

# The University of Texas at El Paso

1981-1983 Catalog

The University of Texas at El Paso

1981-1983 Catalog



## **Statement of Equal Educational Opportunity**

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

The University of Texas at El Paso hereby reserves the right to withdraw courses at any time, change fees, rules, calendar, curricula, degree programs, degree requirements, graduation procedures, and any other requirement affecting students. Changes will become effective whenever the proper authorities so determine and will apply to both prospective students and those already enrolled.

The provisions of this catalog do not constitute a contract, express or implied, between any applicant, student, or faculty member and The University of Texas at El Paso or The University of Texas System.

# THE UNIVERSITY OF TEXAS AT EL PASO

## General Catalog 1981-1983

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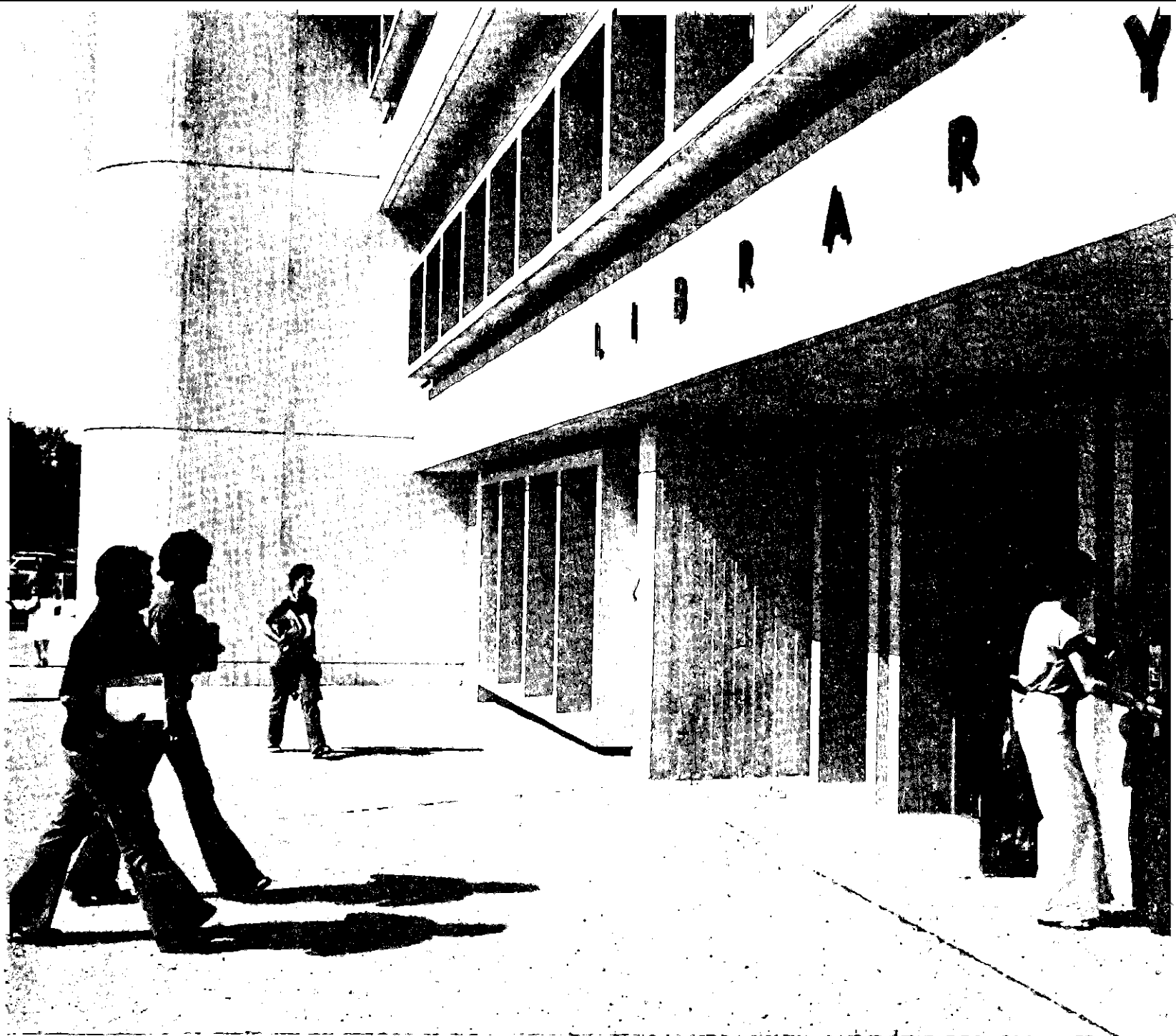
August, 1981

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Published by The University of Texas at El Paso, Office of Admissions and Records, El Paso, Texas 79968







**University History**  
**Board of Regents**  
**University Administration**  
**Calendar, 1981-1983**  
**Endowments, Trusts, Memorial Funds**  
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# **General Information**

## UNIVERSITY HISTORY

The University of Texas at El Paso during 1983 will celebrate the 70th 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. The College of Business Administration building is due for completion in 1982, and a major addition to the Union was completed in 1981.

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 OF THE UNIVERSITY OF TEXAS SYSTEM

**JAMES L. POWELL**, Chairman  
**STERLING H. FLY, JR.**, Vice-Chairman  
**TOM. B. RHODES**, Vice-Chairman  
**ARTHUR H. DILLY**, Executive Secretary

### TERMS EXPIRE JANUARY, 1983

**JANE WEINERT BLUMBERG** (Mrs. Roland K.), Seguin  
**STERLING H. FLY, JR.**, M.D., Uvalde  
**JESS HAY**, Dallas

### TERMS EXPIRE JANUARY, 1985

**JON P. NEWTON**, Austin  
**JAMES L. POWELL**, Fort McKavett  
**HOWARD N. RICHARDS**, Austin

### TERMS EXPIRE JANUARY, 1987

**JANEY BRISCOE** (Mrs. Dolph), Uvalde  
**BERYL BUCKLEY MILBURN** (Mrs. Malcolm), Austin  
**TOM B. RHODES**, Dallas

## OFFICE OF THE CHANCELLOR

**E. DON WALKER**, *Chancellor*  
**BRYCE JORDAN**, *Executive Vice Chancellor for Academic Affairs*  
**CHARLES B. MULLINS, M.D.**, *Executive Vice Chancellor for Health Affairs*

# ADMINISTRATIVE OFFICERS

HASKELL M. MONROE, JR., *President*, 1980  
B.A., M.A., Austin College; Ph.D., Rice University

JOSEPH DAVID OLANDER, *Vice President for Academic Affairs*, 1979  
B.A., University of Maryland; M.A., Rollins College; Ph.D., Indiana University.

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

EARL WYNN ANDERSON, *Assistant to the President*, 1966  
B.A., The University of Texas at El Paso

LEON CLAIRE METZ, *Assistant to the President*, 1967

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

DIANA S. NATALICIO, *Dean, The College of Liberal Arts*, 1971  
B.S., St. Louis University; M.A., Ph.D., The University of Texas at Austin

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

WELDON C. NEILL, *Dean, The College of Business*, 1968  
B.A., M.A., Ph.D., The University of Texas at Austin

DONALD EDGAR BOWEN, *Assistant Vice-President for Academic Affairs*, 1966  
B.A., M.A., Texas Christian University; Ph.D., The University of Texas at Austin

WILLIAM PETER NELSEN, *Director of Admissions and Registrar*, 1978  
B.A., Tulane University

PAT MORA BURNSIDE, *Assistant to the Vice-President for Academic Affairs*, 1978  
B.A., M.A., The University of Texas at El Paso

JAMES M. PEAK, *Director of Development*, 1977  
B.A., The University of Texas at El Paso

ELMO MITCHELL CAVIN, JR., *Assistant Vice-President for Business Affairs*, 1979  
B.B.A., M.B.A., St. Mary's University

AARON LEE SEGAL, *Director, Inter-American and Border Studies Institute*, 1981  
B.A., Occidental College; B. Phil., Oxford University; Ph.D., University of California, Berkeley

CHOO-SENG GIAM, *Dean, College of Science*, 1981  
B.S., University of Singapore; M.S., Ph.D., University of Saskatchewan

JACK SMITH, *Dean, The College of Engineering*, 1964  
B.S., M.S., Ph.D., The University of Arizona

FRED WILLIAM HANES, *Director of Libraries*, 1974  
A.B., Earlham College; M.A.L.S., Indiana University

HUGH W. TREADWELL, *Director, Texas Western Press*, 1981  
B.A., M.A., The University of Oklahoma

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

DALE WALKER, *Director, News and Information*, 1966  
B.A., The University of Texas at El Paso



**UNIVERSITY CALENDAR 1981-1983****1981**

August 26-28  
August 31  
September 4  
  
September 7  
September 16  
September 18  
October 12  
  
November 7  
November 26-27  
November 30  
  
December 11  
December 14-18  
December 20  
Dec. 23-Jan. 1  
December 22  
January 4

Registration  
Classes begin  
Last day for late registration, pass/fail registration, fee payment, class or section additions or changes  
Labor Day  
Census date (12th class day)  
Application deadline for degrees to be conferred in December  
Last day to drop a class or officially withdraw with an automatic W; after this date, grade W or F determined by each instructor  
Homecoming  
Thanksgiving Holiday  
Course drop/withdrawal deadline; students enrolled in courses after this date may not receive grade of W  
Last day of classes  
Final Examinations  
Commencement  
Winter Holidays; most University offices closed  
Fall semester final grades due in Registrars office, 12 noon  
University offices re-open

**FALL SEMESTER****1982**

August 25-27  
August 30  
September 3  
  
September 6  
September 15  
September 17  
October 11  
  
October 23  
November 25-26  
November 29  
  
December 10  
December 13-17  
  
December 20-31  
December 21  
January 3

**1982**

January 13-15  
January 18  
January 22  
  
January 29  
February 2  
February 26  
  
March 15-19  
April 9  
April 23  
  
May 7  
May 10-14  
May 15  
May 18

Registration  
Classes begin  
Last day for late registration, pass/fail registration, fee payment, class or section additions or changes  
Application deadline for degrees to be conferred in May  
Census date (12th class day)  
Last day to drop a class or officially withdraw with an automatic W; after this date, grade of W or F determined by each instructor  
Spring Holiday for students; no classes meet, University offices open  
Spring Holiday for faculty and staff; no classes meet, University offices closed  
Course drop/withdrawal deadline; Students enrolled in courses after this date may not receive grade of W  
Last day of classes  
Final Examinations  
Commencement  
Spring semester final grades due in Registrars office, 12 noon

**SPRING SEMESTER****1983**

January 12-14  
January 17  
January 21  
  
January 28  
February 1  
February 25  
  
March 14-18  
April 1  
April 22  
  
May 6  
May 9-13  
May 14  
May 17

**1982**

June 1  
June 2  
June 7  
June 7  
  
June 14  
  
June 14  
June 22  
  
July 1  
  
July 4  
July 8  
July 9-10  
July 12  
July 13  
July 13  
July 16  
July 16  
  
July 26  
  
August 12  
  
August 19  
August 20-21  
August 23

Registration, 1st term and 11-week classes  
Classes begin, 1st term and 11-week classes  
Census date (4th class day)  
Last day for late registration, pass/fail registration, fee payment, class or section additions or changes, 1st term and 11 week classes  
Last day to drop a class or withdraw with an automatic W, 1st term classes; after this date, grade of W or F determined by each instructor  
Application deadline for degrees to be conferred in August  
Last day to drop or officially withdraw with an automatic W, 11 week classes; after this date grade of W or F determined by each instructor  
Course drop/withdrawal deadline, 1st term classes; students enrolled in courses after this date may not receive grade of W  
Independence Day Holiday  
Last day of classes, 1st term  
Final examinations, 1st term  
Registration, 2nd term  
Classes begin, 2nd term  
1st term final grades due in Registrars Office, 12 noon  
Census date (4th class day)  
Last day for late registration, pass/fail registration, fee payment, class or section additions or changes, 2nd term classes  
Last day to drop or officially withdraw with an automatic W, 2nd term classes; after this date, grade of W or F determined by each instructor  
Course drop/withdrawal deadline, 2nd term and 11-week classes; students enrolled in courses after this date may not receive grade of W  
Last day of classes, 2nd term and 11 week classes  
Final examinations, 2nd term and 11 week classes  
2nd term and 11 week final grades due in Registrars office, 12 noon

**SUMMER SESSIONS****1983**

May 30  
May 31  
June 3  
June 3  
  
June 14  
  
June 15  
June 17  
  
June 30  
  
July 4  
July 7  
July 8-9  
July 11  
July 12  
July 13  
July 15  
July 15  
  
July 26  
  
August 11  
  
August 17  
August 18-19  
August 22

# 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:

## GRACE ANN BEAL PERMANENT MEMORIAL FUND

— Established in memory of 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.

## C. D. BELDING PERMANENT MEMORIAL FUND

— *Founded by Mrs. C. D. Belding in memory of her late husband, a prominent member of El Paso's real estate and insurance industry, with income from the endowment fund providing 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.

## 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 U.T. 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.

## 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 scholarships to student athletes.

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

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

## 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.*

## 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.

## 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.

## 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 this permanent endowment fund providing scholarships for superior local area high school students who attend U. T. 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 a qualified student interested in the field of arts and humanities.

