of MC 3200 (or passing of equivalency exam).

3206 Introduction to Broadcasting (3-0)

A general study of broadcasting, its organization, structure, function, historical development and social aspects. This course is designed to give the major, as well as the non-major, a general working knowledge of mass media of broadcasting. *Prerequisites:* Sophomore standing and MC 3102 for majors; sophomore standing for non-majors.

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.

3301 History and Principles of Mass Communication (3-0)

Ethical, commercial and political aspects of U.S. print, magazine and electronic media and their roles in the development of American society. *Prerequisites:* Junior standing and MC Core Courses.

3315 Commercial Copywriting (3-0)

Writing commercials for radio and television. Creating, writing and producing effective commercial continuity. *Prerequisites:* Junior standing and MC Core Courses.

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 Research Practicum (1-15)

Advanced work in the student's sequence. Students in this program gain practical experience and/or research experience by working in professional firms, agencies or departments in their major emphasis area. *Prerequisites:* MC 3201, JOUR 3204 (waived for broadcast majors) and an advanced course in the student's major emphasis area. Junior standing 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.

3408 Advertising Media Sales (3-6)

Principles, problems and role of media sales. Buying motives, persuasion techniques and steps of selling process are considered as these relate to media sales. Student is assigned to media lab work, which will include servicing accounts under supervision of advertising manager and the instructor. Offered in fall semester only. *Prerequisites:* Senior standing and MC Core Courses.

Broadcasting (BROD)**1205 Radio Station KVOF (0-3)**

Work on staff of Radio Station KVOF. *Prerequisites:* Sophomore standing and MC 3206.

1305 KVOF Station Management (0-6)

Experience in management positions for radio station KVOF. *Prerequisites:* BROD 3303 and permission of station manager and/or instructor.

3303 Audio in Media (3-3)

Theory and techniques of sound production, recording, microphones, audio tape recorders and audio board equipment. Analysis of creative efforts and responsibilities in writing, production and direction. *Prerequisites:* Junior standing and MC Core Courses.

3304 Radio-Television Announcing (3-2)

Study of the vocal skills needed for mass communication. Students will study announcing by drilling in the proper use of their own vocal capabilities, by analyzing skills of professional radio-television announcers, and by practicing on audio-video equipment. *Prerequisites:* Junior standing and MC Core Courses.

3306 Radio News (3-0)

Writing and reporting for radio, includes instruction in interviewing techniques and rewriting wire copy. *Prerequisites:* Junior standing, BROD 3303, and MC Core Courses.

3320 Television Production (3-4)

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. *Prerequisites:* Junior standing, BROD 3303 and MC Core Courses.

3401 Advanced Television Practices (0-9)

A semester of advanced television production experience of a professional nature. Students produce and direct television programs for public consumption through Public Television Station KCOS or other professional media. *Prerequisites:* Senior standing, C or better in BROD 3320.

3405 Television News (3-0)

Introduction to electronic news gathering techniques and writing copy in support of video. *Prerequisites:* BROD 3306 and MC Core Courses.

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 broadcasting on KTEP-FM. *Prerequisites:* Senior standing, BROD 3303 and MC Core Courses.

3408 Advanced Radio-Television News (3-0)

Advanced application of radio and television reporting skills. Students will learn the techniques of writing/producing newscasts and mini-documentaries for radio or television. *Prerequisites:* Senior standing, BROD 3405. Concurrent enrollment in BROD 3421 recommended.

3421 Advanced Television Production (3-4)

Building on the skills learned in BROD 3320, this course focuses on producing and advanced directing with emphasis on electronic news gathering and production of documentaries or news inserts. *Prerequisites:* Senior standing, BROD 3320.

J urnalism (JOUR)**1104, 1204 Publication (0-3)**

For work on the staff of one of the University's student publications. Students taking the course must work on the staff of the *Prospector* at prescribed periods under teacher-advisor supervision. May be repeated for credit to the extent of six hours toward graduation. No senior students may take the 1104 course for credit toward graduation.

2204 Intern Program (0-10)

For selected students to work in all areas of newspaper production for the *Prospector*. Applications may be made to the chairman of the Communication Department before registration each semester.

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 mass gathering. *Prerequisites:* Junior standing, MC Core courses with C or better in MC 3201.

3303 The Special Article (3-0)

Methods of gathering material for newspaper and magazine 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, electronic composition, printing methods and cost estimations. *Prerequisites:* Junior standing and MC Core Courses.

3305 News Editing (3-3)

Instruction and practice in basic newspaper editing and production with focus on practical experience in editing and copy preparation for publication. Includes headline writing, photo editing, newspaper layout and basic typography for periodicals. Emphasis on development of news judgment, accuracy and fairness while exposing students to legal problems confronting the media. *Prerequisites:* Junior standing, MC Core Courses with C or better in MC 3201.

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:* Sophomore standing and MC Core Courses.

3308 Photojournalism (3-2)

An introduction to photojournalistic concepts and practices and the use of larger format cameras. The student will go beyond basic photographic skills and will deal with word-picture combinations. *Prerequisites:* Junior standing, MC Core Courses and JOUR 3307.

3312 The Opinion Function (3-0)

Instruction and practice in writing newspaper editorials and page columns. Early emphasis on structure and style, layout and policies. Practice in writing the signed column. *Prerequisites:* Junior standing and MC Core Courses.

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.

3351 Advertising Layout and Copy (3-0)

Basic course in production and handling of advertisements. Step-by-step production of typical advertisement. Stresses creativity, mechanical makeup, final reproduction and evaluation. Agency and trade terms used to specify methods and desired results. *Prerequisites:* Junior standing, MC Core Courses and JOUR 3304.

3352 Public Relations (3-0)

Principles, techniques and methods used in public relations; necessity and significance in the free enterprise system. Relationships include national, state and local governments, employees, customers, suppliers, social and religious institutions. *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. Basics of color printing and color separation. Includes working with art and photographs and business side of publications. *Prerequisites:* Junior standing, MC Core Courses and JOUR 3304.

3393 Case Studies in Public Relations (3-0)

Practical methods of handling problems in public relations based on actual cases with emphasis on fact-finding, planning, promoting and evaluating. *Prerequisites:* Junior standing, MC Core Courses and JOUR 3352.

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 JOUR 3302.

3408 Advanced Photojournalism (3-2)

Speakers in various photographic fields; techniques in black and white and color, including use of the view camera. Problems in lighting. An introduction to color film processing. A project in photojournalism. A juried exhibit and photo agency assignment. *Prerequisites:* Senior standing and a C or better in JOUR 3308.

3454 Photojournalism Seminar (3-3)

Problem-solving exercises, discussion and research in photojournalism areas. Problems in publication will be stressed, including campus, regional and national publications. Projects will include word-picture essays suitable for publication. *Prerequisites:* Senior standing and a C or better in JOUR 3308 or instructor permission.

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.

3104 Speech for Non-native Speakers of English (3-0)

The major emphasis will be on public speaking with special attention to developing language skills, correcting pronunciation and vocabulary building. Same as ESOL 3104.

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 extra-curricular 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.

Criminal Justice

411 Liberal Arts
(915) 747-5296

CHAIRMAN: Joseph B. Graves, Jr.

PROFESSOR: Graves

ASSISTANT PROFESSORS: Guinn, Mahan

VISITING ASSISTANT PROFESSOR: Weatherford

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 an/or Mathematics: Biology, Chemistry, Geology, Mathematics, Physics
- 8 Foreign Language: French, German, Spanish, Russian; or 9 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 Chairman 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 procedures.

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)

This 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 Chairman.

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.

3422 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 programs and courses.

Drama

371 Fox Fine Arts
(915) 747-5146

CHAIRMAN: Charles E. Fensch
PROFESSOR EMERITUS: Robert Milton Leech
PROFESSOR: Wingate
ASSOCIATE PROFESSOR: Etheridge
ASSISTANT PROFESSORS: Alkofer, Eastman, Pomo, Ronke

For Undergraduates

Major in Drama: Students pursuing the BA degree with a major in Drama must take the following:

1. SPCH 3103 and 1103;
2. DRAM 3110, 3113, 3210, 4213, 3221, 3325, and 3332 or 3342;
3. 6 hours from DRAM 3340, 3357, and 3358; plus 6 advanced Drama hours selected in consultation with the advisor;
4. DRAM 3357-58 may not be used to satisfy the Western Cultural Heritage requirement of the BA;
5. The Fine Arts requirement of the BA must be met with one 3-hour course in Art and one in Music.

Minor in Drama: The minor requires 18 semester hours, 12 of which must be advanced (3300-3400) level, including:

1. DRAM 3113; plus one course from DRAM 3110, 4213, 3215, 3221, 3222, 3223; plus four courses from DRAM 3310, 3301, 4313, 3325, 3332, 3335, 3340, 3342, 4350, 3357, 3358, 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.

Drama (DRAM)

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 Drama. 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 DRAM 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 Summer Theatre Workshop (0-9)

Students in this course form the production company which presents the season of plays in the first summer session. Practical experience in all phases of theatre operation. May be repeated once for credit.

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.

3223 Scene Painting (1-4)

A skills development course in surface preparation, layout, use of paints, dyes, brushes and other techniques for painting framed scenery, drops, gauzes, furniture finishes and sculptured scenery.

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:* DRAM 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:* DRAM 3321.

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 extra-curricular 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.

3357 The Early Theatre (3-0)

The study of western drama and theatre from earliest times through the Romantic period.

3358 The Modern Theatre (3-0)

The study of western drama and theatre from the advent of Realism to the present.

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:* Drama 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.

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 film 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.

English

113 Hudspeth Hall
(915) 747-5731

CHAIR: Mimi Reisel Gladstein

PROFESSORS EMERITI: Lillian Collingwood, Lurline H. Coltharp, Francis Fugate, Joseph James, Charles Leland Sonnichsen, Roberta Walker

PROFESSORS: Burlingame, Day, Hernandez, Leach, Stafford, Taylor, West

ASSOCIATE PROFESSORS: Antone, Bledsoe, Esch, Gallagher, Gingerich, Gladstein, Johnson, Melendez-Hayes, Mortensen, Mortimer, Ullman

ASSISTANT PROFESSORS: Boley, Dick, Gordon, Justice, Jussawalla, Kiska, Lacey, Mansfield-Kelley, Marchino, Meyers, O'Hearn, Potts, Pownall, Scheiber, Schwalm, Trejo, Walker, White

Undergraduate Degree Requirements

Requirements for all undergraduate degrees from the University of Texas at El Paso include successful completion of English 3112 (or Linguistics 4113). 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) AND 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) a score of three or higher on the CEEB Advanced Placement Examination in Literature and 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 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.

English Major Degree Options

Students are expected to consult with the Undergraduate Advisor 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.

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:

- 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).
- 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.
- 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 three options for the Minor in English, each of which requires the completion of 18 Advanced hours:

- Literature — 3 hours, British literature before 1800; 3 hours, British literature since 1800; 3 hours, American literature; plus 9 elective hours in literature courses.
- Creative Writing, for students interested in writing poetry, fiction, non-fiction, screenplays, or plays — ENGL 3361; 6 hours, literature; 9 hours, creative writing.
- 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 English Undergraduate Advisor in the choice of appropriate courses.

English (ENGL)

Courses for Undergraduates (Unless otherwise indicated, the prerequisite for 3200-level courses is English 3112, and for 3300-3400 level courses it is 3 hours of sophomore literature or junior standing.)

3001 Improving Reading/Writing (3-0)

Provides procedures, practice and individual help with reading textbooks and other university reading assignments, and with writing papers, essay examinations, and lecture and reading notes. May not be used to satisfy any institutional degree requirements but may be used to remove provisional status. Provisional students with an SAT verbal score of 290 or below or an ACT English score of 12 or below are required to take this course in conjunction with specially designated sections of ENGL 3110.

3110 Basic English Composition (3-0)

Study in language fundamentals; practice in organizing and writing paragraphs with emphasis on sentence structure, diction, vocabulary, spelling and other areas of writing. (LING 4111 may be substituted by non-native English speakers.)

3111 Expository English Composition (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. (LING 4112 may be substituted by non-native English speakers.) *Prerequisite:* ENGL 3110 or placement by examination.

6111 Written and Oral Communication (6-0)

Integrated study of and practice in the rhetoric of effective oral and written discourse to help students improve speaking, writing, reading, and listening skills through a variety of learning experiences. Counts for both ENGL 3111 and SPCH 3101. *Prerequisite:* ENGL 3110 or placement by examination.

3112 Research and Critical Writing (3-0)

Study and practice in the use of library facilities and research and documentation techniques; emphasis on research papers and on critical essays. (LING 4113 may be substituted by non-native English speakers.) *Prerequisite:* ENGL 3111 or 6111.

3211 English Literature (3-0)

English literature from the beginning to Samuel Johnson. Required of all English majors.

3212 English Literature (3-0)

English literature from Samuel Johnson to the present. Required of all English majors.

3213 Introduction to Fiction (3-0)

Attention to contemporary works as well as to 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.

1301/3301 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

3305 Children's Literature (3-0)

A survey of the major genres of literature for children, including fairy tales, folk tales, nursery rhymes, and other forms, both traditional and contemporary, and a study of the theories, principles, applications, and classroom techniques.

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, and Melville.

3312 American Literature since 1860 (3-0)

Representative writers from the Civil War to the present, with emphasis on major figures from Whitman to the present.

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*, *Lea*, *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*, *Titus and Cressida*, as well as non-dramatic works such as the *Sonnets*.

3323 Seventeenth-Century Prose and Poetry (3-0)

Major poetic movements in the seventeenth century in the works of Donne, Jonson, the Cavalier Poets, Milton, and Dryden. A study of the prose works of Bacon, Browne, Dryden, Hobbs, and others.

3330 Neo-Classical Literature (3-0)

Neo-classical literature in the period 1660-1784.

3333 Romantic Literature (3-0)

A study of the major poets and prose writers. Special emphasis is given to Burns, Blake, Wordsworth, Coleridge, Lamb, Hazlitt, Byron, Shelley, Keats, Landor, Hunt and DeQuincey.

3337 Victorian Literature (3-0)

A study of the major poets and prose writers. Special emphasis is given to Tennyson, Browning, Macaulay, Carlyle, Arnold, Newman, Ruskin, Pater, Stevenson, Rossetti, Meredith, Morris, Swinburne, Hardy, Hopkins, Housman, and the early Yeats.

3343 Early Twentieth-Century Poetry (3-0)

The most important poets, British and American, of the early twentieth century. Special emphasis is given Eliot, Yeats, Frost, Graves, D. H. Lawrence, Pound, W. C. Williams, Stevens, and Dylan Thomas.

3344 Contemporary Poetry (3-0)

The most important poets, British and American, of the later twentieth century. Special emphasis is given such poets as Auden, Ted Hughes, Plath, Sexton, William Stafford, Bly, Berryman, Roethke, Wright, Wilbur, and Creeley.

1358-3358 Special Problems in Writing

A study of special writing problems. Specific topics will vary; instructors may require concurrent enrollment in another subject area course. *Prerequisite:* ENGL 3112

3359 Technical Writing (3-0)

Written and oral reports; assembling material, organizing, writing and revising. *Prerequisite:* ENGL 3112.

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 subject changes.

3361 Creative Writing (3-0)

Basic techniques of imaginative writing applicable to fiction, poetry, and nonfiction. For students interested in perfecting their powers of written expression and/or critical abilities. Emphasis is on contemporary communication at various reader levels with particular attention to viewpoint and style. The course includes a survey of character portrayal and an introduction to 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 from scholarly to popular, analysis of periodical article types and their structure, and techniques of biographical writing. Covers illustrative material and copyright problems. Attention is given to the use of fictional techniques in nonfiction. *Prerequisite:* Six hours sophomore English; or concurrent enrollment in ENGL 3211 or 3212 for Creative Writing Option majors.

3365 Advanced Composition (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 written composition. *Prerequisite:* ENGL 3112. 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 traditional and contemporary forms of poetry, with attention to basic elements such as imagery and symbolism. *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, Turgenev, 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.

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, the dramas of Marlowe, Greene, Kyd, Beaumont and Fletcher, Dekker, Jonson, Webster, and the plays of Dryden, Wycherley, Congreve, Sheridan, and others.

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 upon such writers as Charles Brockden Brown, Brackenridge, Cooper, Melville, Hawthorne, Eggleston, 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 upon such writers as Dreiser, Norris, London, Glasgow, Cather, Lewis, Anderson, Porter, Fitzgerald, Hemingway, Steinbeck, Faulkner, and Warren.