## 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, Reuben 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 Speech, and Music, was renamed the Josephine Clardy Fox Fine Arts Center.*

## 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.

## 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 Dr. Hartrick, Professor Emeritus, for his 34 years of teaching and advising numerous students.

## 8 / GENERAL INFORMATION

### 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.

### 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.

### 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.

### 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.

### 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 U.T. El Paso Library Endowment Fund  
The Dolores Anderson 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  
Jamie Bowen Library Memorial Fund  
Dan Boyd, Jr. Library Fund  
The Dr. Haldeen Braddy Library Memorial Fund  
Mrs. Harry Brand Library Fund  
Bill Broadus Library Memorial Fund  
Johnnye Cathoun Library Memorial Fund  
The Eddie Caples Library Memorial Fund  
John Francis Carson 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  
H. E. Crowson Library Memorial Fund  
Mrs. Dante Del Campo Library Memorial Fund  
Employees of the El Paso Electric Company Library Memorial Fund  
Dr. Floyd E. Farquhar Library Memorial Fund

Frank Barron and Mildred Sullivan Fletcher Library Memorial Fund

E. Joseph Franczak Library Memorial Fund  
Major William D. Fuchlow Library Memorial Fund  
Roy I. Glass, Jr. Library Memorial Fund  
Charles A. "Buddy" Glover Library Memorial Fund  
Dr. Gladys Gregory Memorial Library Fund  
John Kenneth Hardy Library Memorial Fund  
Frances Elen Harrison Library Memorial Fund  
Blanca Gomez Hill Library Memorial Fund  
Margaret W. Hilliker Library Memorial Fund  
Dr. Isabell Welsh Hoenes Library Memorial Fund  
Commander Herbert Hunter Library Memorial Fund  
Dr. B. F. Jenness Library Memorial Fund  
Mr. and Mrs. Crawford S. Kerr, Sr. Library Memorial Fund  
Emanuel and Charlotte Klein Library Memorial Fund  
Dr. E. J. Knapp Memorial Book Fund in Physics  
L. Vere and James L. Leasure Library Memorial Fund  
Frank K. MacCallum Library Memorial Fund  
Reverend C. G. Manker Library Memorial Fund  
Bernard Martin-Williams Library Memorial Fund  
John Judy Middagh Library Memorial Fund  
Marvin Nadler Library Memorial Fund  
Mark W. Niemann Library Memorial Fund  
The Optimists Club of Westside El Paso Library Fund  
Elizabeth Cram Polk Memorial Collection  
Eugene O. Porter Library Memorial Fund  
Dean C. A. Puckett Library Memorial Fund  
Joseph M. Ray Library Fund  
Arthur Reardon Library Memorial Fund  
Marion Tappan Rice Library Memorial Fund  
George N. Rodriguez, Sr. Library Memorial Fund  
Nellie Pollard Rodgers Library Memorial Fund  
Ethel Howe Rogers Library Memorial Fund  
John A. P. Romer Library Memorial Fund  
Dr. Arleigh B. Templeton Library Fund  
Judge R. E. Thomason Library Memorial Fund  
H. Brooks Travis Library Memorial Fund  
U.T. 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 for Modern Languages  
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  
Barnery Weiland Library Memorial Fund  
Mrs. Ozelle G. Wishard Library Memorial Fund  
Woman's Auxiliary of U.T. El Paso Library Endowment Fund

### 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.

### 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.

### 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.

### 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.

**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.

**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.

**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.

**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 Lakehome. The scholarship will be awarded to a student majoring 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.

**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.

## 10 / GENERAL INFORMATION

### 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 the earth sciences.

### STUDENT LOAN FUNDS

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

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  
Student Association Emergency Loan Fund  
Women's Auxiliary Emergency Loan Fund

### 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 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.

### 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 U.T. 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 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.





## FACILITIES AND SERVICES

**THE LIBRARY** — The Library is central to the academic program, serving the research and study requirements of students and faculty with a rapidly expanding collection of books, periodicals, microforms, audiovisual materials, documents and maps. As of June, 1981, holdings of the Library include 508,854 books and bound periodicals, 116,684 documents, 4,127 serial and periodical subscriptions, 580,746 pieces of microforms and 67,028 maps. Although the Map Collection provides direct support to Geology and Geography, these holdings represent varied and important resources for all faculty and students.

The University Library, in addition to maintaining efforts to develop collections which strongly support the programs of the University, is an active participant in several cooperative networks and consortia. The Library's memberships in AMIGOS Bibliographic Network and the Center for Research Libraries provide additional 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 at the University. The Mexican and Southwestern Collections, donated over the years by U. T. El Paso Professor John H. McNeely, is a major resource for scholars, and the Carl Hertzog Collection of Materials on print, books and book design is an interesting and valuable collection. Other special collections include the Judaica Collection, the Mexican Documents Microfilm Collection, and the S.L.A. Marshall Collection on Military History.

Latin American and Chicano Studies programs have developed rapidly in recent years, and the Library has added a variety of resources, both print and nonprint, to meet the study and research needs of these programs. New Library services have also been introduced to serve these growing fields of study.

The Science Library was added as a branch to serve the areas of Mathematics, Chemistry and Physics in 1970, and the Education Library branch was established in 1972. Both collections have extensive holdings of books, periodicals and other materials to serve students and faculty in these fields. In September, 1976, the Nursing/Medical Library became a branch of the University Library. Specialized materials in the Nursing/Medical Library include 12,000 books and 335 journal subscriptions. In 1978, the Library Annex was opened to house the Science Library collection as well as materials in the Biosciences and Engineering.

The Library staff includes 20 professional positions, 50 classified positions and approximately 100 student assistants. The Library is open 92 hours per week with some departments and branch libraries maintaining shorter schedules.

**THE COMPUTER CENTER** — The University 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 and processing for the administrative offices, and the computing needs for instruction and research in the academic departments.

Direct instruction in the area of computers through the Computer Science Program offered jointly by the Colleges of Business, Engineering and Science is augmented with computer-aided instruction in many other fields. 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-J1 with 1 Megabyte of real memory and more than 1,500 Megabytes of on-line direct access

storage. This computer runs the McGill University System for Interactive Computing (MUSIC) in VM/370. There are more than 35 terminals available for faculty and student use. MUSIC runs interactively many of the standard language packages.

The second computer is an IBM 360/65 with 2.5 Megabytes of main memory and 2,000 Megabytes of on-line direct access storage. This computer runs the OS/MVT/HASP Control System. The administrative needs of the University are handled by the ENVIRON/1 System using TOTAL on the IBM 360. This system supports 48 terminals in the various administrative areas. This system has two remote job entry stations, local job entry capability and remote communication to the IBM 4331.

Software installed for academic support includes various Plotting Packages, Statistical Packages including SPSS, BMD, NUCROS and STATPAK; and Language Compilers including ALGOL-W, AGOL-68, CA-SORT, SNOBOL, LISE, WATFIV, WATBOL, PASCAL, as well as the standard IBM supplied 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. The Machines, Systems Programming, Production Control, Data Entry, Academic Users Services and a small user area are located in Bell Hall. 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 staff 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.

SRL specializes in atmosphere and acoustic research and instrumentation. It has investigated virtually every aspect of every parameter of the atmosphere and has developed specialized instruments for measuring and testing these parameters; some of the instruments are being considered for patents. Studies in the life sciences have included cardiac, dental, and orthopedic research. SRL personnel have journeyed to Antarctica, Hawaii, Puerto Rico, and all over the continental United States for research purposes.

SRL is open to proposals in various fields of the physical sciences, engineering, mathematics, the life sciences, and allied areas, and is able to offer administrative and technical support to all areas of research at The University of Texas at El Paso.

**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 investigating 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 inter-ethnic 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 Southwest of the 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 inter-departmental spectrum from various Departments of the Colleges of Liberal Arts and Education, and from the Center for Inter-American Studies at U.T. 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/U.T. El Paso, funded by the Texas Colleges Bicentennial Program, Inc., and (4) Bilingual/Bicultural Education Symposia project funded by the Excellence Fund. Funding for other projects is pending.

**THE JOHN W. KIDD MEMORIAL SEISMIC OBSERVATORY** is in continuous year-round operation and is part of the Worldwide 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 studies of 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 for seismic and radioactivity measurements and a state-of-the-art seismic recording system.

**THE CENTER FOR CONTINUING EDUCATION** has a three-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.
3. Provides extension courses for academic credit.

**THE BUREAU OF BUSINESS AND ECONOMIC RESEARCH** was established on the campus in September, 1963. The Bureau presently has as its objectives the continuous survey of the economy of El Paso and its immediate environs, and conducting research to build up information data resources for the Border region. Additionally the Bureau conducts, supervises, and publishes studies of interest to the University, the academic and the business communities.

The Bureau vigorously seeks and supports funded research in all areas related to business and/or economics.

The Bureau has been designated a State Affiliate for the

Texas State Data Center. As such, the Bureau is building an updatable, computerized data bank to serve the community.

The Bureau publishes the **Southwest Business and Economic Review**, a quarterly review that publishes academic articles and research reports of interest to the academic and business community. The Review also publishes a quarterly report on local economic barometers and a summary of the El Paso economy based on a monthly survey conducted by the Bureau. The publication is distributed to many of the business firms in El Paso, Colleges of Business throughout the nation and approximately 2000 subscribers.

**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 INTER-AMERICAN AND BORDER STUDIES INSTITUTE** 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 B.A. degree in Latin American Studies and the concentration in Latin America, leading to an adjunct Latin-American area studies credential that can be taken along with, or independent of, any regular undergraduate or graduate degree program. 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 being 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 U. T. El Paso and La Universidad Autonoma de Chihuahua.

**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 IASHP coordinates a broad range of courses taught in Spanish which the first-year student may take while studying English as a foreign language. The Program provides academic advising for all students entering the University under its auspices. It is administered as part of the Linguistics Department. For further information contact Dr. Charles G. Elerick, The Inter-American Science and Humanities Program, U.T. El Paso, El Paso, TX 79968.

**THE CENTER FOR EXECUTIVE DEVELOPMENT** is a recently formed entity of the College of Business Administration. In response to our growing community's needs, the Center is designed to provide the educational resources to allow qualified individuals the opportunity to become capable,

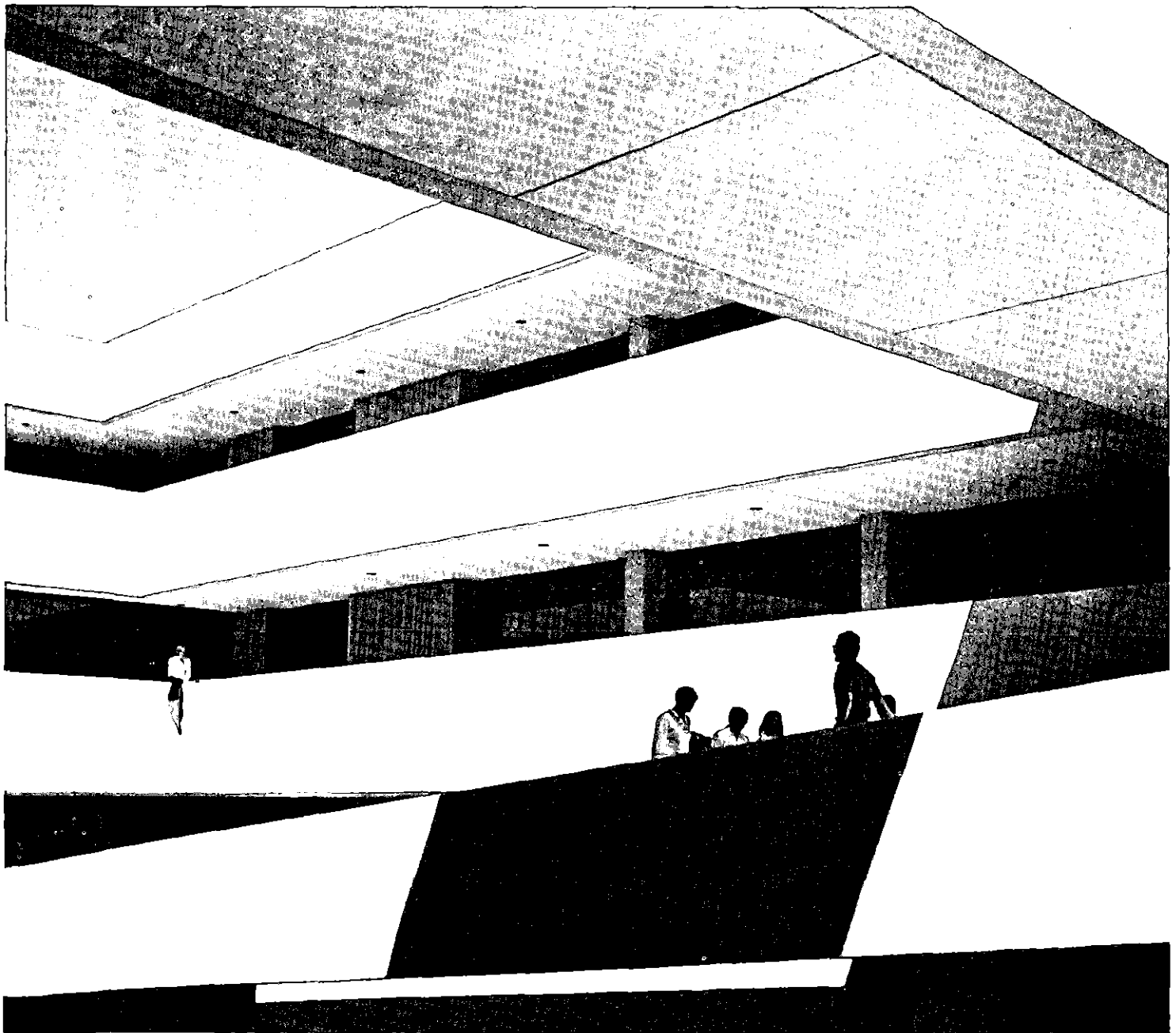
skilled, and future-minded decision-makers in business, industry, government, and the professions at all managerial levels. The Center's target area is the Southwestern states and Mexico.