3419 American Fiction since 1945 (3-0)

A study of representative works of contemporary American writers with emphasis upon such writers as Wright, Ellison, Heller, Barth, O'Connor, Bellow, 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 and in 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, particular attention being given to the novels of Richardson, Fielding, Smollett, Walpole, Burney, Jane Austen, and Scott.

3448 The English Novel: Nineteenth Century (3-0)

A continuation of English 3447, with study of typical works of Dickens, Thackeray, the Brontes, George Eliot, Hardy, and Meredith.

3449 The English Novel: Twentieth Century (3-0)

The important English novelists of the twentieth century, with special study devoted to the works of Conrad, Bennett, Lawrence, Joyce, Forster, Waugh, Woolf, Graham Greene, Henry Green, Cary, and William Golding.

3450 Major Individual American Author (3-0)

Close study of the work, life, and critical reputation of a major American author, chosen from such persons as Dickinson, Faulkner, Hawthorne, Melville, Twain, Whitman, O'Neill, Frost, Steinbeck, and Cather.

3454 Teaching Composition in the Elementary and Middle Schools (3-0)

A study of current theory and practice in the teaching of writing in the elementary and middle schools; the exploration of relationships between reading theory and composition theory; the review of applicable linguistic theories; and an examination of theoretical and practical aspects of evaluating and assessing the written work of young writers.

3455 Teaching Secondary School English: Composition (3-0)

A study of current composition theories, methods of discovering, arranging, and styling content; practice in composition evaluation; exercises in teaching basic skills. (May be counted as ENGL or as SCED 3455.)

3456 Teaching Secondary School English: Literature (3-0)

A study of current approaches to teaching poetry, short stories, novels, and plays; practical exercises in applying the approaches to the classroom. (May be counted as ENGL or as SCED 3456. Laboratory and/or field experience may be required).

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 Chairman. For English majors only. May not be used for graduate credit.

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 as a Foreign Language (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 Modern Languages department for complete information.**3481 Translation I (3-0)**

Overview of translation and interpretation, including professional standards, employment opportunities and history of the professions. Basic methods of terminology research. Translation techniques such as transposition, amplification, stylistic equivalence and modulation. Introduction to Sight Translation. Must be taken concurrently with SPAN/LING/ENGL 3482.

3482 Translation Practicum I

Translation of general documents such as business letters, reports and basic economics texts; summarization exercises, practical application of principal translation and terminology research techniques. Must be taken concurrently with SPAN/LING/ENGL 3481.

3491 Translation II (3-0)

A continuation of Spanish/Linguistics/English 3481. Translation of semi-technical and literary texts in a variety of fields. Advanced Sight Translation of general texts. Summarization and precis-writing guidelines. Translation for information vs. translation for publication. Exploration of professional ethics and responsibilities as well as employment opportunities and conditions. Must be taken concurrently with SPAN/LING/ENGL 3492. *Prerequisites:* SPAN/LING/ENGL 3481 and 3482.

3492 Translation Practicum II (3-9)

Translation of semi-technical texts requiring advanced terminology research skills. Application and practice of concepts introduced in Spanish/Linguistics/English 3491, including summarization, precis-writing and text adaptation. Laboratory hours to be devoted to refinements of translation and terminology techniques. Must be taken concurrently with SPAN/LING/ENGL 3491. *Prerequisites:* SPAN/LING/ENGL 3481 and 3482.

See the *Graduate Studies Catalog* for graduate programs and courses.

History

334 Liberal Arts
(915) 747-5506

CHAIRMAN: Kenton J. Clymer

PROFESSORS EMERITI: John H. McNeely, Rex Wallace Strickland, Wilbert Helde Timmons

PROFESSORS: Bailey, Clymer, Fuller, Jackson, Kawashima, Martinez, Monroe, Shover

ASSOCIATE PROFESSORS: Martin, Schalk

ASSISTANT PROFESSORS: Ambler, Broadus, Hackett, Kuzirian, McGee Deutsch, Thurston

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. History majors may not use HIST 3201-02 to satisfy the Western Cultural Heritage block requirement.

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. History minors may not use HIST 3201-02 to fulfill the Western Cultural Heritage block requirement.

Soviet and East European Concentration—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. Students who complete this specialization will receive certification of completion on their official University academic record.

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" man from the pre-Greek Near East to the seventeenth century and the emergence of revolutionary new ideas on man 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)

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 Viet-Nam.

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 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 The Great West to 1840 (3-0)

The frontier as central to nation-building; westward movement as imperial expansion; introduction to the North American Indian; comparison of Spanish, English, French, Russian and finally American frontiers in present U.S.; patterns of social development as the frontier moved from the Atlantic Coast to the Mississippi River, with emphasis on cultural interactions.

3322 The Great West since 1840 (3-0)

The Trans-Mississippi West in terms of imperial expansion; introduction to Indians of the Far West; types of societies and cultural conflict-accommodation that developed as Americans enveloped the continent in building a nation.

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 Viet Nam.

3327 Attitudes Toward Minorities in the United States (3-0)

An historical and comparative survey 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 Mexicans, Puerto Ricans, Cubans and other Latino peoples in the United States with an emphasis on cross-cultural comparisons.

3329 History of American Women (3-0)

Examines the varying values, roles, and contributions of women in the United States from colonial times to the present.

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 History of the Ancient Near East: Early Bronze Period to the Iron Age (3-0)

Focuses on significant civilizations of the Ancient Near East, an area that includes Mesopotamia, Assyria, Asia Minor, Palestine, and Egypt, during the third millennium to the first millennium B.C. Emphasis on those political, cultural, social, economic, and religious factors that determined the region's historical development.

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 since 1900 (3-0)

A description and analysis of twentieth century issues along this frontier examined in an international and broad historical context; emphasis is on problems connected with growth and development.

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.

3345 Latin America: Reform and Revolution (3-0)

A history of Latin America from independence to the present with an emphasis upon the persistence of neo-colonialism and the various efforts to alter this situation through reform and revolution. Major focus will be on Mexico, Cuba, and the northern Andean region.

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.

3352 Seventeenth Century England (3-0)

Change in Stuart England and the conflicts which resulted in revolution in 1640, restoration in 1640 and the revolution in 1688.

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 Ancient World (3-0)

A survey of Greek and Roman history focusing on the period from the rise to prominence of the Athenian polis in the 5th century B.C. to the decline of the Roman Empire in the 4th and 5th centuries A.D.

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 the 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.

3366 The Age of Absolutism, 1650-1789 (3-0)

A study of the development of royal absolutism on the continent in the seventeenth and eighteenth centuries. Emphasis on the reign of Louis XIV of France, the Enlightenment, Enlightened Despotism in Russia, Prussia, and Austria, and the growing social and institutional crisis in France before the French Revolution.

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 1815 (3-0)

The emergence of a unified German National State, relations with neighboring powers, World War I, the revolution of 1918, the Weimer Republic, rise and fall of the Third Reich, divided Germany.

3378 European Intellectual History from the Renaissance to the French Revolution (3-0)

Thoughts of individuals and currents of thought from Machiavelli to Burke seen in relationship to the social and political reality out of which they sprang.

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 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 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 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 should count the course in the appropriate field.

See the *Graduate Studies Catalog* for graduate programs and courses.

Latin American Studies

209 Miners Hall
(915) 747-5196, 747-5157

DIRECTOR: Oscar J. Martinez

PARTICIPATING FACULTY:

Art: Gregory
Economics and Finance: Brannon, James
English: Gingerich, Melendez-Hayes, Day
Geography: Lloyd, Schmidt
History: Broadus, Martin, Martinez, McGee-Deutsch
Linguistics: Amastae, Elerick, Natalicio
Modern Languages: Aguilar-Melantzon, Armengol, Bagby, Ford, Garcia, Teschner
Music: Cardon
Philosophy: Haddox
Political Science: Bath, Peterson, Villarreal
Sociology and Anthropology: Eyde, Foster, Rivera, Stoddard
Speech and Drama: Pomo

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.

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 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; HIST 3345; POSC 3333; SOCI 3360;
- 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; HIST 3345; POSC 3333; SOCI 3360;
- 6 hours from ECON 3368; HIST 3349, 3350; POSC 3444;
- 3 hours from HIST 3342, 3343;
- 3 hours from ANTH 3336; SOCI 3336;
- 3 hours from ANTH 3210, 3211; HIST 3316; PHIL 3351; POSC 3345, 3347;
- 3 hours from DRAM 3335; MUSI 3325;
- 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; HIST 3345; POSC 3333; SOCI 3360;
- 6 hours of Accounting
- 9 hours, FIN 3310, MGMT 3300, and MKT 3300;
- 9 hours, ECON 3366, 3367, and 3368.

Humanities Option (30 semester hours)

- 6 hours from ECON 3366; GEOG 3312; HIST 3345; POSC 3333; SOCI 3360;
- 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 3212; ARTH 3310; MUSI 3126.

Spanish-Linguistics Option (30 semester hours)

- 6 hours from ECON 3366; GEOG 3312; HIST 3345; POSC 3333; SOCI 3360;
- 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 or 3357;
- 12 hours from ECON 3366; GEOG 3312; HIST 3345; POSC 3333 or 3347; SOCI 3360;
- 6 hours in two disciplines from ANTH 3305, 3313; PHIL 3213; POSC 3444; SPAN 3304, 3424, 3460, 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 3210, 3211; HIST 3316; PHIL 3351; POSC 3345;
- 3 hours from DRAM 3335; MUSI 3325;
- 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.

LINGUISTICS

137 Liberal Arts
(915) 747-5767

CHAIRMAN: Charles G. Elerick

PROFESSORS EMERITI: Lurline H. Coltharp, Jacob L. Ornstein-Galicia, Ray Past, John McCarty Sharp

PROFESSORS: Blansitt, D. Natalicio

ASSOCIATE PROFESSORS: Amastae, Cotton, Elerick

ASSISTANT PROFESSORS: Goodall, Phinney

B.A. Degree—Linguistics 3210, 3220, plus 21 semester hours in Linguistics courses at the 300-400 level. All College requirements for the B.A. Degree.

Minor—Linguistics 3220 plus 15 semester hours in Linguistics courses, nine hours of which must be at the 300-400 level.

Linguistics (LING)

For Undergraduates

4103-04 Intensive Language Study (3-0)

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.

3210 Phonetics and Phonemics (3-0)

The study of speech sounds with emphasis on their articulation and transcription, and constant attention to the phonemic principle. The study is *not* limited to English phonemics. Required of all linguistics majors.

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 facility in his own language, considerable attention directed toward medical and scientific nomenclature and terminology. (Emphasis may vary with student interests.) No prior knowledge of Greek or Latin is required.

3307 The Structure of English (3-0)

Investigation of Modern English, a study of modern analyses of the language. *Recommended background:* LING 3210 or 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 (3-0)

Linguistic analysis of Spanish, including phonology, morphology, and syntax. Same as SPAN 3309. *Prerequisite:* SPAN 3202 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.

3354 Field Methods in Linguistics (3-0)

The procedures employed in the study of languages and language varieties not associated with a written tradition. The application of field methods to a particular language or language variety as announced. *Recommended Background:* LING or ANTH 3220.

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.

3440 Child Language Acquisition and Development (3-0)

The universal characteristics of child language and the implications for fostering the growth of linguistic competence; an examination of the leading theories of language acquisition and the interrelationship between language and thought. *Recommended background:* LING 3220 or 3307.

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.

3454 Psycholinguistics (3-0)

A study of the psychological factors in language behavior, including attention to theories of language learning. *Prerequisite:* Permission of department chairman or instructor.

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.

3480 Language Universals (3-0)

A study of universal and quasi-universal features of linguistic structures. *Prerequisite:* Six hours of 3300-3400 linguistic courses or permission of the department chairman.

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.

The following courses are part of the Minor in English/Spanish Translation. See the Spanish section of the Modern Languages department 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. Offered in FALL only.

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. Offered in FALL only.

3491 Topics in Translation (3-0)

Intermediate to advanced translation practicum course. Course will concentrate on a specific topic. Topics will vary each semester and include sight translation, 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. May be taken concurrently with ENGL/LING/SPAN 3492. Offered in SPRING only. Course may be repeated for credit.

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. Offered in SPRING only. Course may be repeated for credit.

English for Speakers of Other Languages (ESOL)

For Undergraduates

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. Must be taken concurrently with LING 3104 or ENGL 3001.

3111 Expository English Composition for Speakers of EFL (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 5110 and 3160 or permission of department; concurrent registration in or completion of ESOL 3104. 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 EFL. Must be taken concurrently with ESOL 3111. Lab Fee: \$2.

3112 Research and Critical Writing for Speakers of EFL (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 EFL. *Prerequisites:* ESOL 2111, 3111. Must be taken concurrently with ESOL 3112. Lab Fee: \$2.

3104 Speech for Non-native Speakers of English (3-0)

The major emphasis will be on public speaking with special attention to developing language skills, correcting 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.

3201 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. *Prerequisites:* 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.

See the *Graduate Studies Catalog* for graduate programs and courses.

Military Science

Military Science Building
(915) 747-5621

CHAIRMAN: Lieutenant Colonel David G. Bell

PROFESSOR: Bell

ASSISTANT PROFESSORS: Bowidowicz, Demasi, Krueger, McNair, Randle, Steele, Young

INSTRUCTORS: Grigsby, Burgess

General: Courses offered by this department are designed to afford the student an opportunity to become a commissioned officer, who, by education, training and demonstrated leadership qualities, is suitable for continued development as an officer in the United States Army, or in a civilian career. The curriculum provides opportunities for leadership training and experience which are not duplicated in other college courses. Instruction facilitates the development of resource management skills, self-assurance, confidence, personal discipline, executive abilities, a sense of responsibility, physical stamina, bearing, and other fundamental qualities required of an Army officer. These same qualities are conducive to success in civilian careers.

Military Science courses are generally offered during the Fall and Spring semesters only. The first two years (MS I and MS II) comprise the Basic Course offerings of Introduction to Military Skills, Land Navigation, Leadership Assessment and Managerial Skills, and Military Skills. They are normally taken during the freshman and sophomore years and do not entail 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. 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, 1116, and 2111 may be taken as electives.

Eligibility: Basic Course. To enroll in ROTC, a student must be a full time student of UT El Paso or El Paso Community College. 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 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 high school ROTC, may qualify for the advanced course by attending a six-week Summer Training Camp (Basic as opposed to Advanced Camp). Applicants for the camp should visit the Department of Military Science in February to obtain application forms and schedule a physical examination. The student must have a minimum of four semesters remaining prior to completion of a baccalaureate or advanced degree.

Advanced Course. Admission requires selection by the PMS which is based on medical fitness, an acceptable degree plan and military qualification under one of the following plans:

1. Acceptable prior military service;
2. Completion of the Basic Course requiring, as a minimum, 6 credit hours in MS 1101, 1102, 2201, and 2202;

3. Completion of Basic Camp at Fort Knox, Kentucky; or Junior ROTC-advanced placement (approved on an individual basis by the PMS).

The student is required to execute a contract with the government to accept a commission in the Army upon graduation. The active duty commitment may be as little as three months and will not involuntarily exceed three years.

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, whereas others are available on a nationally competitive basis at the beginning of the spring semester. Freshmen, to include 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, and 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 the basic summer camp. 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 \$100.00 per month for a maximum of twenty months, excluding the six-week advanced camp where pay is at the rate of \$13.00 per day. 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 \$100.00 per month during the fall and spring semesters of their freshman and sophomore years. The government also provides a mileage allowance of 18.5 cents per mile to and from basic and advanced camps. Pay at the six-week basic camp, attended by candidates for the Two-Year ROTC Program, is approximately \$600.

Additional Programs: Qualified Advanced Course cadets may attend either the three-week Airborne Course, the 10½ week Ranger Course, or the 10-day Air Assault Course. Additionally, Advanced Course cadets may participate in the Cadet Troop Leader Training (CTLT), serving a two- to three-week tour with an active Army or reserve unit upon completion of Advanced Camp. In addition to the above special schools, third semester Russian 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 tendered a commission as a Second Lieutenant in the United States Army Reserve and may be required to serve on active duty, not to exceed three years. He may request that his active duty be for a period of only three months. Students who qualify as Distinguished Military Students at the end of their junior year, and maintain the prescribed academic and leadership standards through advanced camp and their senior year, can be designated as Distinguished Military Graduates of UT El Paso. Distinguished Military Graduates may apply for 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 obtainable. Following graduation, the newly commissioned officer is sent to an Orientation Course of about nine weeks to qualify him in his specific branch, and then completes his tour of active duty through a variety of challenging assignments. Delays in call to active duty are generally obtainable 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

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.

2111 Effective Communication and Leadership Skills (2-0)

An interdisciplinary approach to the development of individualized and intergroup communications in conjunction with leadership skills. Emphasis is placed on communicative skills required in both managerial and leadership positions. No military obligation.

Basic Course (MS I and II)

1101 Introduction to 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.

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.

2201 Leadership Assessment and Managerial Skills (2-1)

An integrated system of simulations designed to generate and evaluate behavior comparable to that required in leadership and managerial situations. It provides individualized and comprehensive feedback to the student wherein strengths and weaknesses in leadership traits or dimensions are identified. Further, it provides guidance regarding reinforcement or correction of those traits as appropriate. No military obligation. Prerequisite: Instructor approval.

2202 Military Skills (2-1)

A study of various military skills and professional knowledge subjects essential to a military leaders. No military obligation. Prerequisite: MS 1101 and instructor approval.

Advanced Course (MS III and IV)

3301-02 Military Science III (3-1)

A comprehensive treatment of those qualities, skills and fundamental knowledge endemic to the military profession. It addresses the role of the Army in national affairs as well as in an 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 the development of selected military skills. Prerequisites: Completion/credit for Basic Course and instructor 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. 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 instructor approval.

3401-02 Military Science IV (3-1)

An in-depth examination of the profession of arms as it relates to the military ethic and professionalism and military justice features. Extensive development of 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 instructor approval. Waiver O.

Aerospace Studies

55 Memorial Gymnasium
(915) 747-5232

CHAIRMAN: Lieutenant Colonel Terry W. Johnson

PROFESSOR: Johnson

ASSISTANT PROFESSORS: Goodwin, Laurenza, Wildman

The college Air Force Reserve Officer Training Program Curriculum 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 3½, 3, 2½, and 2 year scholarships to qualified individuals. These scholarships pay tuition, books, lab 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. Scholarship cadets in the GMC program must satisfactorily complete an English Composition course before entry into the Professional Officer's Course.

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 one semester 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 20 months. Cadets also receive payment for the summer orientation course. Two-year scholarships are available for qualified students.

Leadership Lab: LLAB 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 doctrine.

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. Flight Instruction: 14 hours. Open to qualified POC members only.

Modern Languages

226 Liberal Arts
(915) 747-5281

CHAIRMAN: Armando Armengol

PROFESSORS EMERITI: John McCarty Sharp, Jacob Ornstein-Galicia, Edgar T. Ruff, Joseph R. Smiley

PROFESSORS: D. Natalicio

ASSOCIATE PROFESSORS: Aguilar, Armengol, Bagby, Ewton, Garcia, Manley, Perez, Teschner

ASSISTANT PROFESSORS: Bailey, Beyer, Ford, Irwin, Kluck, Mellen, Nelson, Rodriguez, Scruggs

Information for New Students

FRENCH, GERMAN, RUSSIAN: Students with a knowledge of French, German or Russian should determine their placement according to the paragraph on Examinations for Placement below. Students with no knowledge of French, German or Russian should register for 4101.

SPANISH: A placement exam or a waiver is required of all students who have never taken Spanish at UTEP before. For information about when and where to take the exam or get the waiver, see the "Spanish" section of the *Modern Languages* listing in each semester's Schedule of Classes. Students who have learned to speak Spanish at home should take 4103, 4104, 3203 and 3204. Students who do not speak Spanish should take 4101, 4102, 3201 and 3202. Students unsure of their ability should take the Spanish Placement Exam.

Examinations for Placement

All students with a knowledge of French, German, or Russian, however that knowledge was acquired, who have not taken a UTEP course in the language, should take the placement exam for that language. Information about *Spanish* placement tests is printed in the UTEP Schedule of Classes. Information about *French, German or Russian* placement tests can be obtained from the Department of Modern Languages. For information about *Portuguese and Latin*, see the appropriate course listing section below.

Advanced placement and an appropriate number of credit hours will be awarded in recognition of superior performance on either the Advanced Placement examination administered by the Educational Testing Service, or the placement test offered by the Department of Modern Languages.

Students who have acquired a significant knowledge of a foreign language through high school study (at least one year of course work with good grades) are urged to take the departmental placement exam before enrolling in any UTEP course. Consult each semester's class schedule for further information. Spanish speakers who are able to converse adequately in the language must take the Spanish placement exam offered by the department before enrolling in any course. Students with no formal studies in language may sign a waiver to that effect.

Major in Modern Languages

27 semester hours, at least 18 of which must be advanced, including 3355 (SPAN 3356 for native Spanish speakers) and 3357. For Spanish majors only, at least 9 of the advanced hours must be 3400-level, and PORT 3301 or 3321 may count as 3 of the required hours. Courses 3201-02 or 3203-04 must be completed in a second language.

Teacher Certification Programs which combine the BA degree with Elementary or Secondary certification are available in French, German and Spanish. Interested students may refer to the College of Education section of this catalog and should consult with the Certification Office, College of Education.

FRENCH: 27 semester hours, at least 18 of which must be advanced (3300-3400) courses in French, including FREN 3301, 3303, 3357, 3401; 3305 and 3357 are recommended for students who are not native French speakers. Courses 3201-02 must be completed in a second language.

GERMAN: 27 semester hours, at least 18 of which must be advanced (3300-3400) courses in German, including GERM 3301, 3303, 3357, 3401; 3355 recommended for students who are not native German speakers. Courses 3201-02 must be completed in a second language.

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 or 3203-04 must be completed in a second language.

Minor in Modern Languages

The basic requirement is 18 hours in a language, at least 9 of which must be advanced (3300-3400) level, including 3355 (SPAN 3356 for native speakers) and 3357; 3320 is strongly recommended.

Liberal Arts students who wish to minor in a modern language must also satisfy the foreign language requirement of the BA degree. Two options are available:

1. The same language for both BA requirement and minor: 3201-02 is required (SPAN 3203-04 for native speakers taking Spanish) to meet the BA requirement, plus 18 hours in that language for the minor.
2. One language for the BA requirement, another for the minor: students may include 3201-02 in the minor as part of the 18-hour minor requirement.

Students from a program or college which does not have a language requirement may include 3201-02 (or 3203-04, if appropriate) in the language of the minor as part of the 18-hour minor requirement.

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.

3202 French Four (3-0)

Grammar review; reading from modern French authors. *Prerequisite:* FREN 3201.

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.

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.

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 programs and 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.

3202 German Four (3-0)

Grammar review, compositions, reading from contemporary authors. *Prerequisite:* 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.

3350 German Literature in Translation (3-0)

Readings in English translation from various periods and genres of German 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 German courses. *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 programs and courses.

Greek (GREK)**4105 Koine Greek (3-2)**

The study of the essential aspects, lexicon, morphology, and syntax of Koine Greek.

4106 Koine Greek (3-2)

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.

Portugues (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.

3301 Portuguese Literature (3-0)

An introductory survey of Portuguese literature. Selected readings from the most representative authors, including Camoes, Garret, and Eca de Queiros. This course or Portuguese 3321 may count toward the Spanish major. *Prerequisite:* Portuguese 3202 or consent of instructor.

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 or Portuguese 3301 may be counted toward the Spanish major. *Prerequisite:* Portuguese 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.

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.

3203 Spanish Three for Native Speakers (3-0)

Introduction to Spanish and Spanish American literature. Development of reading and writing skills, vocabulary building and oral expression. *Prerequisite:* SPAN 4101.

3204 Spanish Four for Native Speakers (3-0)

A continuation of Spanish 3203, with more extensive readings from modern authors. *Prerequisite:* SPAN 3203.

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 or the equivalent.

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 or the equivalent.

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 movements in the history of literature written in Spanish. Not for Spanish majors. *Prerequisite:* SPAN 3202 or 3204.

3308 Business Spanish (3-0)

Supervised practice in the composition of business letters, memos, and reports in Spanish. *Prerequisite:* SPAN 3202 or 3204 or consent of instructor.

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.

3350 Hispanic Literature in Translation (3-0)

Readings in English translation from various periods and genres of Hispanic 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 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 and development of vocabulary and pronunciation. Selected readings and written exercises designed to promote 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.

For Undergraduates and Graduates

3309 The Structure of Spanish (3-0)

Linguistic analysis of Spanish, including phonology, morphology, and syntax. Same as Linguistics 3309. *Prerequisite:* SPAN 3202 or 3204 or equivalent.

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 Spanish for Teachers (3-0)

The orthography, morphology and syntax of standard Spanish with frequent reference to dialectal variants. Attention is also paid to current theories of language acquisition. *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 Cabellero, 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 American 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.

3459 Translation (3-0)

Techniques of translation of English into Spanish and vice-versa, including instantaneous oral, literary, business, and other forms of translation. *Prerequisite:* 6 hours of advanced Spanish.

3460 Spanish American Novel (3-0)

Readings from the principal Spanish-American novelists. *Prerequisite:* 6 hours of advanced Spanish.

3461 Don Quixote (3-0)

The literary value and influence of the Quixote. 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.

3467 The Essay (3-0)

A study of the Spanish and Spanish American essay of the nineteenth and twentieth centuries: Larra, Ganivet, Rodo, Bello, Sarmiento, Marti, Sierra, Caso, Reyes and others. Conducted in Spanish. *Prerequisite:* 6 hours of advanced Spanish.

3472 Contrastive Linguistics: English/Spanish (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:* 6 hours of advanced Spanish or Linguistics

3477 Spanish Poetry (3-0)

Selected readings from the poetry of Spain including authors such as Manrique, Gongora and Lorca. *Prerequisite:* 6 hours of advanced Spanish.

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 Melten

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 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, 3492 and SPAN 3493.

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. Offered in FALL only.

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. Offered in FALL only.

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. *Prerequisite:* ENGL/LING/SPAN 3481 and 3482 or consent of instructor. May be taken concurrently with ENGL/LING/SPAN 3492. Offered in SPRING only. Course may be repeated for credit.

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. Offered in SPRING only. Course may be repeated for credit.

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.

Music

301 M Fox Fine Arts

(915) 747-5606

CHAIRPERSON: Marcia Fountain

PROFESSORS EMERITI: Olav Elling Eidbo, Richard E. Henderson, Engebret A. Thormodsgaard

PROFESSORS: Chavez, Fountain, Paul

ASSOCIATE PROFESSORS: Cardon, L. Gibson, Hufstader, Stanley, Trimble

ASSISTANT PROFESSORS: Burns, G. Gibson, Heuser, Kress, Reed, Ross, Stannard, Tel-Oren, Warren, White, Wicks

LECTURERS: Cronin, Harper, Loftin, Valdez

COMPOSER-IN-RESIDENCE: Packaies

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, or ballet as an option within the major.

GENERAL REQUIREMENTS

ENGL 3111-3112 or equivalent plus 6 hours sophomore level English;

HIST 3101-3102 or 3103-3104; POSC 3110, 3111;

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 attendance is required every semester in residence and is considered laboratory for other music courses.

OPTION REQUIREMENTS

Orchestra/Band Instruments:

Music literature and history — 12 hours

Speech — 3 hours

Theory — MUST 1111, 1112, 3113, 3114, 1211, 1212, 3213, 3214, 2315, 2411 or 2412, plus 2 additional hours;

Music Education—MUSE 3331 and 3333 or 3345;

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 (not required of students whose instrument is guitar)

Keyboard Instruments:

Music literature and history — 12 hours

Theory — MUST 1111, 1112, 3113, 3114, 1211, 1212, 3213, 3214, 2315, 2411 or 2412, plus 5 additional hours;

Music Education — MUSE 3331 and 3333 or 3345;

Major Instrument — 16 hours of MUSA 4191 and 16 of MUSA 4391;

Chamber Music — 4 hours of MUSA 1165;

Voice — 4 hours;

Piano Pedagogy — MUSA 2494;

Voice:

Music literature and history — 12 hours;

Speech — 3 hours

Theory — MUST 1111, 1112, 3113, 3114, 1211, 1212, 3213, 3214, 2315, 2411 or 2412, plus 2 additional hours;

Music Education — MUSE 3331 and 3333 or 3435;

Vocal Pedagogy — MUSA 2493;

Foreign Language — 4101, 4102 in a modern language;

Diction — 8 hours

Individual Instruction — 12 hours of MUSA 3191 and 12 of MUSA 3391;

Group Instruction — 4 hours of Music Theatre Workshop;

Piano — 8 semester hours;

Ballet:

Speech — 3 hours, and DRAM 3213;

Music literature and history — MUSL 2121, 2122, 3124, 2343, and 2344;

Theory — 6 hours;

Music Education — MUSE 3435 and 3444;

Foreign Language — 4101, 4102 in a modern language, French preferred;

Technique — MUSB 3141, 3142, 3343, 3344, 3241, 3242, 3341, 3334, 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, orchestra or keyboard as the major instrument.

GENERAL REQUIREMENTS

ENGL 3111-3112 or equivalent;

HIST 3103-3102 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, plus 21 additional 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 attendance is required every semester in residence and is considered laboratory for other music courses.

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. Students should consult with the chairperson of the Music department and the Certification Officer, College of Education.

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 or 3103-3104;
 POSC 3110, 3111;
 PHYS 3106, MATH 3106, and CS 3110;
 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. Recital attendance is required every semester in residence and is considered laboratory for other music courses.

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;
 4 semester of MUSA 1165 (guitar students take MUSA 1194);
 8 semester hours of Pedagogy: MUSA 1167, 1168, 1175, 1176, 1177, 1178, 2179;
 6 additional hours Applied Music. Guitar and keyboard students take 3 semesters of secondary applied lessons in an orchestra or band instrument, and they must participate in the major instrument ensemble for 4 semesters, in addition to the regular ensemble requirement.

REQUIRED FOR CHORAL PLAN:

Theory — MUST 2411;
 Applied — MUSA 2493;
 Diction — MUSA 2151, 2152, 2251, 2252;
 6 additional hours Applied Music. Guitar and keyboard students take 6 hours of voice, and they must participate in the major vocal ensemble for 4 semesters, in addition to the regular ensemble requirement.

PROFESSIONAL STUDIES:

EDPC 3301, ELED 3302; RED 3340 or 3342; SCED 3317;
 SPED 3425; TED 1201, 9497.

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 Goldloggers (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 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 (3-0)**2172 Piano Class (3-0)**

Prerequisite: MUSA 2171 or placement.

2271 Piano Class (3-0)

Prerequisite: MUSA 2172 or placement.

2272 Piano Class (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

2353, 2354 Music Theatre Workshop (2-0)

Continuation of 2254. *Prerequisites:* Junior standing, permission of the instructor, and preceding course where listed.

2375 Music Recording and Audio Techniques (2-0)

A study of the function of microphones, mixers and other audioprocessors, tape recorders and loud speaker systems. Practical experience in the sound reinforcement and recording of musical productions. *Prerequisite:* Permission of department chairperson. May be repeated once for credit.

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.

2494 Piano Pedagogy and Literature (2-1)

Psychology and art of teaching piano in group piano classes and/or in private lessons. Study and analysis of piano literature appropriate for all graded levels. *Prerequisites:* Music 2391 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.

2191 Individual Instruction

For lower-level majors in voice, theory, music education, and other qualified students. One thirty-minute lesson per week. *Prerequisite:* Preceding course or placement. Fine Arts Fee: \$20.

3191 Individual Instruction

For lower-level majors in voice, theory, music education, and other qualified students. One thirty-minute lesson per week. *Prerequisite:* Preceding course or placement. Fine Arts Fee: \$35.

2391 Individual Instruction

For upper-level majors in voice, theory, music education, and other qualified students. One thirty-minute lesson per week. *Prerequisite:* Preceding course or placement. Fine Arts Fee: \$20.

3391 Individual Instruction

For upper-level majors in voice, theory, music education, and other qualified students. Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* Preceding course or placement. Fine Arts Fee: \$35.

4191 Individual Instruction

For lower-level instrumental majors in performance. Two thirty-minute lessons and fifteen practice hours per week. Recital participation. *Prerequisite:* Preceding course or placement. Fine Arts Fee: \$35.

4391 Individual Instruction

For upper-level majors in voice, theory, music education, and other qualified students. Two-thirty minute lessons and fifteen practice hours per week. Recital Participation. *Prerequisite:* Preceding course or placement. 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

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 are studied. Special attention is given to techniques and methods used in teaching public school music. *Prerequisites:* MUST 3214 and junior standing.

3333 Advanced Conducting Techniques (3-0)

Continued study of conducting and methods begun in MUSE 3331. Special attention is given to techniques and methods used in teaching public school music. *Prerequisite:* MUSE 3331 or permission of department chairman.

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.

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 (2-0)

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.

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 Music 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)

A study of electronic music techniques and the voltage control synthesizer. Laboratory experience in synthesizing and tape procession of audio signals. *Prerequisite:* Permission of instructor.