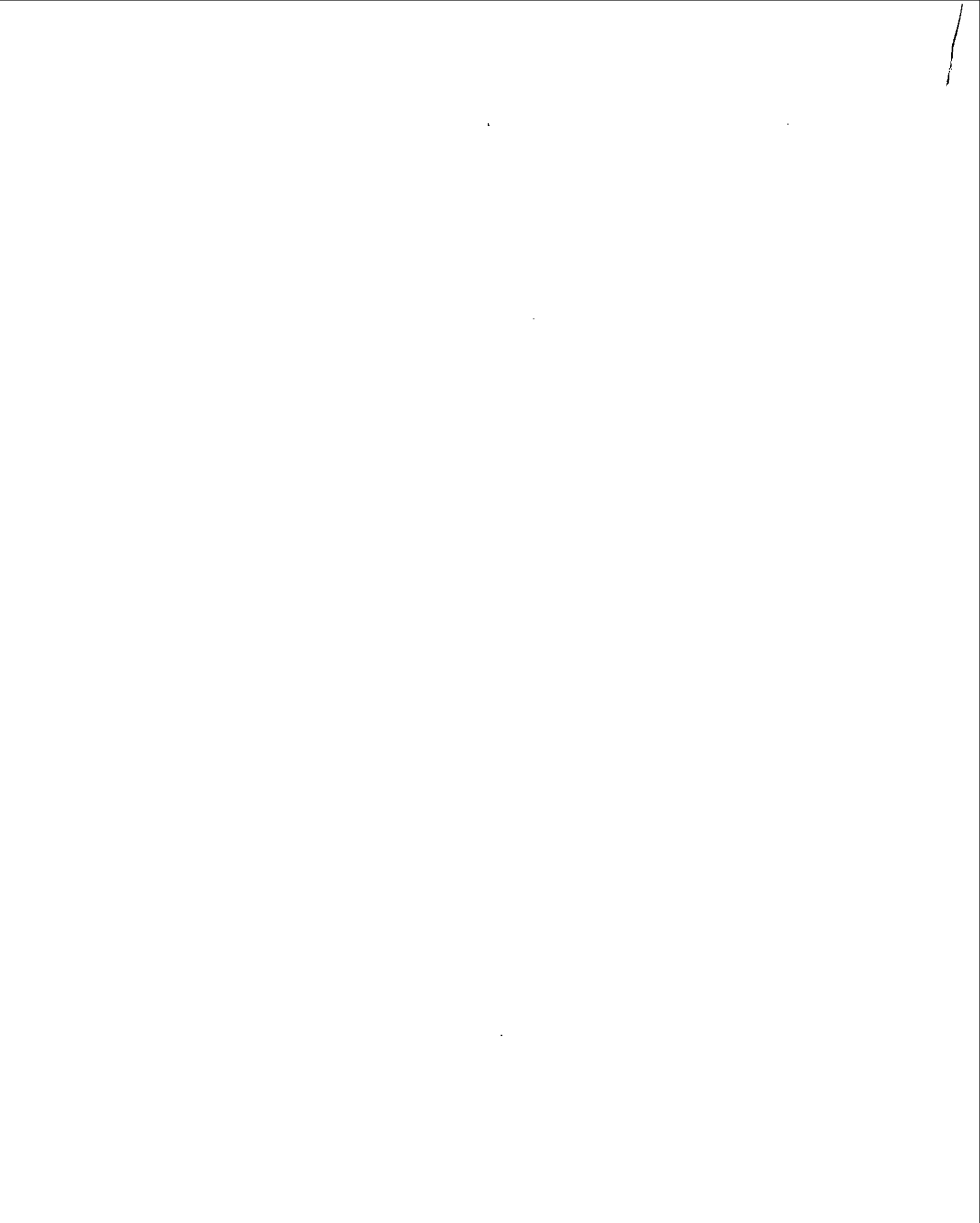
Through workshops, seminars, conferences, and symposia, the Center offers dynamic, "real-world" courses for individual growth and organizational success. To this end, the Center presents a continuing series of seminars on a wide variety of topics aimed at fostering executive development through the acquisition of knowledge and experience. The Center also produces specific in-house presentations for clients with special needs. In addition, the Center can assist other groups in cooperative programs; for example, developing the means for professional certification.

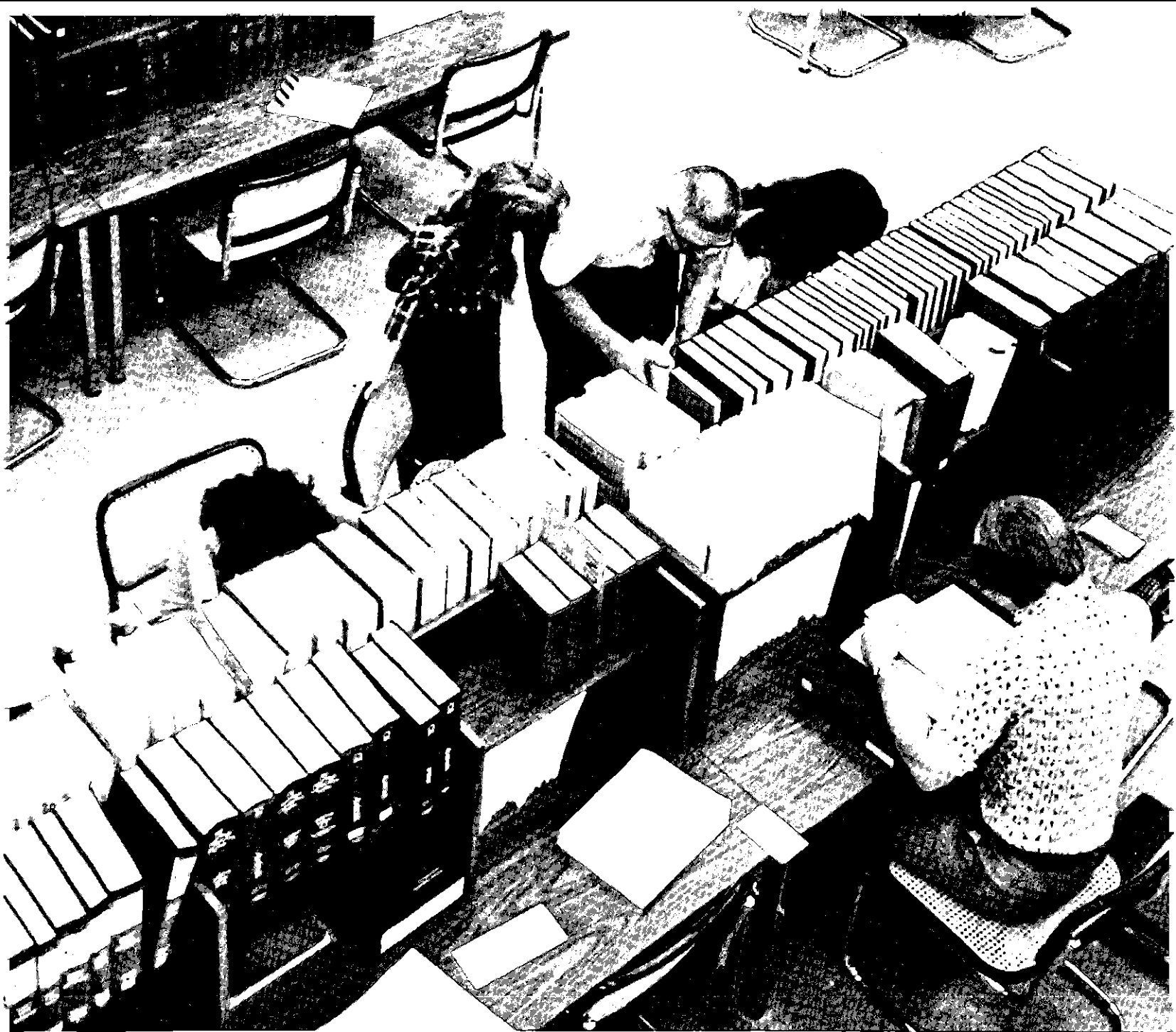
Programs may vary in length from one-day, to weekend sessions, to a number of weeks. University faculty, local business consultants, and nationally and internationally recognized talent are employed to enhance the quality of seminars, lectures, and workshops.

By the spring of 1982 the Center will be housed in the newly constructed building of the College of Business Administration. The Center's modern accommodations will have the latest in facilities and equipment, including the ability to provide simultaneous translation of three languages during programs.

The Center for Executive Development realizes that top-flight education does not end with graduation, and the Center's *raison d'être* is to provide the "lifetime learning" link with the business community.







**Admission to the University  
Financial Aid  
Undergraduate Scholarships**

# **Undergraduate Admission and Financial Aid**

# UNDERGRADUATE 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 your review of the programs described in this catalog, your visit to our campus for a closer look, and your application.

The Office of Admissions and Records is responsible for evaluating applicants for admission according to Texas state law, regulations of the University of Texas Board of Regents, and criteria set by the faculty of U.T. El Paso. For information about your admission status or evaluation of your transfer credit, contact:

The University of Texas at El Paso  
Office of Admissions and Evaluation  
209 Administration Building  
El Paso, Texas 79968  
(915) 747-5576

In addition, the office serves as an information resource to high school counselors, handles requests for general information about the University, and is responsible for arranging visits to the campus by prospective students and their parents. We look forward to hearing from you, and we can be reached as follows:

The University of Texas at El Paso  
Office of Special Academic Services  
115 Administration Building  
El Paso, Texas 79968  
(915) 747-5896

All forms needed for admission are available at either of the above offices, and most are also available in counseling offices at El Paso area high schools. We will be happy to mail forms if you request them, but we believe we can be of better service to you if you visit our offices in person.

## ADMISSION POLICIES AND PROCEDURES

The credentials required for admission to The University of Texas at El Paso are determined by your academic background. Select the category below that best describes your academic preparation and submit the appropriate documents to the Office of Admissions and Evaluation for consideration.

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

The University reserves the right to review all admissions credentials, including score reports and standardized tests, on an individual basis.

### I. REGULAR ADMISSION

- A. **HIGH SCHOOL GRADUATES:** with no previous college work who graduated from high school within the past 5 years.

**Documents required:** Application; final, official high school transcript; official SAT or ACT scores; health form.

Graduates of accredited U.S. high schools who meet the minimum entrance requirements described below are eligible for admission to The University of Texas at El Paso. In addition to the graduation requirements set by the high schools, applicants should prepare themselves for college-level work by tak-

ing at least the indicated number of years of the following courses:

Colleges of Liberal Arts, Business, Education, Science, and Nursing	
English	3
Mathematics	2
(To include at least 1 year of Algebra and one year of Plane Geometry for all Colleges except Engineering)	
Natural Science	2
(To include Chemistry and Physics for the College of Nursing)	
Social Studies	2
Foreign Language or additional Natural Science or Social Studies	2
Electives	As required
College of Engineering	
English	3
Algebra	2
Geometry	1
Trigonometry	½
Chemistry	1
Physics	1
Social Studies	2
Foreign Language or additional Natural Science or Social Studies	2
Electives	As required

Students who lack adequate preparation in these areas may still be considered for admission to the University based on their entrance examination scores and their final high school rank.

The Scholastic Aptitude Test (SAT) or the American College Test (ACT) is required of all students graduating from English-speaking high schools within the past five years. Students graduating in the upper half of their class must score a minimum of 700 on the SAT or 15 on the ACT. Students graduating in the lower half of their class must score a minimum of 800 on the SAT or 18 on the ACT.

**EARLY NOTIFICATION:** For early notification of acceptance, have your high school send verification of your test scores, approximate class rank, and expected date of graduation. An official transcript is not necessary for early notification. A form sent by your registrar or counselor stating this information will suffice. After graduation, have a final, official transcript sent showing your date of graduation and class rank. Your admission record will not be considered complete until this final transcript has been received.

- B. **HIGH SCHOOL GRADUATES:** with no previous college work who graduated from high school more than 5 years ago.

**Documents required:** Application; final, official high school transcript; health form.

The academic preparation described above is recommended. Students who lack adequate preparation in these areas will be considered for admission on an individual basis.