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.

For Undergraduates and Graduates

2311, 2312 Counterpoint (2-0)

Survey of sixteenth and eighteenth century contrapuntal techniques as exemplified in Palestrina and Bach. Introduction to composition. *Prerequisites:* MUST 3213, 3214.

3313-3314 Composition (3-0)

Modern styles of composition are integrated with traditional theory and composition in a practical course covering the smaller forms in vocal and instrumental music. *Prerequisites:* MUST 3213, 3214 or equivalent.

2315, 2316 Form and Analysis (2-0)

Detailed study of the logic of musical structure as exemplified in representative works beginning with song forms and including the larger forms. *Prerequisites:* MUST 3213, 3214.

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.

3413-3414 Advanced Composition (3-0)

A continuation of MUST 2313, 2314 with emphasis upon modern music and larger forms. *Prerequisites:* MUST 2313, 2314.

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) 747-5213

CHAIRMAN: Randolph H. Whitworth

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, multi-valued 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.

3401 Philosophy of Logic and Language (3-0)

A seminar on the development and philosophy of logic and language and current topics in logic and linguistics. May be repeated when topics vary.

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.

3403 Problems in the Philosophy of Science (3-0)

A detailed analysis of a small number of selected problems in the philosophy of science. May be repeated when course content varies.

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.

3454 Philosophy of History (3-0)

An examination of attempts to find recurring patterns and laws in the course of history as in Augustine, Vico, Hegel, Marx, Toynbee and Spengler. May also include an examination of historical narrative in order to compare or contrast historical with scientific explanation.

See the *Graduate Studies Catalog* for graduate programs and courses.

Political Science

210 Benedict Hall
(915) 747-5227/5228

CHAIRMAN: Z. Anthony Kruszewski

PROFESSORS EMERITI: Samuel Dale Myres, Joseph Malchus Ray

PROFESSORS: Agor, Bath, Beasley, Graves, Kruszewski, Neighbor, Segal, Straus

ASSOCIATE PROFESSORS: Peterson, Price, Staudt, Villarreal

ASSISTANT PROFESSORS: Barilleaux, Hovel, Webking

ADJUNCT ASSISTANT PROFESSOR: Valencia

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 four 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, taking HIST 3332 and 3333; RUSS 3301 and 3303 or 3320, SOCI 3425, and HIST 3369 or 3374.
3. Satisfy the language requirement with RUSS 3201 and 3202.
4. Satisfy the Social Science requirement with ECON 3395 and either GEOG 3110 or 3411.
5. Satisfy the Literature requirement with ENGL 3381, 3382, or RUSS 3350.
6. Satisfy the Cultural Heritage requirement with HIST 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.

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.

3227 Politics in the States (3-0)

An examination of state, regional, and non-urban local politics in the United States.

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 The Legislative Process (3-0)

A study of the legislative system, organization, the procedures; analysis of recruitment patterns and the nature of the relation of the legislature to the rest of the political system.

3330 Public Opinion and Propaganda (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.

PUBLIC LAW**3328 Constitutional Law I (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.

3332 Constitutional Law II (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.

3329 Law and Society (3-0)

An analysis of the role of law in society and the causes and consequences of judicial behavior.

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 socio-cultural relations between the Latin American states.

3411 Political Geography (3-0)

Study of human activities and the environment in territorial context; evolution, structure, behavior and function of politically organized territories; problems of internal coherence and external relations; analysis of the political inter-relationships in the study of the environment.

3431 Advanced Studies In International Relations (3-0)

Theory application and theory verification in the analysis of selected problems in contemporary international relations.

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.

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.

3433 Latin American Political Thought (3-0)

A study of representative thinkers who have influenced political development in Latin America.

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**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**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, Himelstein
ASSOCIATE PROFESSORS: Barrientos, Hosch, Miller, Moss, Whitworth
ASSISTANT PROFESSORS: Allen, Lucker, 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, 3330, 3348, 3411, 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 (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 semester 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.

3201 Child Psychology (3-0)

Principles of growth and development from infancy to adolescence.

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.

3203 Cross-cultural Psychology (3-0)

A review of the methodology and content of research on human behavior across cultures. Topics include studies on social verbal and non-verbal behavior and behavioral contingencies conducted in other cultures, which include those derived from Hispanic, African, European, and Asian origins.

3204 Psychology of Adjustment (3-0)

A study of the individual's psychological adjustment to life, including childhood, adolescence, and adulthood. 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.

2321 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.

1321 Laboratory for Experimental Psychology: Learning (0-2)

Laboratory Fee: \$3.

2322 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.

1322 Laboratory for Experimental Psychology: Sensation and Perception (0-2)

Laboratory Fee: \$3

3330 Perception (3-0)

A study of the major theoretical changes and experimental findings concerning perception and sensory processes. Emphasis on vision and audition. *Prerequisite:* PSYC 2321-1321 or 2322-1322.

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. Laboratory Fee: \$3.

3410 Clinical Psychology (3-0)

A study of clinical problems, case study methods and discussion of psychological tests used in common clinical situations.

3411 Physiological Psychology (2-2)

Basic psychological processes in relation to structure and function. *Prerequisite:* Senior standing. Background in physiology and biochemistry recommended. Laboratory Fee: \$3.

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.

3415 Experimental Psychology: Social, Personality and Clinical (3-0)

Study of experimental and quasi-experimental designs, high risk methods, and evaluation research.

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.

3420 Learning Theory (3-0)

A review of the main theories, systems, and models of classical conditioning and instrumental learning. Emphasis is given to theoretical and descriptive behaviorism.

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.

3442 Comparative Psychology (3-0)

A study of animal behavior with emphasis on recent contributions of ethologists and psychologists. *Prerequisite:* PSYC 2321-1321 or 6 hours of biological sciences.

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.

3454 Seminar in Psychology (3-0)

Topic to be discussed will be selected. May be repeated with different instructors. *Prerequisite:* Permission of instructor.

See the *Graduate Studies Catalog* for graduate programs and courses.

Religion

208B Graham Hall
(915) 747-5326

CHAIRMAN: Howard Hallmark

ADJUNCT ASSISTANT PROFESSORS: Albin, Arroyo, Berman, Hallmark, Romero, Taylor, Williams

Credit toward University degrees is given for Religion courses offered under the following regulations established by the Board of Regents: Students enrolled in the courses for credit (1) may earn no more than twelve semester hours in Religion on any bachelor's degree; (2) are subject to the regulations of the catalog on the amount of work which may be carried.

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/RELI 3359; HIST/RELI 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 Dr. Kenton Clymer, Chairman, Department of History, 747-5508.

Religion (RELI)

For Undergraduate Credit Only

Suggested prerequisite: Junior standing for all 3300 level courses.

1101 Introduction to the Bible (1-0)

A course to provide the beginning Bible student with a general introduction to the Bible. Those who have had 3101 or 3104 may not take this course.

3101 Survey of the Old Testament (3-0)

A comprehensive study of the entire Old Testament.

3104 Survey of the New Testament (3-0)

A comprehensive study of the entire New Testament.

3106 New Testament and Koine Greek (3-0)

The inductive study of the Greek text of the Gospel according to John, with emphasis upon its relation to the philosophies, religions and history of the first century. Relevant passages from such authors as Plato, Philo, the Septuagint and the Hermetica will also be read in the original.

3107 New Testament and Koine Greek (3-0)

A continuation of RELI 3106. *Prerequisite:* RELI 3106.

3108 Introduction to Judaism (3-0)

A discussion of the various life-styles associated with Judaism in the United States and Israel. Material of a historic and social nature will be shared by the class. The contribution of the religion and culture of Judaism to the culture of the United States will be explored. All material will be in English.

3109 The Jewish Bible (3-0)

A survey of the Books of the Bible with emphasis upon a Rabbinic Jewish perspective. The thinking of philosophers such as Maimonides, and Biblical exegetes such as Rashi, will be pursued. The derivation of the Mitzvah system inherent in the Bible will be elucidated.

3201 The Life of Paul (3-0)

An historical study of the life and missionary endeavors of the Apostle Paul. *Prerequisite:* RELI 3104 or sophomore standing.

3202 The Life of Christ (3-0)

An historical study of the life and teachings of Christ. *Prerequisite:* RELI 3104 or sophomore standing.

For Undergraduates and Graduates

3303 Archeology 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. *Prerequisite:* RELI 3202 or junior standing.

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 or RELI 3101 or 3104.

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 (3-0)

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.

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.

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.

3450 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

DIRECTOR: Felipe Peralta

ASSISTANT PROFESSORS: Peralta, Rosenberg, Zirl

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 service 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 cycles.

3203 Research Methods in Social Work (3-0)

To obtain a working knowledge of various research methods that would enable the student to utilize those methods 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 3275.

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. *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 implication for service delivery, international considerations for service delivery, cultural pluralist considerations for service delivery, community organization Chicano style 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 general survey of the major methods employed by social workers in the social welfare field to help individuals, groups and communities. *Prerequisite:* SOWK 3201.

3377 Methods of Social Work Intervention II (3-0)

Human behaviors and their application to social work with emphasis on poverty and minority groups.

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.

3450 Social Work with Families (3-0)

Emphasis is placed on the theories, concepts and techniques of social work with and services to families based on preventative and residual perspectives. This is an elective course for social work majors. *Prerequisites:* Senior standing, completion of all courses required for field placement, or approval of Program 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 C. Daudistel

PROFESSORS: Rivera, Stoddard

ASSOCIATE PROFESSOR EMERITUS: Paul Wershub Goodman

ASSOCIATE PROFESSORS: Daudistel, Eyde, Gerald, Hedderson

ASSISTANT PROFESSORS: I. Brown, S. Brown, Foster, Young, Zirl

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, 3111, and 3401. ANTH 3302 may be counted as a Sociology course for this purpose. 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 3302 or 3480. ANTH 3216, 3217, and 3220 are strongly recommended; also, LING 3354 may be counted as an Anthropology course. 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. ANTH 3302 may be counted as a Sociology course.

Minor in Anthropology

18 semester hours of Anthropology, of which 9 must be advanced level, including ANTH 3101 and 3102, plus either 3101, 3103 or 3304 and 3302 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.

3302 Social Legislation (3-0)

Study of the relationships between law, social control, social institutions and social change. Issues in criminal and administrative law, jurisprudence and public morality will be analyzed from a sociological perspective.

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.

3311 Methods of Research (3-0)

Basic procedure and methodology of sociology as applied by the profession to various areas of social investigation.

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 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.

3340 Military and Industrial Organization (3-0)

Analysis of military and industrial structure, command and communication systems; dynamic changes in technological and recruitment functions; relations with community and unions, leisure and manpower training.

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.

3349 The Family as a Social Institution (3-0)

A study of the development of the family as a social institution. Includes the study of family in various societies, emphasizing our own.

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.

3355 Contemporary Sociological Theory (3-0)

Study of the major theories in contemporary sociology and of their historical development.

3357 Sociolinguistics (3-0)

Language variables and sociological correlates, a review of current research, theories and applications.

3360 Institutions and Cultures of Latin America (3-0)

Survey of social institutions, the diverse cultures, and the processes of social change in Latin America.

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 organizational 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.

3440 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.

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 of social systems.

See the *Graduate Studies Catalog* for graduate programs and courses.

Anthropology (ANTH)

For Undergraduates Only

3201 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.

3205 Chicanos and Their Culture (3-0)

A survey of the history, economics, sociology, politics, demography, literature and thought of Mexican Americans as manifestations of their culture. Introduction to specialized study in the field.

3210 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.

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 fields 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. *Recommended Background:* ANTH 3210.

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.

3302 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. May be counted for credit in Sociology.

3303 Ecological Anthropology (3-0)

Uses of ecological principles and models in anthropological description and explanation. Human societies as parts of larger eco-systems. 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.

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.

3313 Indians of Mexico (3-0)

A survey of the forms of technology, social organization and culture of post-conquest and contemporary Indians of Mexico and Central America. *Recommended Background:* ANTH 3102.

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 American, 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.

3322 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.

3336 Multi-Cultural Society of the Southwest (3-0)

A comparison of values, institution and ethnic groups of the American Southwest, emphasizing cultural variation and fusion along the U.S.-Mexican border region. May be counted for credit in Sociology.

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.

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.

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.





**Eileen M. Jacobi, Dean
John M. Lantz, Assistant Dean
Graduate Program and Allied Health
Elizabeth Monniger, Assistant Dean
Undergraduate Program**

**1101 North Campbell
(915) 747-5880**

**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 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 Allied Health Sciences, 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 College also offers programs in conjunction with the Texas Tech University Health Sciences Center School of Allied Health leading to Bachelor of Science degrees in Physical Therapy and Occupational Therapy.

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 Nursing/Medical Library, with a collection of over 15,000 volumes on health care, is a branch of the UT El Paso library system.

The El Paso-Ciudad Juarez international border community, with a population of more than 1½ 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.

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 Admissions and Records informed of his current (1) local address, (2) telephone number, or where he 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; and
4. To make arrangements for completion of all work and to meet the requirements for removal of incomplete grades;
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 \$125. Cost of books and supplies is approximately \$600.

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

The Alpha Delta Chapter of Sigma Theta Tau, the only national honor society of nursing, was chartered at The University of Texas on May 25, 1963. Delta Kappa Chapter 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 Financial Aid Office.

Funds are provided from the Nursing Student Loan Program for low-cost loans to nursing students, according to need, eligibility, and availability of funds. The maximum total for one student for any one academic year is \$2,500 and a total of \$10,000 is the maximum amount which may be awarded to any one student for all the years in school.

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 Airforce 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; it should include 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. Applications for the upper division are available through the Office of Admission and Evaluation and may 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.

REQUIREMENTS FOR ENROLLMENT IN UPPER-DIVISION COURSES

Certification which is valid throughout the semester, in first-aid and cardiopulmonary resuscitation (CPR), 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 \$200,000 limit each claim and \$600,000 limit in the aggregate.

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 Academic 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 course 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 nursing course for credit in which a grade of C or higher has already been earned.

A faculty member may drop a student from a course 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 curricular pattern 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 (9 hours)

Nursing 3250, 3251, 3313
 Electives (3 hours)

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 electives
 Total for the Degree137 hours

SUGGESTED SCHEDULE

FRESHMAN YEAR

1st Semester

BIOL 3105 General Biology	3
BIOL 1107 Study of Life I	1
ENGL 3111 English Composition	3
PSYC 3101 Introduction to Psychology	3
MATH 3105 Intermediate Algebra	3
(if required as Chemistry prerequisite)	
HIST 3101 U.S. History to 1865 or Hist 3103, American 1500 to 1815	3
	16

2nd Semester

BIOL 3106 General Biology	3
BIOL 1108 Study of Life II	1
ENGL 3112 Research & Critical Writing	3
SOCI 3101 Principles of Sociology	3
Free Electives	3
HIST 3102 U.S. History Since 1865 or Hist 3104, American, 1815 to present	3
	16

SOPHOMORE YEAR

1st Semester

BIOL 4211 Biology of Human Body	4
BIOL 1212 Human Physiology	1
PSYC 3210 Developmental Psychology	3
HE 3202 Nutrition Education	3
POSC 3110 American Government & Politics	3
CHEM* 4107 Introductory Chemistry	4
	18

2nd Semester

MICR 3230 Microorganisms & Disease	3
PSYC 3103 Statistical Methods	3
POSC 3111 American Government & Politics	3
CHEM 4108 Introductory Chemistry	4
NURS 3251 Nursing: Historical, Contemporary & Future Perspectives	3
	16

Summer Sessions

NURS 3250 Conceptual Base for Nursing Practice	3
NURS 3313 Human Pathophysiology	3

JUNIOR YEAR

1st Semester

NURS 3302 Health Assessment	3
NURS 7302 Theories, Principles & Skills Basic to Nursing	7
NURS 7303 Nursing in Maintenance & Promotion of Health	7
	17

2nd Semester

NURS 7370 Nursing Care of Individuals & Families Experiencing Minor Health Problems	7
NURS 7371 Nursing Care of the Individual & Family During the Childbearing Period	7
**Elective in Nursing	3
	17

SENIOR YEAR

1st Semester

NURS 7410 Nursing Care of Individuals & Families Experiencing Major Health Problems	7
NURS 7411 Nursing of People in Crisis	7
**Elective in Nursing	3
	17

2nd Semester

NURS 7471 Nursing Leadership & Management	7
NURS 7472 Primary Care Nursing	7
NURS 3470 Health Care-Nursing Care: Portents and Challenges	3
	17

*Chemistry 3105-3106 and 2106 may be substituted for this sequence.
 **Electives may be taken in summer sessions.

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.

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. *Prerequisite:* Admission to the upper-division; concurrent with NURS 3302 Laboratory Fee: \$4.

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: \$4.

7370 Nursing Care of Individuals and Families Experiencing Minor Health Problems (3-8)

Application of the nursing process to assess 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: \$4.

7371 Nursing Care of the Individual and Family During the Childbearing 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: \$4.

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: \$4.

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: \$4.

3470 Health Care — Nursing Care: Portents and Challenges (3-0)

Analyzes 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: \$4.

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: \$4.

Elective Courses**3203 Health Maintenance (3-0)**

Focus on personal health care maintenance activities in today's society including strategies for preventing common health problems, identification of high risk factors antecedent to common health problems and evaluation of health status as related to basic assessment and self-care skills. Open to all students. May not be counted for credit in the nursing major.

1380-3380 Selected Topics in Nursing (1-0, 2-0, 3-0)

Selected topics of current interest. May be repeated when topic varies.

3305, 6305 Nursing Care of Surgical Patients (3-0) (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. Clinical Practicum in 6305. *Prerequisite:* NURS 7370-7371 or consent of instructor. Laboratory Fee: \$4. for NURS 6305.

3307, 6307 Pharmacodynamics in Nursing (3-0), (3-6)

Focuses on knowledge of pharmacology and chemotherapeutics. In addition, opportunity is provided for the development of competency in the preparation and administration of medications. Clinical practicum in a hospital setting. *Prerequisites:* NURS 7302-7303. Laboratory Fee for 6307: \$4.

3310, 6310 Nursing Care of Ill Children (3-0), (3-6)

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. Clinical Practicum in 6310. *Prerequisites:* NURS 7303 or consent of the instructor. Laboratory Fee for 6310: \$4.

3317, 6317 Nursing Care of Individuals with Major Genitourinary Problems (3-0), (3-6)

An opportunity to gain further knowledge in the nursing care of the individual experiencing disorder of the genitourinary tract and problems of human sexuality are discussed. Emphasis is on pathological state and the psychosocial impact on the individual, family and society. Clinical Practicum in 6317. *Prerequisites:* NURS 7370, 7371. Laboratory Fee for 6317: \$4.

3318, 6318 Gerontological Nursing (3-0), (3-6)

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. Clinical Practicum in 6318. *Prerequisite:* NURS 7303. Laboratory Fee for 6318: \$4.

3319, 6319 Transcultural Nursing (3-0), (3-6)

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. Clinical Practicum in 6319. Laboratory Fee for 6319: \$4.

3320, 6320 Nursing Care of High Risk Individuals During the Childbearing Period (3-0), (3-6)

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. Clinical Practicum in 6320. *Prerequisites:* NURS 7370-7371. Laboratory Fee for 6320: \$4.

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.

3401, 6401 Nursing Process: Care of the Acutely Ill Patient in Crisis (3-0), (3-6)

An opportunity to gain further nursing knowledge and skill in the care of acutely ill patients in a critical care setting. The focus of study will be on the patient with circulatory and respiratory pathophysiology and the psychosocial implications for the individual and family. Clinical Practicum in 6401. *Prerequisite:* NURS 7411 or consent of instructor. Laboratory Fee for 6401: \$4.

3405, 6405 Emergency Nursing Care (3-0), (3-6)

An opportunity to gain further nursing knowledge and skills in the care of patients who have injuries or illnesses of an emergency nature. Clinical practicum provides experience in the assessment, care and evaluation of patients in acute distress and/or life-threatening situations. *Prerequisite:* NURS 7411 or consent of the instructor. Laboratory Fee for 6405: \$4.

3410, 6410 Therapeutic Nursing Strategies for Mental Health (3-0), (3-6)

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. Clinical Practicum in 6410. *Prerequisite:* NURS 7411 or consent of the instructor. Laboratory Fee for 6410: \$4.

3419, 6419 Nursing to Promote Psychosocial Adaptation (3-0), (3-6)

The focus is on the assessment of adaptive behaviors and implementation of therapeutic nursing intervention to assist individuals and families in the development, maintenance and enhancement of mental health. Clinical Practicum in 6419. *Prerequisite:* NURS 7303. Laboratory Fee for 6419: \$4.

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: \$4.

1315-6315 Independent Study**1415-6415 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 accom-

plished 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 are the Bachelor of Science in Allied Health Sciences, Bachelor of Science in Medical Technology, Bachelor of Science in Speech, Hearing and Language Disorders, and two coordinated programs in cooperation with the Texas Tech Health Sciences Center: Bachelor of Science in Physical Therapy and Bachelor of Science in Occupational Therapy.

Bachelor of Science in Allied Health Sciences

This program provides 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. 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.

The curriculum builds upon the previous education of the students by allowing up to 60 semester hours of credit earned during the student's associate degree program to be counted toward meeting baccalaureate degree requirements. The eligible allied health fields include Radiology, Medical Records, Respiratory Care, Dental Hygiene, and Emergency Technician. Licensed graduates from 2 and 3 year nursing programs are excluded from this program.

DEGREE REQUIREMENTS (133 semester hours)

Professional Foundations (40 hours) Allied Health specialty courses from an associate degree program.

General Foundations (28 hours)

- *English 3111-3112
- *History 3101-3102 or 3103-3104
- *Political Science 3110-3111
- Mathematics 3280, 1282
- *6 hours of electives

Life and Physical Sciences (32 hours)

- *3 hours of Algebra
- *8 hours of Biology
- *8 hours of Chemistry
- *4 hours of Microbiology
- 9 hours of electives

Allied Health Core (18 hours)

- Health Education 3301, 3404, 3405
- Allied Health Sciences 3311
- Sociology 3362
- Nursing 3380

Area of Concentration (15 hours) Students will choose one of the following:

- Allied Health Administration —
 - Management 3300, 3310
 - Accounting 3309
 - Allied Health Sciences 3400, 3401
- Allied Health Education —
 - Allied Health Sciences 3402, 3410, 3411, 3412
 - Introduction to Educational Psychology 3301

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.

3311 Infection Control in Health Care Facilities (3-0)

This course provides the health care professional with an 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.

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.

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.

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 and treatment of diseases. They utilize sophisticated techniques, both automated and manual, to ensure the quality of their work.

The University of Texas at El Paso's Medical Technology Program is fully approved by the Committee on Allied Health Education and accredited by the American Medical Association as recommended by the National Accrediting Agency for Clinical Laboratory Sciences.

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.

The program of studies consists of 60 credit hours of prescribed course work taken in a regionally-accredited college or university. 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. An additional two years of upper-division course work is taken at The University of Texas at El Paso. Students should submit an application for upper-division admission after 30 hours of academic courses have been completed.

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. Students who

fail upper-division Medical Technology courses must petition to repeat the failed courses.

As a professional, the Medical Technologist must exhibit a commitment to the welfare of patients. The faculty in the program reserve the right to refuse the opportunity to 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.

The faculty-student ratio in the clinical practicum makes it impossible for a faculty member to be present at all times in the clinical setting. It is therefore imperative that each student assume the responsibility to prepare for the practicum. Each student is expected to check with the clinical faculty member if in doubt of a test or procedure.

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 American Society of Medical Technologists, and if passed, graduates may use CLS (Clinical Laboratory Scientist) after their name.

Degree Requirements (135 semester hours)

General Courses (35 hours)

- English 3111-3112 plus 3 hours sophomore English
- History 3101-3102 or 3103-3104
- Political Science 3110-3111
- Mathematics 3280, 1282
- Speech 3101 or 3102
- 7 hours of electives

Natural and Physical Sciences (41 hours)

- Biology 3105-1107, 3106-1108, 3214-1215, 4211-1212
- Chemistry 3105, 3106-2106, 3324-1324, 3325-1325
- Microbiology 3240-1241
- Mathematics 4110 or equivalent

Behavioral Sciences (9 hours)

- Psychology 3101, 3210
- Sociology 3101

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

SUGGESTED SCHEDULE

FRESHMAN YEAR

1st Semester	
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
MATH 4110 Pre-calculus	4
POSC 3110 American Government	3
	<u>17</u>

2nd Semester	
BIOL 3106 General Biology	3
BIOL 1108 Topics in Study of Life II	1
CHEM 3106 General Chemistry	3
CHEM 2106 Laboratory for Chemistry 3106	2
ENGL 3112 Research and Critical Writing	3
HIST 3101 History of the U.S.	3
	<u>15</u>

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SOPHOMORE YEAR

1st Semester	
BIOL 4211 Human Anatomy	4
BIOL 1212 Physiology Laboratory	1
CHEM 3324 Organic Chemistry	3
CHEM 1324 Laboratory for Chemistry 3324	1
ENGL 3213, 3214, 3215, 3216, or 3218	3
POSC 3111 American Government	3
	<u>15</u>

2nd Semester	
MICR 3240 General Microbiology	3
MICR 1241 Laboratory for 3240	1
CHEM 3325 Organic Chemistry	3
CHEM 1325 Laboratory for 3325	1
SPCH 3101 or 3102 Public Speaking	3
HIST 3102 History of U.S.	3
	<u>14</u>

JUNIOR YEAR

1st Semester	
BIOL 3214 Functional Biology	3
BIOL 1215 Laboratory for 3214	1
MEDT 3301 Immunology for Medical Technologists	3
PSYC 3101 Introduction to Psychology	3
MATH 3280 Statistical Methods	3
MATH 1282 Laboratory for 3280	1
	<u>14</u>

2nd Semester	
MEDT 4301 Clinical Chemistry	4
MEDT 2311 Basic Hematology/Coagulation	2
PSYC 3210 Life Cycle Development	3
MEDT 1306 Serology	1
SOCI 3101 Principles of Sociology	3
NURS 3313 Human Pathophysiology	3
	<u>16</u>

SUMMER SESSION

1st Term	
MEDT 3403 Coagulation/Hematology Applications	3
MEDT 3401 Medical Technology Laboratory Skills I	3
	<u>6</u>

2nd Term	
MEDT 3410 Immunohematological Applications	3
MEDT 3402 Medical Technology Laboratory Skills II	3
	<u>6</u>

SENIOR YEAR

1st Semester	
MEDT 7406 Analysis Techniques I	7
AHS 3400 Supervisory Techniques in Allied Health	3
AHS 3411 Clinical Education for Allied Health	3
	<u>13</u>

2nd Semester	
MEDT 7407 Analysis Techniques II	7
MEDT 4408 Chemistry Applications	4
MEDT 1414 Clinical/Pathology Seminar	1
	<u>12</u>

Total Semester Hours.....135

Note: Course work in organic chemistry 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)

The study of specific types of cells that secrete immunoglobulins and lymphokines and their interactions with macrophages. *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)

Laboratory hematological principles, including normal and abnormal cellular elements, hemoglobinopathies, and blood coagulation principles. *Prerequisites:* BIOL 4211/1212, CHEM 3325, and MEDT 3301.

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. *Prerequisite:* MEDT 3401, 3403 and concurrent enrollment in MEDT 3410.

3403 Hematology-Coagulation Applications (2-3)

This course covers hematopoiesis, general principles of normal and abnormal cellular elements, hemoglobins and blood dyscrasias which are indicated by laboratory results; blood coagulation and methodologies for detecting coagulation disorders are discussed. Applications in clinical laboratory include practicum.

4408 Chemistry Applications (1-9)

This course provides theory and practicum in automated laboratory procedures for quantification of the chemical constituents of blood and other body materials. The principles of quality control, instrumentation, and radioisotopic, titrimetric, colorimetric, spectrophotometric and fluorometric procedures are included.

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.

1490-6490 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 courses in Education, including student teaching (TED 9499), in order to be certified in Speech-Language Therapy by the Texas Education Agency. 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 6441), 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 (132 semester hours, 60 of which must be advanced level)

Academic Core Courses (71 hours)

English 3111 (or 6111), 3112, 3303, 3359

History 3101-3102 or 3103-3104

Political Science 3110-3111

Speech 3101 or 3102 or 3103-1103

Psychology 3101, 3103 and 3210

Linguistics 3220

6 hours of electives selected from Anthropology, Economics, Linguistics, Political Science, Psychology, Sociology, Social Work, or Nursing

6-8 hours, or two semesters, of a foreign language or American Sign Language

Biology 3105-1107, 3106-1108

Mathematics 3106

6 hours of electives from the natural sciences and/or mathematics

Computer Science 3110

Professional Core Courses (40 hours)

SHLD 1110, 3110, 3210, 3312, 3313, 3314, 3315, 3316, 3317, 3318, 3409, 3410, and 6441.

Plan I Teacher Certification in Speech-Language Therapy;

requirements include: TED 1201, 9499; ELED 3307; EDPC 3301; RED 3340; SPED 3321, 3425; 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. Students interested in this program should consult with the Certification Officer, College of Education.

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.

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 Clinical Practicum Skills Development (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 spectrography 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 the 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 the bachelor's degree. *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.

3465 Identification Audiometry (3-0)

Study of hearing screening methods which are applicable to educational and institutional settings. *Prerequisite:* SHLD 3409 or permission of instructor.

3467 Introduction of Hearing Aids (3-0)

Orientation to amplification for the hearing impaired. Prerequisite: SHLD 3409 or permission of instructor.

**Bachelor of Science in Physical Therapy
Bachelor of Science in Occupational Therapy**

There two programs are coordinated between The University of Texas at El Paso and the Texas Tech University Health Sciences Center, School of Allied Health. Qualified students are admitted to the coordinated program and, upon successful completion of the designated courses at UT El Paso, are eligible to progress into the professional portion of the program at Texas Tech University without loss of credit.

LOWER-DIVISION COURSE REQUIREMENTS:

Physical Therapy
English 3111-3112

History 3101-3102 or 3103-3104
Political Science 3110-3111
Biology 3105-1107, 3106-1108, 4211-1212
Mathematics 3105, 3106
Chemistry 4107-4108
Physics 4103-4104
Psychology 3101, 3206, 3210
Computer Information Systems 3225
2 hours of Physical Education or the equivalent
3 hours of general electives
Occupational Therapy
English 3111-3112
History 3101-3102 or 3103-3104
Political Science 3110-3111
Biology 3105-1107, 3106-1108, 4211-1212
Mathematics 3105, 3106
Chemistry 4107-4108
Physics 4103
Psychology 3101, 3206, and 3210 or 3212
Sociology 3101, plus 3 elective hours
2 hours of Physical Education or the equivalent



**Biological Sciences
Chemistry
Geological Sciences
Mathematical Sciences
Physics**

**William C. Herndon, Dean
William C. Cornell, Assistant Dean**

**Bell Hall 100
(915) 747-5536**

**The College of
SCIENCE**

The College of Science consists of the Departments of Biological Sciences, Chemistry, Geological Sciences, Mathematical Sciences and Physics.

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.

The 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.

Departmentals Honors Programs

The Department 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. Mathematics 4111 and 3212; or (if specified by the departments) Mathematics 4111, 3280, 1282 and either Mathematics 3281 or Computer Science 3120.
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 Linguistics 3104, 5110, 3111, 2111, 3112 and 2112 for English 3111 and 3112. A maximum of 10 credit hours of freshman level English or Linguistics 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. option 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.

11. Specific departmental requirements (listed with departmental offerings) may extend the general requirements.

Major Fields

The College of Science offers B.S. degrees in the following disciplines: Biology, Chemistry, Geography, Geology, Geophysics, Mathematics, Microbiology, Physics, and Psychology. 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).