- C. **APPLICANTS WHO HAVE NOT GRADUATED FROM HIGH SCHOOL**

**Documents required:** Application; health form; official GED scores; SAT/ACT or PAA scores.

Individuals who did not finish high school but who are over 18 years of age and whose high school class has already graduated can qualify for admission to the University on the basis of an average standard score of 45 on the Test of General Educational Development (GED). This test can be administered to qualified residents of Texas by the University Counseling Service and other local test centers and can be taken in English or

Spanish. Applicants passing the English version must also submit SAT or ACT scores; those passing the Spanish version must also submit PAA (Prueba de Aptitud Académica) scores. Applicants passing the Spanish version of the GED are admitted to the bilingual Inter-American Science and Humanities Program.

#### D. TRANSFER STUDENTS

**Documents required:** Application; complete, official college transcripts from each school attended; health form (official high school transcript and official SAT or ACT scores are required of students transferring fewer than 30 semester hours)

A transfer applicant from a fully-accredited institution who has completed at least 30 semester hours of college work with a "C" average and has left that institution in good standing is eligible for admission to The University of Texas at El Paso. If the transfer student has earned fewer than 30 semester hours of college work and was graduated from high school within the past 5 years, he must submit SAT or ACT scores and a high school transcript before an admission decision can be made. A student who does not have an overall "C" average, but who has satisfactory SAT or ACT scores, may be admitted on scholastic probation.

An applicant who has attended other colleges or universities may not disregard any portion of the college career and record or apply for admission on the basis of a partial academic record. A complete, official transcript from each college or university attended must be provided, regardless of the amount of work completed or of the intent to have the credit transferred.

Transfer students wishing to attend U.T. El Paso for the summer only (summer transients) should state this at the time they apply for admission. A letter of Good Standing from the Registrar of the school they attend on a regular basis may be submitted in place of an official college transcript.

A transfer student who is on academic suspension and 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 U.T. El Paso. If he is on scholastic probation and has not earned at least 9 semester hours at that school, one long semester must intervene before admission to U.T. El Paso. A student who is ineligible to return to the school last attended or whose records cannot be released by that institution will not be admitted to the University.

In general, transfer work earned at a fully-accredited institution will be evaluated on the same basis as if the work had been completed at U.T. El Paso, provided that the transferred work is included in the core curriculum of the degree the student is seeking. Subject to core curriculum requirements, junior college credit (freshman and sophomore levels) will be accepted up to a maximum of 66 semester hours.

#### E. INTERNATIONAL STUDENTS

**Documents required:** Application; satisfactory entrance examination scores; complete, official high school transcript; acceptable statement of financial support; complete, official college transcripts, if applicable; health form.

**Entrance examination requirement:** Students from Spanish-speaking countries who are not proficient in English and are seeking admission into the Inter-American Science and Humanities Program: PAA (Prueba de Aptitud Académica) of 900 or higher.

Students from other non-English speaking countries: TOEFL (Test of English as a Foreign Language) of 500 or higher.

Students from English-speaking countries: TOEFL of 500 or higher or SAT of 800 or higher (minimum of 400 on verbal portion)

The University welcomes the applications of qualified international students. Prior to admission, the applicant must present documentation indicating, to the complete satisfac-

tion 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 him for admission to recognized universities in his home country. Complete, official transcripts showing classes taken and grades earned in all secondary school 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.

All admission documents and test results must be received by the University at least 60 days before the beginning of the semester for which the student is applying. All entrance examination results should be reported to the University directly from the testing agency.

The University can only accept complete, official or notarized copies of high school and college work sent directly from each school involved. If the original documents are in the student's possession, copies may be submitted upon arrival at the University.

Financial assistance for international students is extremely limited. Each student must furnish a statement of financial support from his parent or sponsor stating that they are able to finance the student's education while he is 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.

I-20 forms cannot be issued until a student's admission has been completely cleared and his application, TOEFL, high school transcript, college transcript, health form, and financial statement have been received and processed by the University.

#### RETURNING U.T. EL PASO STUDENTS

Students who have been out of school for more than 12 months must submit an application for re-admission to the University. Students who have attended another college or university since last attending here must have an official transcript of that work sent so it can be evaluated and added to the student's U.T. El Paso file.

#### II. SPECIAL ADMISSION

##### A. PROVISIONAL ADMISSION PROGRAM (Texas Residents Only)

**Documents Required:** Application; complete, official high school transcript; official SAT or ACT scores; health form.

The Board of Regents of the University of Texas System has established at all four-year component institutions an admission option for high school graduates whose admission credentials do not qualify them for regular admission. This provisional admission opportunity is available to residents of Texas.

A provisional student must earn an overall "C" (2.0) average in all courses taken during his first semester of enrollment. He must also complete at least 9 hours of credit with grades of "C" or better selected from at least two of the following areas: English, Mathematics, Natural Science, or Foreign Languages.

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

##### B. TRANSIENT STUDENTS (SUMMER ONLY)

**Documents Required:** Application; Letter of Good Standing from home institution.

A full-time student at another college or university who does not plan to pursue a degree at U.T. El Paso and wishes to at-



tend for the summer only should state this at the time he applies for admission. A letter of Good Standing from the Registrar of the school he attends on a regular basis may be submitted in place of an official college transcript.

A transient student who decides at a later date to attend the University during a long semester must provide the admission documents required for Regular Transfer Admission (I-D).

#### C. 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. The program seeks to facilitate the progress of students who are extremely capable in one or more academic areas by allowing them to enroll concurrently in secondary and university courses.

Depending on the needs of individual students, the Junior Scholars Program offers academic enrichment and/or acceleration. It offers enrichment in the sense that a student may use the concurrent enrollment option to explore subjects which would not normally be a part of the secondary curriculum. Alternately, the program offers acceleration for the student who wishes to accumulate university credit in foundation courses.

An important feature of the Junior Scholars Program is the concept of simultaneous credit. Through arrangements with individual school districts, students participating in this program may be granted dual credit for university coursework. For additional information on the Junior Scholars Program, contact Dr. Jan Cavin, P.O. Box 131, U.T. El Paso, El Paso, Texas 79968.

#### D. CONDITIONAL ADMISSION

**Documents Required:** Application; health form; complete, official high school transcript, if applicable; complete, official college transcript, if applicable.

Students who have attended a non-accredited high school or university may be admitted to the University on a conditional basis. Courses completed at a non-accredited college will not be officially considered for evaluation as transfer credit until after the student has completed 30 semester hours at U.T. El Paso with a "C" average. At that time the student's academic dean can recommend transfer credit.

Enrollment conditions may be placed on student's enrollment as determined by the Office of Admissions and Evaluation.

#### E. INDIVIDUAL APPROVAL

**Documents Required:** Application; health form; letter of petition. Students whose individual circumstances are highly unusual with respect to their admissions credentials may petition the University for acceptance on an individual approval basis. This should be done in writing to the Associate Director of Admissions, The University of Texas at El Paso. The Associate Director of Admissions will individually review each case and, when necessary, conduct personal interviews with the candidates for individual approval admission. Each applicant will be notified by mail regarding the admission decision.

#### F. INCOMPLETE ADMISSIONS CREDENTIALS

Students who present unofficial admission documents that indicate that the student does not meet the criteria for regular admission may be admitted pending receipt of the official documents described above. If the official documents are not received during the student's first semester of attendance, registration material will not be prepared for subsequent semesters, and official transcripts of work completed at U.T. El Paso will not be released.

## FINANCIAL AID

### Introduction

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 counselor's 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, enrolled on a full-time basis (12 hours or more), whose applications are received by the deadline of April 1.

### BASIS FOR AWARDS

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.

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 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 \$1,000.00 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 (CSS) Financial Aid Form (FAF) for the aid period.

### COSTS FOR ATTENDING THE UNIVERSITY OF TEXAS AT EL PASO

For detailed cost breakdown of direct and indirect educational cost, contact the Financial Aid Office for written material.



## ENROLLMENT REQUIREMENTS

The minimum hours listed below are required by law for participation in:

State Need Grant	12 hours
Full Basic Grant(PELL)	12 hours
Tuition and fee waivers	12 hours*
National Direct Student Loan	6 hours**
Hinson-Hazlewood Loan	6 hours**
Supplemental Educational Opportunity Grant	6 hours**
College Work-Study	6 hours**
Law Enforcement Programs	6 hours**
Nursing Loan and Scholarship	6 hours**

\*Graduate students will be considered for fee waivers if taking nine (9) graduate level hours.

\*\*Six (6) hours do not meet normal academic progress requirements.

## 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 his 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 limitations, 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.

## FINANCIAL AID ACADEMIC ELIGIBILITY CRITERIA

The University of Texas at El Paso, in accord with federal regulations, requires that in order for a student to be eligible for Financial Aid, he must be in good standing and must be making satisfactory academic progress. This applies to all types of aid: grants, loans, and work-study. The University has defined good standing and satisfactory progress as follows:

- Good Standing:** A student's academic standing is determined by the Cumulative Grade Point Average (CGPA). Any student with a cumulative GPA of 2.0 or better is in good standing.
- Satisfactory Academic Progress for Financial Aid:** Satisfactory academic progress involves not only being in good standing, but also making progress toward completing the requirements for an academic degree. A student receiving financial aid is considered to be making satisfactory academic progress upon completing the number of semester hours for which financial aid was awarded. An undergraduate student who has been enrolled for ten long semesters

will be subject to review with regard as to why the student has not yet obtained an undergraduate degree. A graduate student who has been enrolled for five semesters as a graduate student will be subject to review with regard as to why the student has not yet obtained a graduate degree.

The following procedures will be applied to students who fail to meet the above standards:

- A student who fails to meet either the Good Standing or the Satisfactory Academic Progress requirement will be placed on Financial Aid Probation for one semester. During that semester the student will be allowed to continue receiving awarded financial aid. A letter informing the student of the probationary status will be given to the student with a copy of these eligibility criteria.
- A student who has been placed on Financial Aid Probation must come to the Financial Aid Office as soon as grades for the probationary semester are available, and prior to registration for the next semester. This must be done in order to determine financial aid eligibility for the subsequent semester.
  - If at the end of the semester of Financial Aid Probation the student has achieved Good Standing AND has met the Satisfactory Progress criteria, the Financial Aid Probationary status may be removed and the student may continue to receive financial aid.
  - If any student fails to achieve a cumulative GPA of 2.0 during the first semester of Financial Aid Probation, but does earn a semester GPA of 2.0 AND meets the Satisfactory Progress criteria, that student will remain on Financial Aid Probation, and may continue to receive financial aid for the next semester.
  - If at the end of any semester of Financial Aid Probation both the semester and cumulative GPA are below 2.0, all financial aid will be terminated. Additionally, when a student is placed on Academic Suspension, even though the semester GPA may be 2.0 or above, all financial aid will be terminated. If at the end of any semester of Financial Aid Probation a student fails to meet the Satisfactory Academic Progress criteria, all financial aid will be terminated. Any student who has been placed on Financial Aid Probation previously, has been removed from that status and is subsequently placed on Financial Aid Probation again, will be subject to review to ascertain unusual patterns of performance, withdrawals, etc.
- A student whose financial aid has been terminated can become eligible for financial aid again by attending one long semester or two summer sessions (on at least a half-time basis) at the University of Texas at El Paso, without financial aid, during which time Good Standing must be achieved AND Satisfactory Academic Progress criteria must be met.

## APPEAL PROCESS

An Appeal Process is available to any student who has been determined to be ineligible for continued Financial Aid.

- The student obtains from the Financial Aid Office an appeal form on which the Financial Aid Office states the reason for which the student has been determined to be ineligible, the amount of aid for which the student has been determined to be ineligible, and the amount of aid which the student may receive if eligible. The student must attach to this form the following: a current transcript, a degree plan for students who have completed 60 hours or more, and the student's own written explanation of the circumstances which brought about the ineligibility.

- B. All items are forwarded to the Financial Aid Internal Review Committee (FAIR) through the Financial Aid Office. This Committee makes its recommendation to the Director of the Financial Aid Office, who makes the final decision.
- C. Any student anticipating the necessity of making an appeal should be prepared to pay their own registration fees in the event that the appeal is not approved or is approved after the deadline for paying registration fees. The Financial Aid Office will not recommend any extension of the fee payment deadlines for these students.

### REVOCATION OF AID

The Financial Aid Office reserves the right to review and cancel awards at any time for the following reasons:

1. Failure to meet and maintain the minimum course load requirements.
2. Failure to maintain an acceptable academic record: Good Standing and Satisfactory Academic Progress.
3. Changes in the financial status of the recipient or his family.

When a student accepts financial aid it is understood that the student is aware of the conditions under which the aid is offered and must agree to meet all of the necessary requirements.

There may be times when an exception to the Financial Aid Eligibility rules should be made. This can only be made by the Director of Financial Aid.

### TYPES OF FINANCIAL ASSISTANCE

#### GRANTS

##### Pell Grant (formerly called Basic Grant Program)

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 Eligibility Report" (SER) within six weeks after submitting the application. The SER 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 U.T. El Paso, and an award schedule provided by the Pell Grant Program. The average award for the Pell Grant recipients attending U.T. El Paso has been between \$600 and \$1,000. Undergraduate students must apply each year for the Pell Grant. Students must maintain satisfactory progress in order to maintain eligibility 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 particular grant.

##### Texas Public Educational Grant (TPEG)

This grant provides financial assistance to students with a 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.

#### Tuition Waiver Scholarship

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

#### 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 eighteen 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 one-half time basis or more.

#### 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 the 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. The following sample repayment tables demonstrate the repayment associated with the varying total dollar amounts of obligation. Please note that the monthly payments represent approximate amounts.

Amount Borrowed	No. Months	7% Minimum Payment	No. Months	4% Minimum Payment
\$ 500	18	\$30/mo.	18	\$30/mo.
1000	36	31/mo.	35	30/mo.
2500	108	32/mo.	94	30/mo.
3500	120	41/mo.	120	34/mo.
5000	120	58/mo.	120	49/mo.

**NURSING STUDENT PROGRAMS**

**Nursing Student Loan**

Nursing loans provide funds for undergraduates in nursing. The interest rate is 3% and repayment begins immediately if the student changes major from nursing. The major criterion for this program is exceptional need.

**Nursing Scholarships**

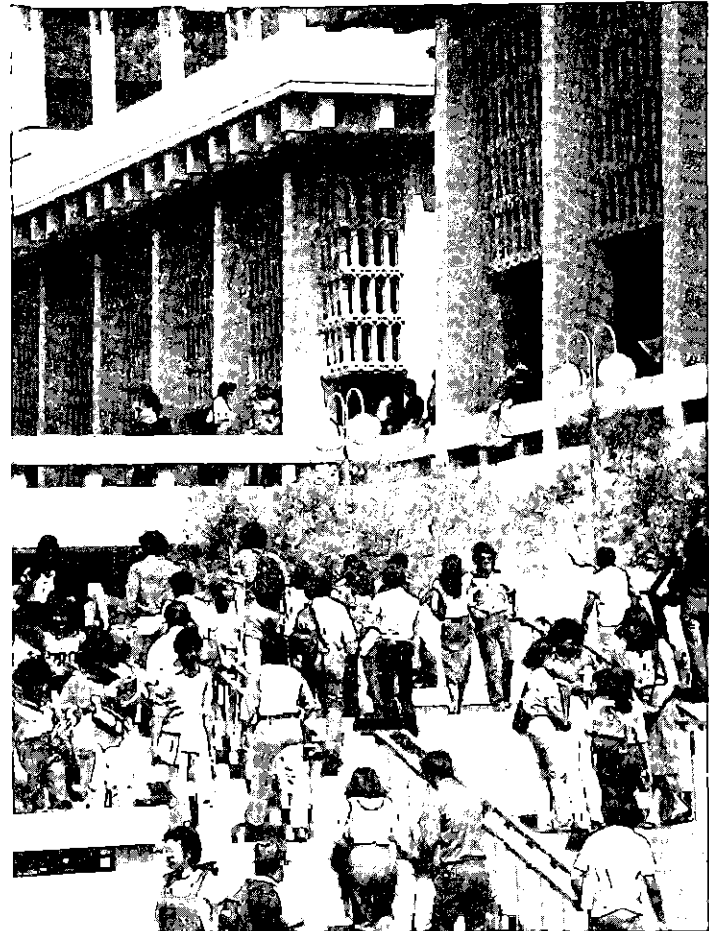
These scholarships are awarded to applicants who are enrolled and demonstrate good standing as full-time nursing students. To receive scholarship assistance, an applicant must have financial need and require such assistance to pursue the specified course of study.

**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 4% a year with a minimum service charge of fifty (\$.50) cents.

**Student Book Loan Program**

A Student Book Loan Program is maintained to assist students in meeting their book cost. 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 4% a year with a minimim 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.



**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.

Among the many available scholarship awards are the Presidential Scholarships, the Stevens Scholarships, the Clardy Fox Scholarships, the University Endowed Scholarships and the Guranteed University Scholarships. Awards given by the Scholarship Office usually range from \$400 to \$1,500 annually. 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.

To be considered for an academic scholarship, an entering freshman must have a high school grade point average of "B" (3.0) or above. Transfer students must also have a 3.0 grade point average and have been enrolled the two most recent long semesters as a full-time student at the institution previously attended. Obviously, scholarship applicants with the highest scores will receive the larger awards. Prospective students may apply for an academic scholarship as early as the fall semester of their senior-year in high school.

Persons wishing to apply for an undergraduate scholarship

should follow these procedures:

1. Secure an Undergraduate Scholarship Application from the Office of Special Academic Services located in 203 Administration Building.
2. Fill out and return application to the Scholarship Officer, Office of Special Academic Services, 203 Administration Building.
3. Complete the application process for University admission outlined earlier in this section of the catalog. High school transcripts must include the following:
  - (1) Grade Point Average
  - (2) Present Class Rank
  - (3) SAT or ACT scores

National Merit Finalists automatically receive a \$250 annual scholarship provided they notify the Scholarship Office when they enroll at U.T. El Paso in the Fall semester following high school graduation. This stipend is in addition to any other scholarship the individual might be awarded.

For students interested in music service award scholarships or drama and forensic service award scholarships, please contact the Department Chairperson. Graduate scholarships are administered through the Office of the Graduate Dean.

For additional information regarding undergraduate scholarships, write the Scholarship Officer, Office of Special Academic Services, Box 131, U.T. El Paso 79968 or call (915) 747-5890.





**Tuition and Fees**  
**Housing Expenses**  
**Residency Regulations**

# **Financial Information**

# TUITION AND FEES

Registration fees are payable on a semester basis at the beginning of each semester and must be paid in full before the student will be permitted to enter class or laboratory. The Business Office does not cash checks. However, checks are accepted in settlement of obligations to the University provided they are in the amount owed the University, and the maker has not previously had a check dishonored.

## Summary of Tuition and Mandatory Fees

The fees shown in these schedules must be paid by all students registering for credit. The tuition and mandatory fees listed include a General Fee for Availability of Facilities of \$6.00 per semester hour, and a Student Services Fee of \$4.00 per semester hour (up to a maximum of \$48.00). Laboratory Fees, Fine Arts Fees, and Transportation Fees are charged, in addition to the scheduled fees, in those courses where applicable. All fees are subject to change by the State Legislature without notice. It is the student's responsibility to know the fees which are in effect for each semester in which the student enrolls.

### Regular Session (Each Semester)

Semester Hours	Resident Students	Non-Resident and Foreign Students	Nursing Students
1	\$60.00	\$50.00	\$30.00
2	70.00	100.00	40.00
3	80.00	150.00	50.00
4	90.00	200.00	60.00
5	100.00	250.00	70.00
6	110.00	300.00	84.00
7	120.00	350.00	98.00
8	130.00	400.00	112.00
9	140.00	450.00	126.00
10	150.00	500.00	140.00
11	160.00	550.00	154.00
12	170.00	600.00	170.00
13	178.00	646.00	176.00
14	188.00	692.00	182.00
15	198.00	738.00	188.00
16	208.00	784.00	194.00
17	218.00	830.00	200.00
18	228.00	876.00	206.00
19	238.00	922.00	212.00
20	248.00	968.00	218.00
21	258.00	1,014.00	224.00

### Summer Session (Each Term)

Semester Hours	Resident Students	Non-Resident and Foreign Students	Nursing Students
1	\$35.00	\$50.00	\$30.00
2	45.00	100.00	40.00
3	55.00	150.00	50.00
4	65.00	200.00	60.00
5	75.00	250.00	70.00
6	85.00	300.00	85.00
7	98.00	350.00	95.00
8	112.00	400.00	105.00
9	126.00	450.00	115.00
10	140.00	500.00	125.00
11	154.00	550.00	135.00
12	168.00	600.00	145.00

## Tuition

Tuition rates are established by the Legislature of the State of Texas. Rates for each semester of the Long Session and each term of the Summer Session are:

**Resident Students** — \$4.00 per semester credit hour with Long Semester minimum of \$50.00 and Summer Term minimum of \$25.00. Final credit-hour requirement for thesis or dissertation only — \$12.00 for three semester credit hours.

**Non-Resident and Foreign Students** — \$40.00 per semester credit hour (no minimum). Final credit-hour requirement for thesis or dissertation only — \$50.00 for three semester credit hours.

### Nursing Students:

Semester Hours	Long Session Semester	Summer Session Term
1-5 (minimum)	\$20.00	\$20.00
6	24.00	25.00
7	28.00	25.00
8	32.00	25.00
9	36.00	25.00
10	40.00	25.00
11	44.00	25.00
12 (or more)	50.00	25.00

## Laboratory Fees

Per Semester

### ART

3201, 3205, 3225, 3231, 3301, 3305, 3325, 3331, 3335, 3341	\$4.00
3401, 3405, 3425, 3431	6.00
3202, 3203, 3204, 3208, 3213, 3214, 3218, 3232, 3302, 3303, 3304, 3308, 3313, 3314, 3318, 3323, 3324, 3332, 3342, 3403	8.00

### BIOLOGICAL SCIENCES

<b>Biology</b> 1107, 1108, 1212, 1215, 1217, 1319, 1324, 1326, 1328, 1410, 1498, 2423, 2498, 2502, 3426, 3498, 3502, 3505, 3514, 3515, 3518, 3519, 3520, 3522, 3524, 3526, 3529, 4502, 5502	8.00
<b>Botany</b> 1334, 1336, 1340, 1473, 2338	8.00
<b>Microbiology</b> 1241, 1328, 1336, 1344, 1346, 1452, 1454, 2348, 1456	8.00
<b>Zoology</b> 1365, 1367, 1369, 1455, 1457, 1471, 1477, 1479, 3473, 1481	8.00

### BUSINESS ADMINISTRATION

<b>Administrative Services and Business Education</b> 3101, 3102, 3103, 3104, 3301, 3302, 3305, 3306	5.00
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### CHEMISTRY

1310, 1324, 1325, 1326, 1351, 1352, 1465, 1470, 1476, 2106, 2214, 2321, 2322, 2412, 2476, 3476, 4420	8.00
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### DRAMA AND SPEECH

<b>Speech</b> 1104	\$2.00
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**ENGINEERING**

Civil	
4456, 4460, 4470 .....	\$2.00
2396, 3313, 4390, 4448 .....	4.00
1234, 1236, 1453 .....	6.00
Electrical Engineering	
1205, 1209, 1251, 3369, 3442, 3478, 4377 .....	5.00
2310, 2311, 2412 .....	8.00
Mechanical and Industrial	
Industrial 4377 .....	4.00
Mechanical 3305, 3501, 4354, 4451, 4465 .....	4.00
Metallurgical	
1203, 3412, 3413, 3541, 4306, 4307, 4415 .....	6.00

**GEOLOGICAL SCIENCES**

3106, 3472, 3580, 4323 .....	3.00
1101, 1102, 3103, 3104, 1216, 1217, 3304, 3305, 3310, 1318, 3325, 1459, 3324, 3327, 3330, 3359, 3530, 3535, 3542, 3545, 3546, 4216, 4217, 4220 .....	4.00
3536, 4458 .....	5.00
3208 .....	8.00

**HEALTH AND PHYSICAL EDUCATION**

1101 .....	4.00
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**LINGUISTICS**

1110, 1111, 1112, 1113 .....	2.00
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**MODERN LANGUAGES**

French 4101, 4102; German 4101, 4102; Italian 4101, 4102; Latin 4101, 4102; Russian 4101, 4102; Spanish 4101, 4102, 4103, 4104 .....	2.00
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**NURSING**

7302, 7303, 6305, 6306, 6307, 6310, 6317, 6318, 6320, 7370, 7371, 6401, 6405, 6410, 7410, 7411, 6419, 7471, 7472 .....	4.00
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**PHYSICS**

1120, 1121, 2343, 2446, 3101, 4103, 4104 .....	8.00
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**PSYCHOLOGY**

1321, 1322, 3401, 3411, 1424 .....	3.00
3523 .....	5.00

**Fine Arts Fees****ART**

3402, 3403, 3404, 3413, 3414, 3432, 3502 (except Art History and Art Education) .....	\$10.00
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**MUSIC**

Applied 2181, 2191, 2391 .....	20.00
Applied 3181, 3191, 3391, 4191, 4391 .....	35.00

**Transportation Fees****BIOLOGICAL SCIENCES**

Biology 6425 — Transportation fee varies according to where course is based.

**GEOLOGICAL SCIENCES**

Geology 6465 .....	\$150.00
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**SOCIOLOGY-ANTHROPOLOGY**

Anthropology 6247, 8447 — Archeology Field Courses—Transportation fee varies according to where course is based.

**Other Mandatory Fees**

**GENERAL FEE FOR AVAILABILITY OF FACILITIES** — In accordance with the provisions of Article 2909c, V.C.S., the Board of Regents of The University of Texas System requires that every student who registers in The University of Texas at El Paso pay a compulsory General Fee for Availability of Facilities (short title — General Fee) of \$6.00 per semester hour. Refund of this fee for students withdrawing or dropping courses is made on the same basis as refund of tuition.

**STUDENT SERVICES FEE** — Under authority of legislation enacted by the 56th Legislature, the Board of Regents has authorized a Student Services Fee in the amount of \$4.00 per semester hour, with a maximum of \$48.00. Students who do not pay the maximum \$48.00 fee will be excluded from some student activities. Students have the option to pay the full amount to obtain full student activities card usage. Activities supported from this source of income are Intercollegiate Athletics, Cheerleaders, Forensics, Student Health Service, Identification Cards, Intramural and Recreational Services, Student's Attorney, Music Performing Activities, University Players, Student Programs, Student Publications, Speech and Hearing Center, Student Association, Student Leadership Program and Swimming Pool. Refund of this fee will be made only under the same conditions as refund of tuition and upon surrender of the student identification card.