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, Occupational Therapy, or Physical Therapy) 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 supplementary advising from the Office of Medical-Dental Preprofessional Advising (Bell Hall 111). 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
Math (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
Math (Calculus)	3/4
English	3
History of the U.S. American Government	3

Geological Sciences

GEOGRAPHY

Fall Semester	Hrs.
Physical Geography	4
Mathematics (Pre-Calculus*)	4
English	3
History or Political Sci	3
Elective	3

Spring Semester	Hrs.
Cultural Geography	3
Mathematics (Calculus or Statistics)	4/3
English	3
History or Political Sci	3
Elective	3

GEOLOGY

Fall Semester	Hrs.
Geology	4
Mathematics (Pre-Calculus*)	4
English	3
History or Political Science	3

Spring Semester	Hrs.
Geology	4
Calculus	3/4
English	3
Chemistry	3
Electives	3

GEOPHYSICS

Fall Semester	Hrs.
Geology	4
Mathematics (Pre-Calculus*)	4
English	3
History or Political Science	3

Spring Semester	Hrs.
Geology	4
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.
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 Composition	3
American Government	3
Electives	0/3

Spring Semester	Hrs.
Physics Lab II	1
Physics	4
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) 747-5164

CHAIRMAN: Albert G. Canaris

PROFESSORS EMERITI: Mary Eleanor Duke, John Simeon Williams

PROFESSORS: Bristol, Canaris, Harris, Metcalf, Robertstad, Webb, Zajic

ASSOCIATE PROFESSOR EMERITUS: Peter Stanley Chrapliwy

ASSOCIATE PROFESSORS: Ellzey, Freeman, Goldstein, Hunter, Jones, Rael, Reid, Worthington

ASSISTANT PROFESSORS: Arenaz, Redetzke, Salo

ADJUNCT ASSOCIATE PROFESSORS: Mayberry, Munyon, Weir

ADJUNCT ASSISTANT PROFESSORS: Drow, Johnson, Lieb, Mansfield, Ting, Viet, Zuckerman

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 3212 (or 4111 and 3280-1282), 3281. The minor requires 18 semester hours, including 6 advanced hours, and acceptable minors are Chemistry, Engineering, Geological Sciences, Mathematics, Physics, and Computer Science.
- 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 3335-1336, 2347,

2348, 3328-1328, 3349, 3451-1452, 3453-1454, 3455-1456, 3459, 3460, 3350-1350; ZOOL 2364-1365; BIOL 3422-2423. CHEM 3105-06, 2106; MATH 4111 and 3212 (or 4111 and 3280-1282), 3281 are also required. 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 minor, including 6 advanced hours, and acceptable minors are Chemistry, Engineering, Geological Sciences, Mathematics, Physics, and Computer Science.

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 excepting that the total Biological Sciences requirement is 30 hours including 15 hours of advanced courses. The B.A. Degree requires an 18-hour minor.

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 3.5 either in Biological Sciences or Microbiology, 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 students. 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 3.5 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.

Biology (BIOL)

For Undergraduates

3100 Summer Biology Workshop (3-0)

Lecture, laboratory, and/or field experiences dealing with current topics in the biological sciences. A minimum of 50 hours of lecture or equivalent laboratory and lecture required. Laboratory fee varies.

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 Functional Biology (3-0)

Ultrastructure, biochemistry and cell physiology of prokaryotic and eukaryotic organisms. Homeostasis, metabolism, membrane structure, cell organelles, conduction, contraction and pigmentation. Concurrent with BIOL 1215. Prerequisites: BIOL 3105-06, 1107-08 and eight hours of Chemistry.

1215 Functional 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: \$8.

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: \$8.

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: \$8.

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 3105-06, 1107-08.

3321 Evolutionary Theory (3-0)

Development of evolutionary thought, evidences of evolution and the evolutionary processes. Prerequisites: BIOL 3105-06 and 1107-08.

3324 Introductory Plant Ecology (3-0)

The functional dynamics of plants in the ecosystem, including energy flow, nutrient cycling, water relations, and transpiration. Prerequisite: BIOL 3216. Also recommended: GEOG 3106.

1324 Plant Ecology Techniques (0-3)

Field and laboratory techniques for studying plant function in the ecosystem. Concurrent with BIOL 3324 or may be taken later. Laboratory fee: \$8.

3326 Animal Ecology (3-0)

Animal population dynamics, food habits, and nutritional aspects of ecosystem study. Prerequisite: BIOL 3216. Recommended course: GEOG 3106.

1326 Animal Ecology Techniques (0-3)

Field and laboratory techniques for studying animal function in the ecosystem. Concurrent with BIOL 3326 or may be taken later. Laboratory fee: \$8.

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 BIOL 1328. Prerequisites: BIOL 3216 and a minimum of eight hours of Chemistry. Recommended MICR 3240 and 1241. Also listed as MICR 3328.

1328 Microbial Ecosystems Techniques (0-3)

Techniques employed in studying microbial ecology and environmental microbiology. Concurrent with BIOL 3328. Also listed as MICR 1328. Laboratory fee: \$8.

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, 1107-08, or permission of instructor.

3410 Ecosystems Analysis (3-0)

Systems analysis and simulation modeling of natural ecosystems. Concurrent with BIOL 1410. *Prerequisites:* BIOL 3324, 3326 or 3328, and the mathematics requirement for Biological Sciences majors.

1410 Ecosystem Analysis Laboratory (0-3)

Methods of ecosystem analysis and simulation modeling, emphasizing computer applications. Concurrent with BIOL 3410. Laboratory Fee: \$8.

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, sixteen 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: \$8.

3424 Animal Behavior (3-0)

Theories and experiments that elucidate the biological basis for the behavior of animals. *Prerequisites:* BIOL 3105-06, 1107-08.

3426 Bioarchaeology (2-3)

Recovery, processing, and interpretation of biological material associated with prehistoric and historic man in the New World. Laboratory Fee: \$8.

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.

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: \$8.

Micr biology (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.

3335 Mycology (3-0)

Phylogenetic relationships among fungi as determined by morphology, biochemistry, and physiology. Concurrent with MICR 1336. *Prerequisites:* BIOL 3105-06, 1107-08, MICR 3240 and 1241.

1336 Mycological Techniques (0-3)

Isolation and identification of fungi with the aid of various culture techniques and types of microscopy. Concurrent with MICR 3335. 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: \$8.

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.

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. Also listed as BIOL 3328.

1328 Microbial Ecosystems Techniques (0-3)

Techniques employed in studying microbial ecology and environmental microbiology. Concurrent with MICR 3328. Also listed as BIOL 1328. 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.

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, MICRO 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. Also recommended: MICR 3345-1346.

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: \$8.

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, acetonbutanol, acetic acid, lactic acid 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 Only

3207 Plants and Man (3-0)

The nature of plants, their function in natural ecosystems and their role in human society. Biogeography of plants and their utilization in different climates and cultures. *Prerequisites:* BIOL 3105-06, 1107-08. Recommended for students interested in botany, forestry and wildlife management.

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.

3335 Mycology (3-0)

Phylogenetic relationships among fungi as determined by morphology, biochemistry, cytology and physiology. Concurrent with BOT 1336. Also listed as MICR 3335. *Prerequisites:* BIOL 3105-06, 1107-08 and MICR 3240, 1241.

1336 Mycological Techniques (0-3)

Isolation and identification of fungi with the aid of various culture techniques and types of microscopy. Concurrent with BOT 3335. Also listed as MICR 1336. Laboratory Fee: \$8.

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 Southwestern 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.

1340 Plant Physiology Techniques (0-3)

Techniques used in the study of the physiological processes of plants. Concurrent with BOT 3340. Laboratory Fee: \$8.

3430 Advanced Plant Ecology (3-0)

The study and description of plant communities and the factors which determine them. *Prerequisites:* BIOL 3105-06, 1107-08, 3216-1217, 3324-1324.

3472 Phycology (3-0)

The cell biology, phylogeny, reproduction and ecology of the algal phyla. Concurrent with BOT 1473. *Prerequisite:* Senior standing in Biology.

1473 Phycological Methods (0-3)

A review of methods and techniques of phycology. Concurrent with BOT 3472. Laboratory Fee: \$8.

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.

2368 Entomology (2-0)

Morphology, taxonomy and life histories of insects. Concurrent with ZOOL 1369. *Prerequisites:* Twelve hours of Biological Sciences and junior standing.

1369 Entomology Techniques (0-3)

Observation, collection and identification of insects. Concurrent with ZOOL 2368. 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.

3473 Animal Parasitology (2-4)

Practical laboratory experience in parasitology. Recommended for those interested in Pre-Vet, Pre-Med and Ecology. *Prerequisite:* 16 hours of Biological Sciences. Laboratory Fee: \$8.

3476 Lower Vertebrates (3-0)

Classification and natural history of fish, amphibians and reptiles. Concurrent with ZOOL 1477. *Prerequisite:* 14 Core hours.

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. Concurrent with ZOO 1479. *Prerequisite:* 14 Core hours.

1479 Bird and Mammal Research Techniques (0-3)

Methods of study and familiarization with Southwestern species. Overnight field trips are required. Concurrent with ZOO 3478. Laboratory Fee: \$8.

3480 Vertebrate Physiology (3-0)

Vertebrate systemic functions emphasizing nerve action and movement, endocrinology and metabolic controls, osmoregulation, cardiophysiology and respiration. Concurrent with ZOO 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 ZOO 3480. Laboratory Fee: \$8.

See the *Graduate Studies Catalog* for graduate programs and courses.

Chemistry

209A Physical Science Building
(915) 747-5701, 5720

CHAIRMAN: Cyril Parkanyi

PROFESSOR EMERITUS: Lewis Frederick Hatch

PROFESSORS: Alexander, Davis, Eastman, Herndon, Pannell, Parkanyi, Whalen

ASSOCIATE PROFESSORS: Becvar, Cabaness, Ellzey, Lloyd

ASSISTANT PROFESSORS: Chang, Harper, Scruggs

ADJUNCT PROFESSOR: Del Valle

ADJUNCT ASSOCIATE PROFESSOR: Williams

ADJUNCT ASSISTANT PROFESSORS: Mayr, Watts

B.S. Degree — Specific course requirements for the Chemistry major are CHEM 3105-06, 2106, 3321-22, 3310, 1310, 2321-22, 3351-52, 1351-52, 2411-12, 3465, plus 6 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 majors are Plan 1 (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, 1476-3476, 2411-2412, 3470-1470. 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 Plan 1.

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.

All Chemistry majors are required to consult with and have their enrollment forms signed by their department adviser 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 who 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.

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 science. *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 (0-3)

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. *Prerequisite:* 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 3217 (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 3217 (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 mechanism of inorganic reactions; organometallic compounds; chemistry of nonmetals and physical methods in inorganic chemistry. *Prerequisite:* 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.

3470 Radiochemistry (3-0)

Fundamental principles of radioactivity, theory and operation of radiation measurement devices, separation techniques, preparation and handling of radioactive samples, radioisotope applications. *Prerequisite:* CHEM 3352 or consent of instructor.

1470 Laboratory for Chemistry 3470 (0-3)

Laboratory Fee: \$8.

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.

See the *Graduate Studies Catalog* for graduate programs and courses.

Geological Sciences

201C Geology
(915) 747-5501

CHAIRMAN: G. Randy Keller, Jr.

PROFESSORS EMERITI: John M. Hills, William Samuel Strain
PROFESSORS: Clark, Hoffer, Keller, LeMone, Roy (*L.A. Nelson
Professor*), Schmidt

ASSOCIATE PROFESSORS: Cornell, Goodell, Pingitore

ASSISTANT PROFESSORS: Dyer, Hoover, James, Marston, Peeples,
Powers

ADJUNCT PROFESSORS: Black, McAnulty

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 3212; PHYS 4210, 4211, 1120, and 1121. CS 4120 and MATH 3217 are highly recommended.

The minor must be from one of the following fields: Biological Sciences, Chemistry, Computer Sciences, Engineering, Geography, 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, 3214, 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, 3320, 3351, 3428, 3441; Mathematics 4111, 3212, 3217, 3326, 3436; Computer Science 4120; plus 9 elective hours in advanced level courses in geological sciences, physics, mathematics, computer science or engineering. Program includes Physics minor. The minor will usually be chosen within the colleges of Science, Business, or Engineering, or from Political Science or Anthropology.

B.S. Degree — Geography — Specific course requirements are Geological Sciences 3106, 1106, 3110, 1101, 3101, 3208, 3306, 3308, 3309 and 3310, plus 12 additional advanced hours from 3305, 3311, 3312, 3350, 3359, 3360, 3407, 3409, 3411, 3464, 3472. College of Science Mathematics/Statistics requirement. The minor will usually be chosen within the colleges of Science, Business, or Engineering, or from Political Science or Anthropology.

B.A. Degree — Geography — Specific course requirements are Geological Sciences 3106, 1106, 3110, 3208, 3306, 3308, 3309, and 3310, plus 9 additional advanced hours from 3305, 3311, 3312, 3350, 3359, 3360, 3407, 3409, 3411, 3464, 3472.

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, Geophysics, and Geography 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, Geophysics, or Geography:

Departmental honors in Geology, Geophysics, or Geography 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, geophysics, or geography, 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, Geophysics, or Geography will be the satisfactory completion of an Honors Thesis based upon research in geology, geophysics, or geography, 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 majors and minors in geography and designed to fulfill natural science requirements for students in education, liberal arts, and business. Majors and minors should take 3106/1106 concurrently.

1106 Laboratory for Geography 3106 (0-2)

Required for majors and 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.

3309 Environmental Resources (3-0)

A survey of regional variations in resources, including resource location, utilization, and associated problems. *Prerequisites:* GEOL 3103 or GEOG 3106 or 3110, or permission.

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. *Prerequisites:* GEOL 3103 or 3101, or 4111 or GEOG 3106. Laboratory Fee: \$8.

3311 Urban Geography (3-0)

An analysis of city location, activities and growth, and the resulting internal differentiation and functioning of the urban landscape. *Prerequisite:* GEOG 3110 or permission.

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. Geography 3306 recommended.

3409 Land Use (3-0)

Principles of classification, spatial analysis, and environmental planning applied to the study of land use. *Prerequisite:* GEOG 3106 and 3110 or permission.

3411 Political Geography (3-0)

Study of behavior and interactions among politically organized territories in their geographic context (identical with POSC 3430).

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 and one-day field trip are 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 and one-day field trip are required. Laboratory Fee: \$8.

4111-4122 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 (4122) 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. *Prerequisite:* 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. 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, 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.

4323 Structural Geology (3-6)

A study of the principles and theories of structural geology. Special attention is given to primary and secondary rock structures important for economic reasons. *Prerequisites:* GEOL 3315 and MATH 4111, or concurrently, PHYS 4210. Laboratory Fee: \$8.

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 (3-0)

Geology and distribution of mineral resources. Metallogeny. Consideration of present and future commodity supplies. Field trips. This course cannot be counted as a required upper-level course in Geology. *Prerequisite:* GEOL 3103 or 3103 or 4111. Laboratory Fee: \$8.

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.

3422 Principles of Geochemistry (2-3)

Chemical processes involved in the distribution of elements in the earth, solution chemistry and mineral equilibria of igneous, sedimentary hydrothermal and surface processes. Trace element and isotopic partitioning. Laboratory devoted to measuring chemical parameters of geological materials. *Prerequisites:* GEOL 3315. CHEM 3106, 2106, or permission of instructor. Laboratory Fee: \$8.

3424 Geochemical Prospecting (2-3)

The application of geochemistry to the search for commercial mineral deposits. *Prerequisites:* GEOL 3315 or permission of instructor. Laboratory Fee: \$8.

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.

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.

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. 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.

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 work 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. *Prerequisite:* Permission of Department Chairman.

3470 Economic Mineral Deposits (3-0)

Study of the origin, nature, occurrence, and uses of economic industrial and metallic mineral deposits, prospecting and exploration techniques and economic factors are included. *Prerequisite:* GEOL 4323 or permission of instructor. Laboratory Fee: \$8.

4372 Computer Applications in the Natural Sciences (1-6)

Study of computer applications in the natural sciences utilizing FORTRAN IV. Methods of preparation of data and statistical analysis will be stressed. *Prerequisite:* Junior standing or permission of instructor. Laboratory Fee: \$8.

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.

3222 Survey of Geophysics (3-0)

Earth properties on a large scale: creep and earthquakes, earth tides and slow vibrations; gravity and magnetic fields, electrical currents and resistivity, heat flow. Applications on a smaller scale; oil and mineral exploration using seismic, gravity, magnetic, and electrical methods, site evaluation for power plants, dams, and other structures, archeological uses. *Prerequisites:* MATH 4111, PHYS 4210 or equivalent.

3333 Engineering and Environmental Geophysics (2-3)

Practical application of geophysical methods to engineering problems. Site evaluation for large structures. Seismic risk analysis and building response to earthquakes. Environmental aspects of blasting and excavation. Applications to archeology. *Prerequisites:* PHYS 4210 and 4211, MATH 3212, GEOL 4111 or 3321 or permission of instructor.

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 3212, PHYS 4210 and 4211, or permission of instructor.

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 3212, GEOL 4111 or 3321 or permission of instructor.

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 instructor.

See the *Graduate Studies Catalog* for graduate programs and courses.

Mathematical Sciences

124 Bell Hall
(915) 747-5761

CHAIRMAN: Eugene F. Schuster

PROFESSOR EMERITUS: Charles Herman Gladman

PROFESSORS: Boyer, Guthrie, Leahey, Nymann, Schuster, Srinivasan

ASSOCIATE PROFESSORS: Foged, Gregory, Hall, Kaigh, Liguori, Narvarte, Przymusinski, Strauss

ASSISTANT PROFESSORS: Fitzpatrick, Fox, Gray, Hansen, Huntley, Jelihovschi, Lopp, Ng, Provencio, Rojo, Sewell

B.S. Degree — Mathematics — Specific course requirements for the mathematical sciences degree are: 4111, 3212, 3217, 3325, 3326, 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, 3212, 3217, 3323 or 3426, 3325, 3326, 3330, 3335 or 3442, 3429, 3480; at least three courses from MATH 3327, 3341, or 3441, 3353, 3436, 3437, 3443, 3481, 3499. 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, 3212, 3217, 3323 or 3426, 3330, 3341 or 3441, 3429, 3480; at least two courses from 3380, 3381 and 3481; 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. 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 3106, 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.