**STUDENT GENERAL PROPERTY DEPOSIT** — Every student must make and maintain a General Property Deposit of \$10.00. This deposit is subject to charges for violation of library rules and for loss of or damage to University property. The student, upon notice from the Business Office, will be required to restore the deposit to the original amount any time it is reduced by fines or other charges. Payment must be made immediately upon request, and, pending receipt of payment, no credit will be allowed on the work of that semester or term, and the student will be ineligible to re-enter the University. General Property Deposit will be refunded only when a student ends his career at the University. No refund will be made to a student who plans to continue work in a later semester or term. 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 and for the support of a general Student Union program. This policy applies to deposits heretofore paid as well as to those paid in the future.

**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.

**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 graduation fee of \$5.00 is required of candidates for graduation. A receipt showing payment of or exemption from this fee must be presented to the respective Dean at the time the degree application is filed. 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 .....	\$8.00
Spring Semester .....	5.00
Summer Session .....	3.00

*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.

## Other Financial Information

**PENALTY FOR PAYMENT OF WRONG FEE** — The responsibility for registering under the proper residence is placed upon the student, and it is the student's duty, at or before registration, if there is any possible question of the right to legal residence in Texas under State laws and University rules, to raise the question with the Director of Admissions and to have such question settled prior to registration. There can be no change of residence except upon express authorization by the Director of Admissions. Attempts on the part of a non-resident to evade the non-resident tuition fee will be taken seriously and

may lead to expulsion. Any student who wrongfully pays the Texas rather than the non-resident tuition fee is subject to a fine of ten dollars (\$10.00) for each such violation.

**EXEMPTION OF CERTAIN VETERANS OF MILITARY SERVICE** — 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 educational benefits provided for veterans by the United States government, are exempt from the payment of tuition and certain required academic 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 Financial Aid Office. A certified or photostatic 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 wars, and to orphans of members of the Texas National Guard who were killed while on active duty since January 1, 1946.

## HOUSING EXPENSES

U.T. El Paso housing facilities are described fully in the Student Affairs and Services section of this catalog. Rates for 1981-82, which include board of twenty meals per week and room with local telephone service, are as follows:

Semester Contract (Fall/Spring)	
Double room	\$960 per semester
Suite	\$1,015.00 per semester
Single Occupancy (when available)	\$1,405.00 per semester
Summer Session (Each Term)	
Double Room	\$375.00 per term
Single Occupancy (when available)	\$540.00 per term

Monthly rental for student family apartments is \$210 per month. Rates are subject to change by action of the Board of Regents of The University of Texas System.

Further information about the U.T. El Paso student housing facilities, as well as application forms, can be obtained from:

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

## RESIDENCY REGULATIONS

### 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 nonresident student.

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



An individual 18 years of age or under 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 regular session 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 be reclassified as a resident student as provided in the rules and regulations adopted by the Coordinating Board, Texas College and University System. Any individual reclassified as a resident student is entitled to pay the tuition fee for a resident of Texas at any subsequent registration as long as legal Texas residence is maintained.

### MARRIED STUDENTS

A non-resident who marries and remains married to a resident of Texas, classified as such under this Act at the time of the marriage and at the time the non-resident registers, is entitled to pay the resident tuition fee regardless of the length of time of residence in Texas, and any student who is a resident of Texas who marries a non-resident is entitled to pay the resident tuition fee as long as he or she does not adopt the legal residence of the spouse in another state.

A citizen of another country who marries a Texas resident should refer to the paragraph entitled "Citizens of other countries."

### MILITARY PERSONNEL AND VETERANS

Military personnel are classified in the following manner:

An officer, enlisted man or woman, selectee or draftee of the military service of the United States who is assigned to duty in Texas is entitled to register himself or herself, his or her spouse, and their children in a state institution of higher education by paying the tuition fee and other fees or charges required of Texas residents, without regard to the length of time of assignment of residence to duty or of residence within the state.

A person on military service who wishes to pay the resident tuition fee personally or for dependents must submit at the time of 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 such 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 fees 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 to 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 stu-

dent for 12 months prior to registration and subsequent to discharge from service.

The spouse and children of a member of the Armed Forces of the United States who dies or is killed are entitled to pay the resident tuition fee, if the wife and children become residents of Texas within 60 days of the date of death.

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.

### EMPLOYEES OF INSTITUTIONS OF HIGHER EDUCATION OTHER THAN STUDENTS

A teacher, professor, or other employee of a Texas institution of higher education is entitled to register himself or herself, his or her spouse, and their children in a state institution of higher education by paying the tuition fee and other fees or charges required for Texas residents without regard to the length of time of residence in Texas. A teacher, professor, or other employee of a Texas institution of higher education is any person employed at least one-half time on a regular monthly salary basis by a state institution of higher education.

### STUDENT EMPLOYEES

A teaching assistant, research assistant, or other student employee of any institution covered by this section is entitled to register himself or herself, his or her spouse, and their children in a state institution of higher education by paying the tuition fees and other charges required for Texas residents, without regard to the length of time of residence in Texas; provided that said student employee is employed at least one-half time in a position which relates to a degree program under rules and regulations established by the employer institution. This exemption shall continue for students employed two consecutive semesters through the summer session following such employment if the institution is unable to provide employment and, as determined under standards established by the institution, if the employee has satisfactorily completed employment.

### COMPETITIVE SCHOLARSHIPS

A non-resident student holding a competitive scholarship of at least \$200 for the academic year or summer for which enrolled is entitled to pay the fees and charges required of Texas residents without regard to the length of time of residence in Texas, provided that he or she must compete with other students, including Texas residents, for the scholarship and that the scholarship must be awarded by a scholarship committee officially recognized by the administration of the institution of higher education.

### 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 fee purposes under this Act as has a citizen of the United States.

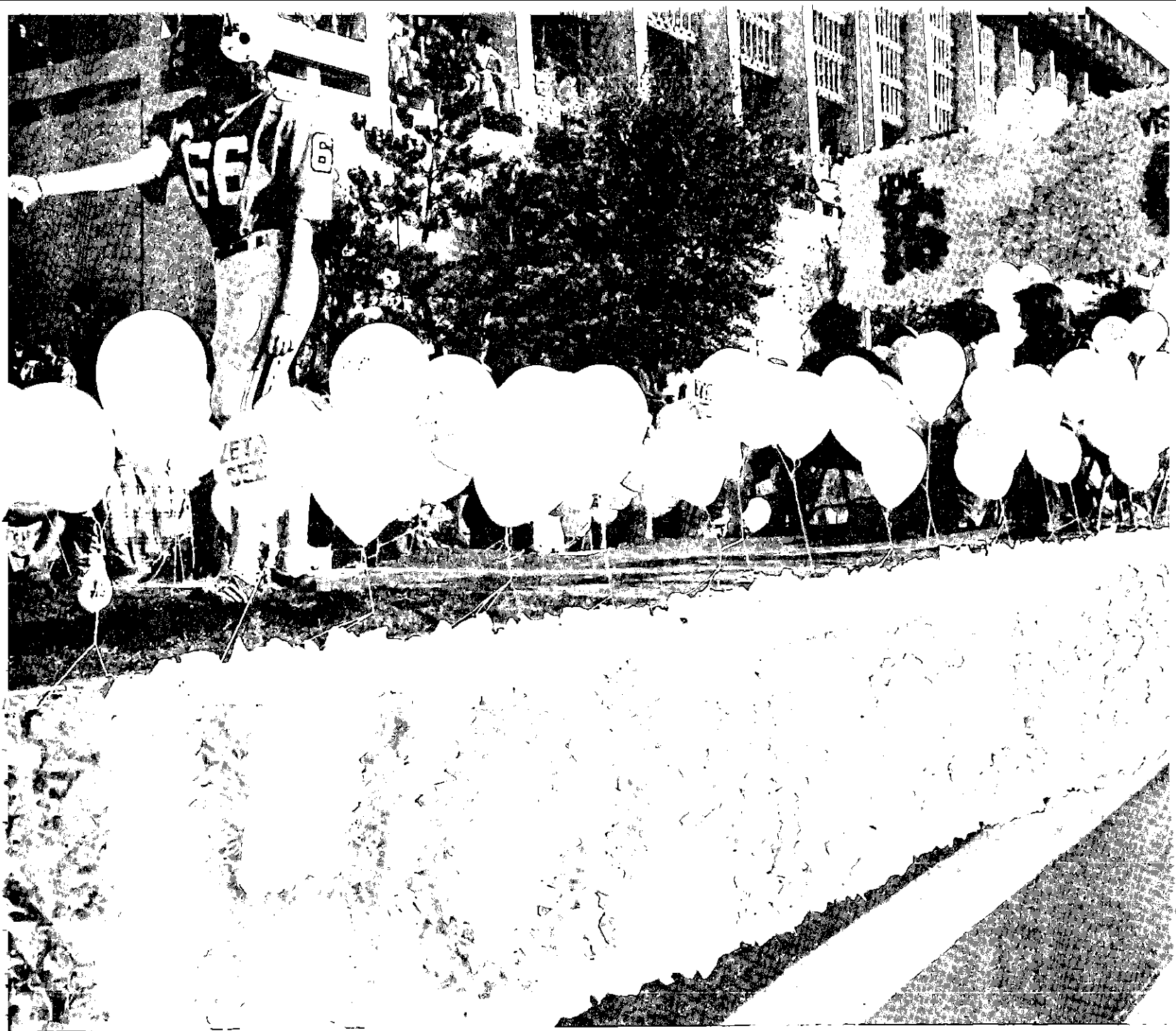
### STUDENT RESPONSIBILITIES

The responsibility of registering under the proper residence classification is that of the student, and if there is any question of right to classification as a resident of Texas, it is the student's obligation, prior to or at the time of registration, to raise the question with the administrative officials of the institution in which he is registering and have such officially determined.

Every student who is classified as a resident student but who becomes a non-resident at any time by virtue of a change of legal residence by personal action or by the person controlling his domicile is required to notify the proper administrative officials of the institution at once.

**OFFICIAL CHANGE OF RESIDENCE STATUS**

Every student classified as a non-resident student shall be considered to retain that status until such time as written application for reclassification shall have been made in the form prescribed by the institution and shall have been officially reclassified in writing as a resident of Texas by the proper administrative officers of the institution.



**Student Affairs**  
**Student Life Policies and Procedures**  
**Other Student Services and Programs**

# **Student Affairs and Services**

# STUDENT AFFAIRS

## Student Life at UT El Pas

The belief that a liberal education is acquired at least as much by what goes on outside the classroom as in it is firmly held at the University of Texas at El Paso. The quality of academic life at this institution is enhanced by a number of student service offices and hundreds of people whose primary purpose is to meet the many needs of our students. U.T. El Paso tries to assure that a student is not "out there all alone" and we take pride in the fact that people at this institution care about students. This section is designed to inform prospective and current students of the many services which are available to them.

## The Office of Student Affairs

Under the direction of the Dean of Students, this office 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, social activities on campus, 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

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

Other services coordinated by the Counseling Service include the Career Information Center, withdrawal from the University, 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.

Complete withdrawals from the University are coordinated by The Counseling Service. Any student leaving the University during the semester does so through the Counseling Service.

Finally, the Counseling Service 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

The primary purpose of the University Placement Center is to assist 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, advises 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 Octo-

ber, 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 fields. 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 off 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 University Placement Center is located in The Union 103 West.

## Study Skills and Tutorial Service

The purpose of the Study Skills and Tutorial Service is to help students improve their general competency and performance in their academic subjects.

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

**Non-Credit Classes:** Free non-credit classes are taught each semester in Study Skills: vocabulary, trigonometry review, essay exam skills, English, French and Spanish conversation, and preparation for the LSAT and GRE. Help sessions are offered in chemistry and various math classes.

**Tutoring Program:** Free Tutoring is available for any student. The tutors are students who are successful themselves 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, English, accounting, economics, finance and nursing. Come by The Union 108 West for more information.

## Students' Attorney

Legal services are available free of charge to all students and registered student organizations of The University of Texas at El Paso through the Office of the Student's Attorney.

This program was established in September of 1975. Since then, students have received confidential legal advice and assistance in a number of areas including consumer law, domestic relations, immigration, landlord-tenant disputes, automobile accidents, employee's rights and insurance.

The office is staffed by a licensed Texas attorney who is assisted by senior pre-law students serving in the capacity of clinical and research assistants.

In many instances it is possible to resolve the student's legal problem through advice, negotiation and compromise. Where this is not possible, the office stands ready to provide

the student with additional assistance in either the form of representation in certain categories of cases or referral of the case to outside counsel as may be appropriate.

The student's Attorney is prohibited from representing students in all criminal matters or disputes against the University.

The Office of the Student's Attorney is located in The Union 206 West.

## International Student Service

Personnel of the International Student Service office are available to assist any international student with problems concerning immigration documents, certifications for foreign governments, counseling concerning the pattern of American life, referrals for academic counseling, working permits, emergency loans, housing, scholarships and the Host Family Program.

A career placement service is available to international students in cooperation with the University Placement Service.

The International Student Service office is located in The Union 301 West.

## Student On-Campus Housing

U.T. El Paso's two high-rise coeducational residence halls are 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 twice daily Monday through Friday. Storage rooms, 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.

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-serve basis. There is usually a waiting list for student family apartments.

*Reservations:* Application for admission to U.T. 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  
103 Kelly Hall  
U.T. 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-type agreement representing the contractual responsibilities of both the resident student 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 chapter of this catalog.

## Student Health Service

The Student Health Service offers free limited medical services to all U.T. El Paso students and is staffed by registered nurses and licensed vocational nurses. Physicians are on duty in accordance with a posted schedule. A consulting psychiatrist is also available. The Health Service is on Wiggins Dr. next to the Commons.

## Student Programs

The Student Programs Office 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.

Program selections are made by committees composed of students, faculty and staff. There are three standing committees: Film, Lyceum and Arts Programs.

Students, faculty and staff interested in serving on these committees should apply at the Student Programs Office, The Union 301 East.

## The Union

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 in association with 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: snack bar and cafeteria, bookstore, lounges and recreation rooms, the Union Theatre and the Exhibition Gallery. Meeting rooms are available to registered student organizations and official University groups.

The new addition to The Union includes expanded food service and bookstore facilities, additional office space for Student Association, Student Programs Office and Student Organizations, and a multi-purpose conference center. Also located in The Union is office space for Student Publications and Post Office service.

## University Identification Center

The University Identification Center issues and validates University I.D. cards and replaces lost or broken I.D. cards that need name or status changes. The I.D. Center also issues University staff and faculty I.D. cards. The office offers information on student health insurance, handles insurance claim forms and provides instructions on how to process claims. Tickets to movies held on campus may be obtained at the I.D. Center upon presentation of a currently validated I.D. card. The I.D. Center is located in The Union, 109 West.

## University Information Center

A service of the Office of Student Affairs is the University Information Center. 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 using the center's "hotline" 747-5455. The center is open weekdays and Saturday morning.

## Student Publications

Student Publications provides administrative support and professional guidance for the *The Prospector*, U.T. El Paso's student newspaper and *Amphora Review*, a general interest magazine supplement to *The Prospector*.

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 Mass Communications, which include writing laboratories on the Student Publications premises 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 Service

The Department of Intramurals and Recreational Service 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 department sponsors four program areas as a means to offer "Participation for Everyone."

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, mixed doubles basketball and racquetball, softball and others. 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: archery, bowling, fencing, gymnastics, judo, orienteering, outing, racquetball, rifle, rugby, scuba, ski, soccer, sport parachuting, swimming, table tennis, tennis, volleyball and wrestling.

Drop-in Recreation involves leisure time use of recreational facilities. There are basketball, volleyball, badminton and indoor handball courts in the Memorial Gymnasium complex. Tennis courts, outdoor handball courts and grass fields are also available for use.

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, next to the office of the Department of Intramurals and Recreational Services.

## Student Association

The U.T. El Paso 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 council members is held. Qualifications and duties for these offices are listed in the Student Association Constitution. Council members are elected at large. Election requirements and regulations are set down by an election commission appointed by the Student Council 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 two branches of government in the Student Association. The Executive and Legislative form one branch and the Judicial forms the other.

The president of the Student Association, working directly with the Student Council, is the chief executive of the Student Association.

The legislative branch, the Student Council, appropriates funds to student organizations and for student government projects, works for changes in campus policies, and provides a means for organized student expression. The Council meets every week in the Council chambers, The Union 303 East. The Student Association Internal Affairs Vice-President presides at Council meetings, which are open to all students.

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

The Judicial system affords students the legal right to contest certain decisions affecting them at certain levels of the institution. It is one appeal channel afforded to the student, beginning with the lower courts and extending through the University and the Board of Regents.

All enrolled students are automatically members of the Student Association.

## Registered Student Organizations

The University of Texas at El Paso 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 Stu-

dent 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, fourteen social fraternities and sororities. In addition, there are a number of service, religious and political groups.

## STUDENT LIFE POLICIES AND PROCEDURES

### General Regulations

Detailed policies and procedures affecting student life are printed in the student handbook. 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 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.

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, warning probation, disciplinary probation, withholding of 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 a 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 withhold the student's records, deny readmission and withhold a degree to which the student might otherwise be entitled.

### BAD CHECKS

No student may give the University a check, draft or order with intent to defraud the University. Disciplinary action may be taken against a student who violates this and the student's failure to pay the University the amount due on or before the fifth class day after receipt of written notice that the drawee has rightfully refused payment is prima facie evidence that the student intended to defraud the University. A student who gives the University a bad check, draft, or order to cover tuition and fees during registration, the fault not being that of the bank, may be withdrawn from the University if the student fails to pay the University within five class days after receiving written notice.

## OTHER STUDENT SERVICES AND PROGRAMS

### Intercollegiate Athletics

Winning NCAA national championships has become old hat to the UTEP Miners, members of the Western Athletic Conference. UTEP has captured national championships in basketball, track, indoor track and cross country. Many individual athletes have earned All-American honors in both basketball and track, and the football team has won the Sun Bowl title with wins over Texas Christian and Mississippi. In football, UTEP plays such teams as Brigham Young, Colorado State, New Mexico, New Mexico State, San Diego State, Wyoming, SMU, Nevada-Las Vegas. The Miners play home games in the Sun Bowl, a recently expanded stadium which now seats 51,000 spectators.

The 12,000 seat Special Events Center is the home of the basketball Miners, and such opponents as Colorado, Texas A&M, Oklahoma State, as well as all Western Athletic Conference members provide the competition.

The women's intercollegiate athletic program includes basketball, cross country, indoor and outdoor track, gymnastics, volleyball and swimming. The UT El Paso women's program competes in the Inter-Mountain Region of the Association of Intercollegiate Athletics for Women against such schools as Brigham Young, Colorado, Colorado State, Utah, Utah State, New Mexico, New Mexico State, Arizona and Arizona State.

Campus facilities include the 10,000-seat Kidd Field for track, the 5,000-seat Memorial Gym for volleyball and Holliday Hall for gymnastics. The fully-equipped weight training rooms are among the most modern in the country, and there is also a new fully-equipped training and rehabilitation center.

The physical facilities for athletics comprise one of the finest athletic complexes to be found elsewhere. All are available for physical education classes as well as general student use.

## Office of Admissions and Records

This academic support office will admit you, register you, maintain your academic record, be involved with graduating you and will issue transcripts for you whenever you need them both during and long after your time of enrollment. Because of the importance of the services provided by the Office of Admissions and Records, students are encouraged to take a direct interest in their academic record which is being added to semester by semester. The office is organized into several sections as follows:

### DIRECTOR OF ADMISSIONS AND REGISTRAR

320 Administration Building  
(915) 747-5550

Responsible for:

- Direction of all admissions and records functions; coordination of these functions with other University offices
- Publication of the University *Catalog*
- Coordination of the University degree application and conferral process.

### ADMISSIONS AND EVALUATION:

209 Administration Building  
(915) 747-5576

Responsible for:

- Receiving and processing applications for undergraduate admission and informing applicants of their status
- Evaluating transfer credit for acceptability to U.T. El Paso undergraduate degrees
- Determination of Texas state residency for purpose of tuition assessment
- Determination of eligibility for admission of international students; issuance of immigration documents for admitted international students

- Liaison with the Provisional Advising Office on orientation, advising, and academic progress of provisionally-admitted students.

### REGISTRATION AND RECORDS:

201 Administration Building  
(915) 747-5544

Responsible for:

- Registration of students and processing changes of registration
- Creation and maintenance of student academic records
- Publication of the *Schedule of Classes*
- Assignment of teaching facilities
- Receipt, processing and posting of final grades
- Transcript and certification services for student academic records
- Audit of academic records for graduation; issuance of diplomas.

### SPECIAL ACADEMIC SERVICES

203 Administration Building  
(915) 747-5890

Responsible for:

- Student recruitment and relations with secondary schools
- Answering requests for information about the University
- Arranging tours of the University for individuals and groups
- Awarding of academic scholarships
- New Student Orientation
- Coordination of the Junior Scholars Program
- Handicapped Student Services.

### VETERANS AFFAIRS:

1825 Hawthorne at Rim Rd.  
(915) 747-5342

Responsible for:

- Maintenance of records and certification of enrollment to the Veterans Administration for veterans, dependents and active duty servicemen
- Provision of tutoring for veterans.





**Academic Regulations  
Requirements for  
Undergraduate Degrees  
Academic Honors  
Student Records Policies**

# **Academic Policies and 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. After registration class enrollments can be verified with the dean or the Director of Admissions and Registrar.

### LATE REGISTRATION

Students who enroll during the late registration period must have approval from the department of each class in which they enroll. Late enrollees are subject to the same regulations, course requirements, etc., as students who enroll on time. A fee is assessed for late registration. Each class missed because of late registration will be counted as an absence, and classroom and 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. Classes dropped during this period 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, the end of the 2nd week of a six-week summer term, or the 4th week of a twelve-week summer term, will receive a notation of *W*. Students dropping all classes are withdrawing from the University 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 permission 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 University Counseling Service. 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.

### CLASSIFICATION OF STUDENTS

Freshman . . . . .	Less 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 required freshman courses (those with "1" as the second digit of the course number) must be completed 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.

### ADVANCED COURSES

These are upper-division courses 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.

### UNDERGRADUATE COURSE LOAD

In no case may a student in good academic standing 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 in academic good standing (provisional admission status, probation, or re-instatement from suspension) will have course load conditions imposed by their advisor or dean. See the section entitled *Satisfactory 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

## COURSES TAKEN ON A PASS/FAIL BASIS

An undergraduate student in good academic standing 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 Admissions 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 be used only for any elective course 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/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. Each semester a list of courses for which the P grade may be given is published by the Office of Admissions and Records.

## REPETITION OF COURSES

When a student repeats a course at The University of Texas at El Paso, the grade used to compute the cumulative grade point average is the grade earned the last time that course was completed. Grades obtained at other institutions do not affect the grade point average at The University of Texas at El Paso. If a student completes a course at another institution which was previously failed at U.T. El Paso, and the credit is otherwise acceptable, the student will be deemed to have met the course requirements. In any case, all grades remain on the student's academic record.

## CREDIT BY EXAMINATION

All credit awarded by examination is subject to approval by the appropriate academic departments and academic dean. 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 was received. Credit awarded on the basis of examination will be recorded on the academic record as a CR for the number of hours earned and will not be counted in calculating the grade point average for any purpose, including honors at graduation. Clarification and assistance regarding credit by examination can be obtained from the University Counseling Service.

Credit may be given for the College Level Examination Program (CLEP) developed by the Educational Testing Service. Credit given for the CLEP General Examinations may be applied to free elective requirements only. Therefore, it is usually advantageous for the student to take the CLEP Subject Examinations instead. Most credit granted for military service schools may be used for elective credit only.

## ADVANCED PLACEMENT

Students who wish to take advanced placement examinations should consult with the departmental program descriptions for specific requirements. Ordinarily, examinations must be taken before the student has completed any college courses. Such examinations may not be taken to satisfy any part of the last 30 semester credit hours for which credit is received at the University.

## 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.

## COURSES TAKEN AT A NON-ACCREDITED INSTITUTION

Courses completed at a college or university that is not fully accredited will not be considered for evaluation as transferred credit until after the student has completed a total of 30 semester hours with a "C" average at The University of Texas at El Paso.

## 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 by 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 writ-

ten approval has been given in advance by the student's academic dean.

### HONORS LIST

At the close of each semester, the Office of Admissions and Records issues an Honors List which includes the names of all full-time students having a grade point average of at least 3.5 without any grades of *I* or *F*. (if an *I* is removed within two weeks after the end of the semester, the last grade earned will be considered). For this purpose, 12 semester hours is deemed to be full-time.

In publishing the honors list the Colleges of Business, Education, Engineering, Liberal Arts, Nursing, and Science will be listed separately. Students whose grades are all A's will be given special mention. Attainment of honors will be noted on the student's academic record.

### SATISFACTORY ACADEMIC PERFORMANCE, ACADEMIC PROBATION, AND SUSPENSION

#### A. REGULARLY ADMITTED STUDENTS

Satisfactory academic performance consistent with progress toward a degree is achieving a minimum cumulative grade point average (GPA) of 2.0 over the total number of credit hours for which the student has enrolled. A student who at the end of any semester or summer session has not achieved this 2.0 GPA will be placed on academic probation and will remain in that status until either (1) the student achieves a 2.0 GPA, or (2) the student is placed on academic suspension. Academic suspension will be imposed if at the end of the second successive semester or summer session of academic probation (or in the case of a part-time student, the end of the semester or term in which a total of 24 semester hours have been attempted while on academic probation) the student's GPA is below 2.0. A summer session is defined as both summer terms.

A student informed by notation on a semester grade report that he or she has been placed on academic probation is considered to be making minimum academic progress but may not register for more than 16 hours except by written permission of the academic dean.

#### B. PROVISIONALLY ADMITTED STUDENTS

Provisional status is removed by earning grades of "C" or better in a minimum of 9 semester hours selected from at least two of the following areas: English, Mathematics, Natural Science, or Foreign Languages. An overall "C" (2.0) average must also be maintained.

A student who does not meet these requirements during his first semester, but who has a minimum 1.5 cumulative grade

point average, will be given an additional semester in which to meet his provisional course requirements with an overall 2.0 GPA. A student who does not meet the conditions of his provisional admission will be suspended, and further enrollment will be subject to approval from the Director of Provisional Student Services.