3106 College Geometry and Algebra (3-0)

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. *Prerequisite:* MATH 3105, or an acceptable score on a placement exam.

4110 Pre-calculus (4-0)

Topics include trigonometry, vectors in two dimensions, trigonometric form for complex numbers, polar coordinates, systems of equations, matrices, sequences, series, and mathematical induction. *Prerequisite:* MATH 3106, 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.

3120 Business Algebra (3-0)

The topics include the algebra of sets; functions; linear, quadratic, exponential and logarithmic; systems of linear equations and inequalities; matrix algebra and linear programming. *Prerequisites:* Two 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 Computer Mathematics (3-0)

Topics in discrete mathematics relevant to computing, such as number systems, computer codes, computer arithmetic, induction and recursion, sets and relations. Introduction to Boolean algebra, combinatorics, and graph theory. *Prerequisite:* MATH 3120 or 4110, or equivalent.

3201 Introductory Analysis for Business and Social Sciences (3-0)

An introduction to differential and integral calculus with applications to business and economics. *Prerequisite:* MATH 3120 or 4110.

3212 Calculus (3-0)

Continuation of MATH 4111. Topics include solid analytic geometry, vectors, coordinate systems, special methods of integration and applications. *Prerequisite:* MATH 4111.

3217 Calculus (3-0)

Infinite series, partial differentiation, and multiple integrals. *Prerequisite:* MATH 3212.

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 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.

3302 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 notations of group, ring, and field are presented. *Prerequisites:* Satisfactory completion of an arithmetic skills test, current registration in elementary education, and junior standing. 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.

3303 Classroom Mathematics II (3-0)

A continuation of MATH 3302. *Prerequisite:* MATH 3302. 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. Notions of distance, Euclidean and non-Euclidean geometry are discussed. *Prerequisite:* MATH 3302. 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 3212.

3323 Matrix Algebra (3-0)

Systems of linear equations, matrices, determinants, eigenvalues and eigenvectors, diagonalization, vector spaces and linear transformations. *Prerequisite:* MATH 3212.

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 3212.

3326 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 3217.

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 3217.

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 3217.

3353 Mathematical Programming (3-0)

Theory and applications of linear, dynamic, integer, and nonlinear programming, linear inequalities; optimization, duality; simplex algorithm. *Prerequisite:* CS 4120 and MATH 3323.

3425 Modern Algebra (3-0)

Groups, rings, integral domains, and fields. *Prerequisite:* MATH 3325.

3426 Linear Algebra

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 3326.

3437 Complex Analysis (3-0)

The definition of the elementary analytic functions, 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 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 3326 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.

1499-3499 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, 3481. Students who plan to pursue graduate studies in statistics related areas are urged to take Statistics 3480 and 3481.

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 3217.

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.

3481 Statistics II (3-0)

A continuation of Statistics 3480. Theory and applications of multiple linear regression analysis, analysis of variance, experimental design. Computational aspects developed through use of statistical computer packages. *Prerequisites:* Statistics 3480 and MATH 3323 or 3426.

See the *Graduate Studies Catalog* for graduate programs and courses.

Physics

210 Physical Science
(915) 747-5715

CHAIRMAN: Rufus Bruce, Jr.

PROFESSORS EMERITI: Thomas Grogard Barnes, Clarence Sharp
Cook, Oscar Harry McMahan

PROFESSORS: Bolen, Brient, Bruce, Lawson, McIntyre

ASSOCIATE PROFESSORS: Blue, Cooper, Dean, Schumaker

ASSISTANT PROFESSORS: Ho, Slusher

B.S. Degree — specific course requirements for the Physics major are: PHYS 3109, 1120, 4210, 1121, 4211, 1218, 3325, 3326, 2343, 3351, 3352, 3431, 3432, 3441, 3442, 2446, 3457.

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 3457. 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, 3326, 2343, 3351, 3441 and 2446.

Mathematics is the suggested minor for a physics major; other minors can be substituted upon approval of the undergraduate advisor.

All Physics Bachelor of Science degree students are required to take the Graduate Record Examination (both Aptitude and Advanced Physics) during their senior year.

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 examination). 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, but may be counted as a laboratory science for liberal arts, business, and education students. 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 PHYS 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 3212, 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)

Organized 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.

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.

For Undergraduates and Graduates

3320 Introduction to Geophysics (3-0)

A study of the application of the principles and practices of physics to the solution of problems related to the earth. It includes a study of geochronology, temperature of earth, seismology, dimensions of the earth, gravity, isostasy and tectonics, and geomagnetism. *Prerequisite:* PHYS 4211.

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 Modern Physics I (3-0)

Relativistic mechanics and quantum mechanical theory. *Prerequisite:* PHYS 4211.

3326 Modern Physics II (3-0)

Continuation of PHYS 3325 including topics from atomic, solid state physics, and nuclear physics. *Prerequisite:* PHYS 3325.

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. Offered fall semester.

3351 Analytical Mechanics (3-0)

Dynamics of particles and rigid bodies via Newtonian, Lagrangian, and Hamiltonian equations of motion. *Prerequisites:* PHYS 4211; MATH 3326 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 3326.

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 3217.

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 3326.

3431 Thermal Physics (3-0)

Introduction to the laws of methods of thermodynamics. *Prerequisite:* PHYS 4211 and MATH 3217.

3432 Statistical Physics (3-0)

The statistical foundations of thermodynamics. *Prerequisite:* PHYS 3431.

3441 Electromagnetics I (3-0)

Electromagnetic theory via Maxwell's equations. *Prerequisites:* PHYS 4211 and MATH 3217.

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 3217.

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 acoustics waves. Mathematical analyses 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 3326.

3453 Methods of Mathematical Physics (3-0)

Selected topics in mathematical physics. *Prerequisites:* MATH 3326 and six advanced hours of physics or engineering.

3457 Introduction to Quantum Mechanics (3-0)

Schrodinger's equation, the square well, harmonic oscillator, hydrogen-like atoms, and the theory of transitions. *Prerequisites:* PHYS 3326 and MATH 3326.

150 / THE COLLEGE OF SCIENCE

1475-6475 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.

The Faculty

- LONNIE LEE ABERNETHY, P.E.**, Professor Emeritus of Metallurgical Engineering, 1963
B.Cer.E., North Carolina State University; M.Sc., Ph.D., Ohio State University
- GAIL WAGONER ACKALL**, Assistant Professor of Allied Health, 1981
B.A., Valparaiso University; M.A., Western Michigan University
- WESTON AGOR**, Professor of Political Science, 1982
B.A., St. Lawrence University; M.P.A., University of Michigan; Ph.D., University of Wisconsin
- RICARDO D. AGUILAR**, Associate Professor of Modern Languages, 1977
B.A., M.A., The University of Texas at El Paso; Ph.D., University of New Mexico
- PATRICIA ADKINS AINSA**, Assistant Professor of Educational Leadership and Counseling, 1977
B.A., The University of Texas at El Paso; M.S., Eastern New Mexico University; Ph.D., University of Colorado at Boulder
- CONSTANTINE ALAFODIMOS**, Assistant Professor in the Department of Electrical Engineering, 1984
Dip., Technological Institute of Athens; B.S., New York Institute of Technology; B.S.E.E., M.S.E.E., Ph.D., New Mexico State University
- RICHARD WAYNE ALBIN**, Adjunct Assistant Professor of Religion, 1976
B.A., Vanderbilt University; S.T.M., Andover Newton Theology School; S.T.B., Harvard Divinity School; Ph.D., University of Connecticut
- ADELFO ALDANA**, Assistant Professor of Modern Languages, 1977
B.A., Graceland College; M.A., Ph.D., University of Illinois
- CHERYL ALDRIDGE, R.N.**, Instructor in Nursing, 1984
B.S.N., Michigan State University; M.N., University of Kansas
- DOREENE ALEXANDER, R.N.**, Assistant Professor of Nursing, 1984
B.S.N., University of Arizona; M.S.N., University of Texas Health Center, School of Nursing at San Antonio
- BARBARA ALKOFR**, Assistant Professor of Drama, 1984
B.A., M.A., Baylor University; M.F.A., University of Iowa
- HAROLD EDWIN ALEXANDER**, Professor of Chemistry, 1955
B.S., The University of Texas at El Paso; M.A., Ph.D., The University of Texas at Austin
- TERRY W. ALLEN**, Assistant Professor of Psychology, 1978
B.S., M.A., Ph.D., Michigan State University
- MARIA ROSARIO ALVAREZ, R.N.**, Instructor in Nursing, 1979
B.S.N., The University of Texas at El Paso; M.S., Texas Woman's University
- JON AMASTAE**, Associate Professor of Linguistics, 1980
B.A., University of New Mexico; Ph.D., University of Oregon
- CHARLES H. AMBLER**, Assistant Professor of History, 1984
B.A., Middlebury College; M.A., Ph.D., Yale University
- EVAN HAYWOOD ANTONE**, Associate Professor of English, 1967
B.A., M.A., The University of Texas at El Paso; Ph.D., The University of California at Los Angeles
- HOWARD GEORGE APPLGATE**, Professor in the Department of Civil Engineering, 1970
B.S., M.S., Colorado State University; Ph.D., Michigan State University
- PABLO ARENAZ**, Assistant Professor of Biological Sciences, 1984
B.S., M.S., University of Nevada at Reno; Ph.D., Washington State University
- ARMANDO ARMENGOL**, Associate Professor of Modern Languages, 1977
B.A., M.A., Ph.D., University of Illinois
- JOHN CLEVELAND ARNOLD**, Associate Professor of Art, 1965
B.A., University of Minnesota; M.F.A., Arizona State University
- DAVID RAYMOND ARROYO**, Adjunct Assistant Professor of Religion, 1973
B.A., Brigham Young University
- MICHAEL EVAN AUSTIN**, Professor of Electrical Engineering, 1963
B.S.E.E., M.S.E.E., Ph.D., The University of Texas at Austin
- WALTER G. AUSTIN, JR., C.P.A.**, Associate Professor of Accounting, 1979
B.B.A., M.B.A., Texas Tech University; Ph.D., The University of Texas at Austin
- ALBERTO IAN BAGBY, JR.**, Associate Professor of Modern Languages, 1973
A.B., Baylor University; M.A., University of Missouri; Ph.D., University of Kentucky
- JACK SEARCY BAILEY**, Assistant Professor of Modern Languages, 1963
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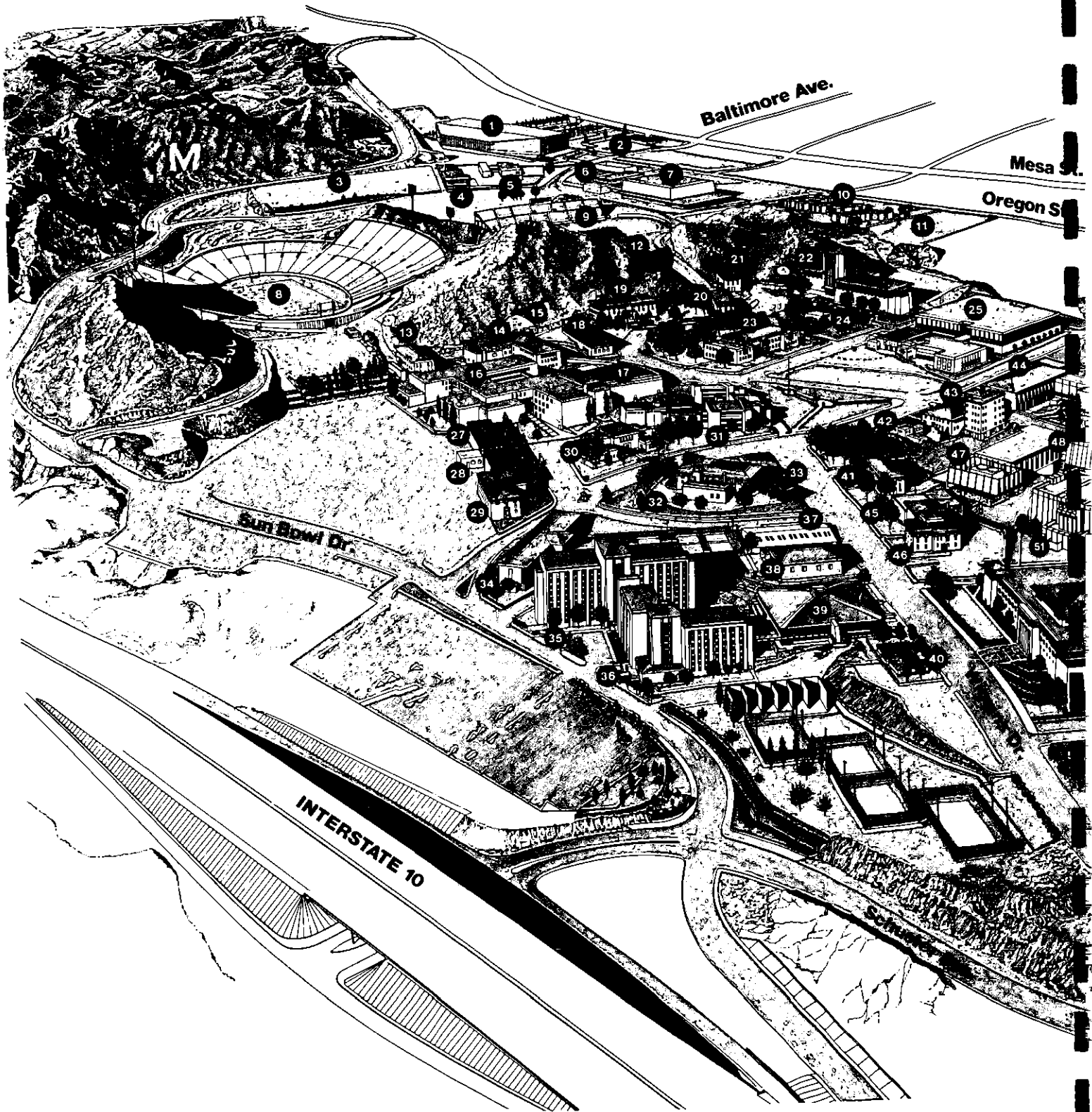
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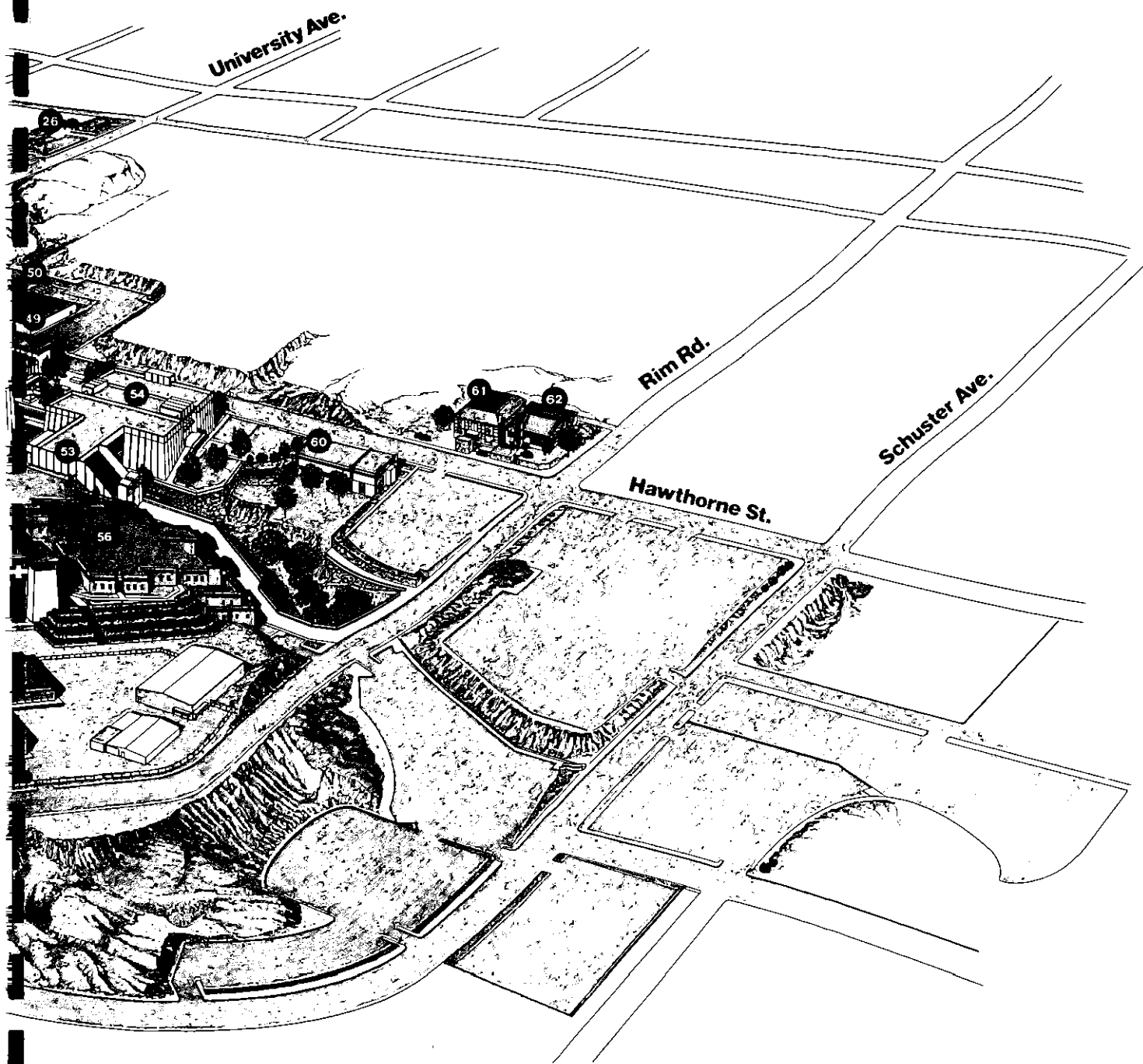
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University



CAMPUS MAP

- | | | |
|---|---------------------------------------|------------------------------|
| Administration Annex
(Development/Alumni) (42) | Burges Hall (Dormitory) (34) | Education Bldg. (22) |
| Administration Bldg. (43) | Business Administration
Bldg. (56) | Engineering Bldg. (54) |
| Athletics Offices (5) | Centennial Museum (32) | Fox Fine Arts Center (16) |
| Auxiliary Gym (6) | Central Energy Plant (47) | Geology Bldg. (14) |
| Barry Hall (Dormitory) (35) | Classroom Bldg. (52) | Graham Hall (21) |
| Bell Hall (46) | Commons (39) | Health Service (40) |
| Benedict Hall (41) | Computer Center (45) | Holiday Hall (12) |
| Biology Bldg. (51) | Cotton Memorial Bldg. (30) | Housing, Student Family (10) |
| | | Hudspeth Hall (29) |
| | | Kelly Hall (Dormitory) (36) |

*The College of Nursing and Allied Health is located at
1101 N. Campbell St., corner of Campbell and Arizona Sts.



- Kidd Field (9)
- Liberal Arts Bldg. (44)
- Old Library Bldg. (31)
- Central Library (55)
- Library Annex (49)
- Magoffin Auditorium (17)
- Math Annex (62)
- Memorial Gym (7)
- Metallurgy Bldg. (53)
- Military Science Bldg. (4)
- Miners Hall (27)

- News Service (60)
- *Nursing and Allied Health,
College of
- Old Engine #1 (33)
- Old Kelly Hall (20)
- Old Main (19)
- Oregon St. Intramural Field (11)
- Physical Plant (59)
- Physical Science Bldg. (48)
- Police, Campus (61)

- Print Shop (58)
- Psychology Bldg. (23)
- Quinn Hall (18)
- Seamon Hall (13)
- Seismic Lab (15)
- Solar House (50)
- Special Events Ctr. (1)
- Special Projects Ctr. (24)
- Speech, Hearing and Language
Clinic (26)

- Sun Bowl Stadium (8)
- Swimming Pool (37)
- Texas Western Press (57)
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- Worrell Hall (28)

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THE UNIVERSITY OF TEXAS AT EL PASO

UNDERGRADUATE ADMISSION APPLICATION

FORWARD DOCUMENTS TO: Office of Admissions and Evaluation, The University of Texas at El Paso, El Paso, Texas 79968-0510

QUESTIONS 1-13: TO BE ANSWERED BY ALL STUDENTS

1. _____
U.S. SOCIAL SECURITY NUMBER

The U.S. Social Security Number is used for matriculation and record identification only. If you do not furnish your Social Security Number, a student number will be assigned to you.

APPLICATION DEADLINES:

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

Applications from citizens of countries other than Mexico who are not permanent residents of the United States must be accompanied by a non-refundable \$50 check or money order (U.S. dollars) payable to The University of Texas at El Paso. ALL international documents must be received by the University before the deadline date. A non-refundable \$15 late fee is required of U.S. citizens or permanent residents submitting undergraduate applications after the deadline.

2. _____
Last (Family) Name First Name Middle or Maiden Name

3. Current Mailing Address: No. & Street _____ Apt. _____ County _____
City _____ State or Country _____ ZIP _____ Telephone _____

4. Permanent Mailing Address: No. & Street _____ Apt. _____ County _____
City _____ State or Country _____ ZIP _____ Telephone _____

5. Birthdate _____ Birthplace _____ 6. Sex: () Male () Female 7. Your citizenship _____

8. If you are not a U.S. citizen, are you a permanent resident of the United States? () Yes () No
Alien registration number _____ Date of issue _____ Port of entry _____

9. Ethnicity: Check one. This item is used to satisfy state/federal reporting requirements ONLY and in no way affects the admission decision.
____ (1) White/Non-Hispanic ____ (3) Hispanic ____ (5) American Indian/Alaskan Native
____ (2) Black/Non-Hispanic ____ (4) Asian/Pacific Islander ____ (6) International Student

10. Check the semester you wish to enter or re-enter the University (Application valid only for this semester):
() Summer I () Summer II () Fall () Spring 19_____

11. Indicate your status below:
() Freshman () Summer Transient Student () International Student
() Transfer Student () Readmission () 2nd Undergraduate Degree

12. Indicate your major or program objective (Check only one):

- | | | |
|--|---|---|
| <input type="checkbox"/> 108 Allied Health | <input type="checkbox"/> 142 Engineering: Civil | <input type="checkbox"/> 282 Physical Education |
| <input type="checkbox"/> 110 Anthropology | <input type="checkbox"/> 186 Engineering: Electrical | <input type="checkbox"/> 345 Physical Therapy |
| <input type="checkbox"/> 114 Art: General | <input type="checkbox"/> 184 Engineering: Electrical (Computer Engineering) | <input type="checkbox"/> 284 Physics |
| <input type="checkbox"/> 116 Art Education | <input type="checkbox"/> 228 Engineering: Industrial | <input type="checkbox"/> 286 Political Science |
| <input type="checkbox"/> 136 Art: Ceramics | <input type="checkbox"/> 250 Engineering: Mechanical | <input type="checkbox"/> 294 Psychology (Liberal Arts) |
| <input type="checkbox"/> 258 Art: Metals | <input type="checkbox"/> 256 Engineering: Metallurgical | <input type="checkbox"/> 294 Psychology (Science) |
| <input type="checkbox"/> 278 Art: Painting | <input type="checkbox"/> 198 English: Creative Writing | <input type="checkbox"/> 310 Social Work |
| <input type="checkbox"/> 288 Art: Sculpture | <input type="checkbox"/> 200 English: Literature | <input type="checkbox"/> 312 Sociology |
| <input type="checkbox"/> 124 Biology | <input type="checkbox"/> 210 French | <input type="checkbox"/> 314 Spanish |
| <input type="checkbox"/> 126 Botany | <input type="checkbox"/> 212 Geography | <input type="checkbox"/> 318 Speech |
| <input type="checkbox"/> 128 Broadcasting | <input type="checkbox"/> 214 Geology | <input type="checkbox"/> 320 Speech, Hearing & Language Disorders |
| <input type="checkbox"/> 130 Business (see specific fields) | <input type="checkbox"/> 216 Geophysics | <input type="checkbox"/> 326 Statistics |
| <input type="checkbox"/> 100 Business: Accounting | <input type="checkbox"/> 218 German | <input type="checkbox"/> 332 Zoology |
| <input type="checkbox"/> 148 Business: Banking, Commercial | <input type="checkbox"/> 226 History | <input type="checkbox"/> 338 Undecided (Liberal Arts) |
| <input type="checkbox"/> 156 Business: Computer Science | <input type="checkbox"/> 234 Journalism | <input type="checkbox"/> 336 Undecided (Science) |
| <input type="checkbox"/> 174 Business: Economics | <input type="checkbox"/> 240 Latin-American Studies | |
| <input type="checkbox"/> 208 Business: Finance | <input type="checkbox"/> 242 Linguistics | |
| <input type="checkbox"/> 244 Business: Management | <input type="checkbox"/> 246 Mathematics | |
| <input type="checkbox"/> 248 Business: Marketing | <input type="checkbox"/> 251 Medical Technology | |
| <input type="checkbox"/> 300 Business: Real Estate | <input type="checkbox"/> 260 Microbiology | |
| <input type="checkbox"/> 138 Chemistry | <input type="checkbox"/> 270 Music Education | |
| <input type="checkbox"/> 140 Chicano Studies | <input type="checkbox"/> 118 Music: Performance—Ballet | |
| <input type="checkbox"/> 158 Computer Science: Computation Option | <input type="checkbox"/> 236 Music: Performance—Keyboard | |
| <input type="checkbox"/> 160 Computer Science: Computer Systems Option | <input type="checkbox"/> 276 Music: Performance—Orchestra/Band | |
| <input type="checkbox"/> 154 Criminal Justice | <input type="checkbox"/> 330 Music: Performance—Vocal | |
| <input type="checkbox"/> 168 Drama | <input type="checkbox"/> 266 Music: Theory & Composition | |
| <input type="checkbox"/> 174 Economics (Liberal Arts) | <input type="checkbox"/> 274 Nursing | |
| <input type="checkbox"/> 188 Education: Elementary | <input type="checkbox"/> 275 Nursing: Flexible Option for RN's | |
| <input type="checkbox"/> 308 Education: Secondary | <input type="checkbox"/> 343 Occupational Therapy | |
| | <input type="checkbox"/> 280 Philosophy | |

AREAS OF INTEREST: Check if you intend to pursue further study in one of the following areas. You must also check one of the major fields listed above.
____ 916 Architecture
____ 904 Dentistry
____ 906 Law
____ 908 Medicine
____ 912 Pharmacy
____ 914 Veterinary Medicine

13. Are you a Texas resident? () Yes () No How long have you lived in Texas? Years _____ Months _____

Answer the following questions as they pertain to: (a) your parent or legal guardian IF YOU ARE 18 YEARS OF AGE OR YOUNGER or if you are dependent upon this person. (b) yourself IF YOU ARE 19 YEARS OF AGE OR OLDER and independent. (c) yourself or your spouse IF MARRIED.

Name _____ Relationship to you _____

This person's address for the last 24 months:

Number & Street

City

State

Beginning Mo./Yr.

Ending Mo./Yr.

This person's employment for the last 24 months:

Employer

City & State

Part- or Full-Time

Beginning Mo./Yr.

Ending Mo./Yr.

Are you, your parent or guardian, or your spouse currently on active U.S. military duty in Texas? () Yes () No

Stationed at _____ Home of Record _____ Expected date of separation _____

If your military Home of Record is not Texas, attach a written statement from the appropriate commanding or personnel officer certifying that you (or one of the above-mentioned persons) are now assigned to active duty in Texas and will be so assigned at the time you enroll at U.T. El Paso. This may enable you to pay resident tuition.

QUESTIONS 14-17: TO BE ANSWERED BY ALL U.S. HIGH SCHOOL GRADUATES WITH FEWER THAN 30 SEMESTER HOURS OF COLLEGE CREDIT.

14. High school from which you graduated or will be graduating _____
Name City & State Month & Year

15. Are you applying for the Early Admission Program for high school seniors? () Yes () No Expected date of graduation _____

16. If you did not graduate from high school, have you taken the Test for General Education Development (GED)? () Yes () No
() English version () Spanish version () Average standard score _____ Test Date _____

17. Applicants with fewer than 30 semester hours who graduated from high school within the past 5 years and all GED applicants must submit either official SAT, PAA, or ACT scores.

a. Your SAT scores: Verbal _____ Math _____ Total _____ TSWE _____ Test Date _____

b. Your PAA scores: Verbal _____ Math _____ Total _____ English _____ Test Date _____

c. Your ACT scores: E _____ M _____ SS _____ COMP _____ Test Date _____

QUESTIONS 18-19: TO BE ANSWERED BY ALL STUDENTS WHO HAVE EVER ENROLLED AT A COLLEGE OR UNIVERSITY.

18. You must submit a complete, official transcript from EACH school attended and cannot disregard any portion of your academic career. List ALL colleges or universities attended and give dates of attendance and credit (specify semester or quarter hours) received from each. If you are a returning U.T. El Paso student, you must submit an official transcript from each school attended since your last enrollment here.

College or University State Dates Attended Credit Academic Standing

_____ to _____
_____ to _____
_____ to _____

19. Have you previously attended U.T. El Paso? () Yes () No

If yes, name under which you were last enrolled: Last _____ First _____ Middle _____

Student number _____ Dates of attendance: _____ to _____

QUESTIONS 20-22: TO BE ANSWERED BY ALL INTERNATIONAL STUDENTS AND PERMANENT RESIDENTS OF THE UNITED STATES WHO ATTEND FOREIGN SECONDARY/PREPARATORY SCHOOLS

20. High school from which you graduated _____
Name Location Graduation Date

(A certified English translation must accompany transcripts from non-Spanish high schools.)

21. Satisfactory scores from ONE of the following examinations must be submitted. Permanent residents of the United States and applicants who consider English their primary or secondary language should contact the Office of Admission and Evaluation to determine which test is most appropriate.

a. Your TOEFL (Test of English as a Foreign Language) score _____ Test Date _____

b. Your SAT (Scholastic Aptitude Test) score: Verbal _____ Math _____ Total _____ Test Date _____

c. Your PAA (Prueba de Aptitude Academica) score: Verbal _____ Math _____ Total _____ Test Date _____

(for non-English speaking undergraduates whose primary language is Spanish and who are apply for admission to the bilingual Inter-American Science and Humanities Program)

22. Will you need an I-20 to attend U.T. El Paso? () Yes () No. If you currently have a student visa, which school issued your I-20? _____

_____ If you are currently in the United States and do not have a student visa, what type of visa do you have? _____

ALL REQUIRED OFFICIAL DOCUMENTS MUST BE RECEIVED BY THE OFFICE OF ADMISSION AND EVALUATION BEFORE AN ADMISSION DECISION CAN BE MADE. THE HEALTH FORM IS REQUIRED OF ALL INTERNATIONAL STUDENTS. PROOF OF APPROPRIATE IMMUNIZATIONS IS REQUIRED OF ALL STUDENTS.

I certify that I have read and understand all the above information and that all questions on this application have been answered completely and correctly. Signature _____ Date _____

STATEMENT OF EQUAL EDUCATIONAL OPPORTUNITY

With respect to the admission and education of students, with respect to the availability of student loans, grants, scholarships, and job opportunities, with respect to the student and faculty housing situated on premises owned or occupied by the University. The University of Texas at El Paso shall not discriminate either in favor of or against any person on the basis of his or her race, sex, religion, color, creed, age, national origin, physical or mental handicaps.

Directory for further information and correspondence:

The mailing address for correspondence to all offices.

The University of Texas at El Paso (Department) El Paso, Texas 79968

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) 747-5000.

Admission, Undergraduate Evaluation of Transfer Credit Residency Determination	Office of Admission and Evaluation 209 Administration Building (915) 747-5576
New Student Information Orientation	Office of Undergraduate Recruitment and Scholarships 115 Administration Building (915) 747-5896
Admission, Graduate	Graduate School 901 Education Building (915) 747-5491
Counseling and Guidance Testing	University Counseling Service 103 West Union (915) 747-5568
Financial Aid	Office of Financial Aid 202 West Union (915) 747-5204
Financial Information	Business Office — Bursar 216 Administration Building (915) 747-5105
Health Service	Student Health Service Wiggins Drive (915) 747-5624
Housing Information	Housing Business Office 101 Kelly Hall (915) 747-5613
Scholarships	Office of Undergraduate Recruitment and Scholarships 203 Administration Building (915) 747-5890
Student Affairs	Dean of Students 102 West Union (914) 747-5648

**The University of Texas at El Paso
Office of Admission and Records
El Paso, Texas 79968**

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