### READMISSION OF STUDENTS DROPPED BECAUSE OF ACADEMIC SUSPENSION

A student ineligible for registration because of academic suspension may, if there are exceptional circumstances contributing to the less than minimum performance, submit a petition to the academic dean for reinstatement. The petition must be in the form of a letter accompanied by a transcript of the student's academic record. Each application will be considered on its merits. A student so reinstated will be on such terms of academic probation as the dean may require.

Under normal circumstances, a student who is ineligible for registration because of academic suspension is eligible for readmission on academic probation after the following time intervals have elapsed:

1. Suspended for the 1st and 2nd time: after one full semester has elapsed
2. Suspended for the third time: extended suspension. A student on extended suspension is ineligible to re-enter the University for a period of three calendar years. After this period of suspension, the student is eligible to re-enter the University on academic probation. If the student attains, within two semesters or 24 attempted semester hours, a 2.0 cumulative grade point average, academic probation will be removed.

### READMISSION OF STUDENTS AFTER EXTENDED ABSENCE

Any student re-entering the University after an absence of at least three calendar years may have the option of:

1. meeting the remaining requirements for graduation or
2. meeting the requirements for graduation from courses attempted only after re-entry from such absence.

If option (1) is chosen, the GPA will be computed according to rules in force at the time of re-entry. In either case, the entire academic record will be maintained. If option (2) is chosen, a notation will be made in the student's record indicating the portion of the record which is to be involved in computing requirements for graduation.

## 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 both department chairpersons, and the change form must be filed with the new academic dean. A student who is under academic suspension may not change majors.

### 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 for undergraduate candidates and the departmental advisor for graduate students. The process 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 Admissions and Records after all graduates have been certified by the academic deans. It is the graduate's responsibility to pick up the diploma from Admissions and Records 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. The U.T.

# ACADEMIC HONORS AT GRADUATION

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

1. **HIGHEST HONORS** — Highest Honors will be awarded to students who attain a minimum grade 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. No student with an *F* on record will be eligible for Highest Honors.
2. **HIGH HONORS** — High Honors will be awarded to students who attain a minimum grade 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** — Honors will be awarded to students who attain a minimum grade 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 of academic honors at graduation, grades earned in all work transferred from other institutions will be included; however, transferred work may not be used to raise the grade average above that earned at The University of Texas at El Paso.

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 U.T. El Paso grade point average calculations. However, a minimum 2.0 grade average must be achieved in all course work, including transferred work counted toward the degree. The above regulation also applies toward calculation of the minimum grade point average required in the major.

## 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.

# 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 re-

sponsibilities of students and of the University is contained in the student handbook 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 main-

tained in perpetuity. During the application process, the Office of Admissions and Records 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 intended major.

At each successive registration and following final examinations for each semester or term, academic records are updated and appropriate information is shared with University offices which need it. Changes in registration, 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 Director of Admissions and 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 Uni-

versity 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 Admissions 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

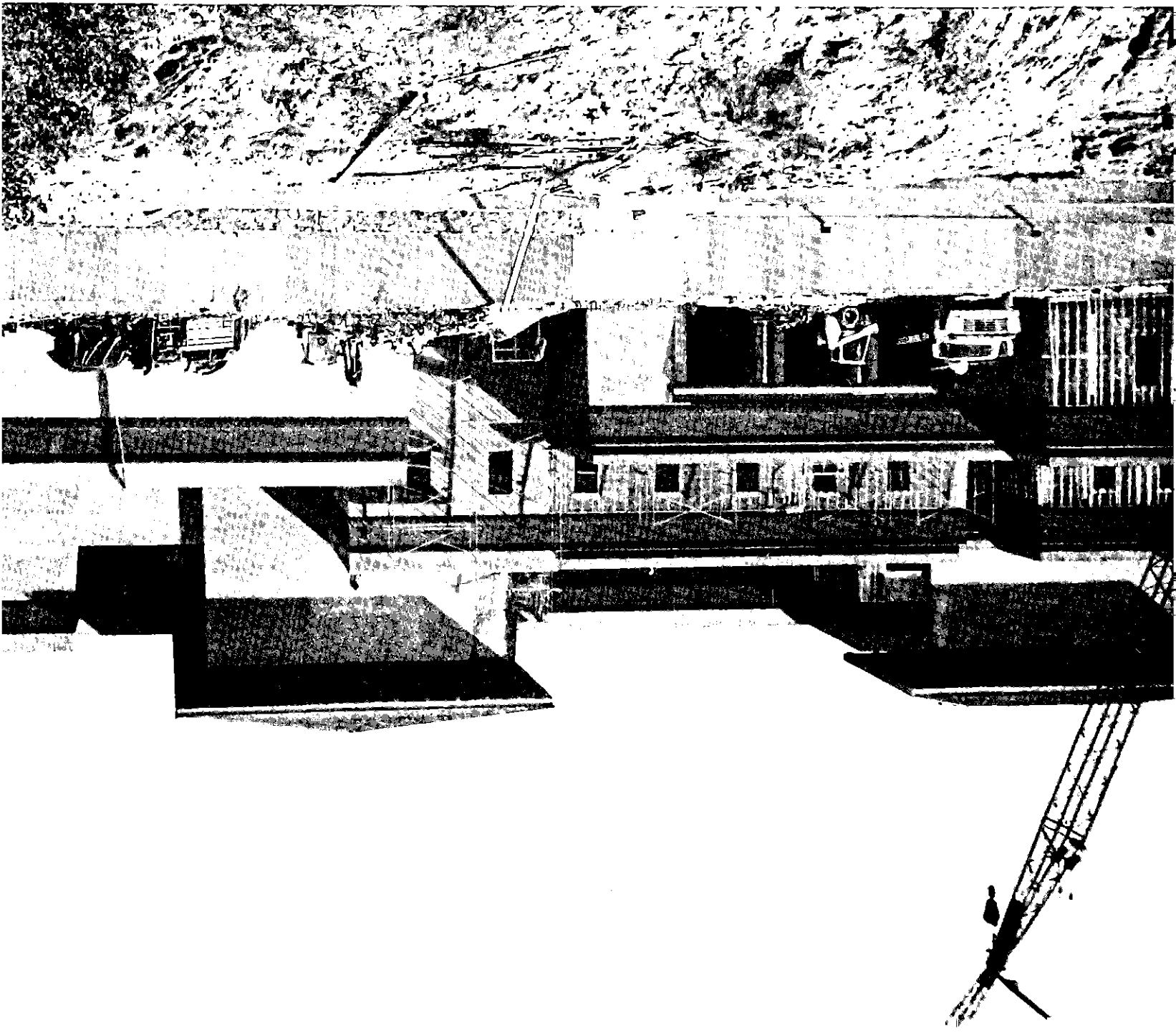
The Buckley Amendment provides that The University may disclose personally identifiable information from the education records of a student (name, address, telephone number, major field of study, dates of attendance, degrees and awards received, etc.). However, the student has the right to refuse to 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 just prior to each semester. There is a form available in the Office of Admissions and Records by which a student may request that a particular item or items of directory information not be released. This form must be submitted each semester within the deadline for registration and the right to withhold/release of Directory Information applies only to currently-enrolled students.

# The College of Business Administration

Bell Hall 100  
(915) 747-5241

Weldon C. Neill, Dean  
Gertrude Dawson, Assistant Dean

Accounting  
Business  
Economics and Finance





## COLLEGE OF BUSINESS ADMINISTRATION

### GENERAL INFORMATION

The College offers the Master of Business Administration Degree (M.B.A.) and the Master of Arts in Economics, plus the Bachelor of Business Administration Degree (B.B.A.) with major options in Accounting, Administrative Services, Commercial Banking, Economics, Finance, Management, Marketing, and Real Estate.

#### Course of Study

The course of study required for the B.B.A. degree is divided into three groups:

#### GENERAL FOUNDATION REQUIREMENTS

— 48 semester hours

#### BUSINESS CORE REQUIREMENTS

— 36 semester hours

#### MAJOR OPTION REQUIREMENTS

— 39-45 semester hours

#### Student's Major Designation

1. All students entering the College will be designated as Pre-Business Majors (PREB) and will remain in this classification until they have declared a Major Option.

2. When a student has selected a major option (which should occur before completing 60 credit hours), the student will file a degree plan in the Dean's office and complete a Change of Major form designating one (or more) of the following major options:

ACCT — Accounting	FIN — Finance
ADMS — Administrative Services	MGMT — Management
BNKG — Banking	MKT — Marketing
BECO — Economics	RE — Real Estate

3. A student is eligible to enroll in junior-level courses only after successfully completing the required freshman- and sophomore-level courses.

#### Other Degree Requirements

In addition to completing the required course of study, a student must meet all of the General Requirements for Undergraduate Degrees and earn a 2.0 grade point average in all courses attempted within the College of Business Administration. Accounting majors must also earn a 2.0 average in Acct. 3327 and all 21 hours of required accounting courses and accounting electives in the major option.

#### Transfer Credit

In general, the College will limit transfer credit for business courses taken at a lower division level to such courses that are offered at that level. In all cases, however, a transfer student must complete the minimum number of upper division hours required of a nontransfer student.

## Bachelor of Business Administration

### GENERAL FOUNDATION REQUIREMENTS

#### (48 Minimum Semester Hours)

- 6 — ECONOMICS 3203-3204
- 12 — ENGLISH 3111-3112 (or LINGUISTICS 4112, 4113 for those students for whom English is not native) and 6 hours of 3200 or higher level English courses.
- 6 — POLITICAL SCIENCE 3110-3111
- 6 — HISTORY 3101-3102 or HISTORY 3103, 3104
- 6 — MATHEMATICS 3120, 3201
- 6 — NATURAL SCIENCE: BIOLOGY, CHEMISTRY, GEOLOGY, PHYSICS
- 3 — SOCIAL SCIENCE: PHILOSOPHY, PSYCHOLOGY, SOCIOLOGY or ANTHROPOLOGY
- 3 — SPEECH 3102

### BUSINESS CORE REQUIREMENTS

#### (36 Minimum Semester Hours)

- 9 — ACCOUNTING 3201, 3202, 3327 for Accounting or Banking Majors. ACCOUNTING 3201, 3202, and 3 hours of 3311, 3321 or 3323 for other business majors
- 3 — COMPUTER SCIENCE 3125
- 3 — STATISTICS 3201
- 3 — BUSINESS LAW 3301
- 6 — FINANCE 3310, 3320
- 3 — MANAGEMENT 3300
- 3 — MARKETING 3300
- 3 — ADMINISTRATIVE SERVICES 3308
- 3 — MANAGEMENT 3400

### BUSINESS MAJOR OPTIONS

#### (39 Minimum Semester Hours — 45 for Banking majors)

#### Accounting Option

- 12 — ACCOUNTING 3321, 3322, 3323, 3404
- 9 — ACCOUNTING ELECTIVES FROM 3328, 3401, 3402, 3403, 3421, 3422, 3423
- 12 — NON-BUSINESS ELECTIVES
- 6 — FREE ELECTIVES

#### Administrative Services Option

- 6 — ADMINISTRATIVE SERVICES 3303, 3305
- 12 — ADVANCED ADMINISTRATIVE SERVICES ELECTIVES
- 12 — NON-BUSINESS ELECTIVES
- 9 — FREE ELECTIVES

#### Commercial Banking Option

- 9 — ACCOUNTING 3321, 3328, 3412
- 9 — BUSINESS LAW 3303, 3304, 3305
- 15 — FINANCE 3315, 3330, 3412, 3425, 3428
- 3 — MANAGEMENT 3310
- 3 — BUSINESS ELECTIVE (See department chairman for approved list)
- 6 — FREE ELECTIVES

#### Economics Option

- 6 — ECONOMICS 3302, 3303
- 12 — ADVANCED ECONOMICS ELECTIVES
- 12 — ADVANCED BUSINESS ELECTIVES
- 9 — NON-BUSINESS ELECTIVES

#### Finance Option

- 12 — ADVANCED FINANCE
- 6 — ADVANCED BUSINESS ELECTIVES
- 12 — NON-BUSINESS ELECTIVES
- 9 — FREE ELECTIVES

#### Management Option

- 9 — MANAGEMENT 3310, 3311, 3321
- 6 — ADVANCED MANAGEMENT ELECTIVES
- 3 — ADVANCED BUSINESS ELECTIVES
- 12 — NON-BUSINESS ELECTIVES
- 6 — FREE ELECTIVES

#### Marketing Option

- 9 — MARKETING 3308, 3401, 3409
- 9 — ADVANCED MARKETING ELECTIVES
- 12 — NON-BUSINESS ELECTIVES
- 9 — FREE ELECTIVES



- Real Estate Option
- 12 — GENERAL BUSINESS 3310, 3320, 3405, 3406
- 3 — BUSINESS LAW 3305
- 3 — BUSINESS ELECTIVES (See department chairman for approved list)
- 12 — NON BUSINESS ELECTIVES (SOC 3303, POSC 3322, 3351 are recommended)
- 9 — FREE ELECTIVES

**TEACHER CERTIFICATION.** Students may qualify for a secondary teaching certificate by completing the composite Business Teaching Field (Plan II) and Professional Development, as listed under Secondary Education.

## Bachelor of Business Administration

### SUGGESTED ARRANGEMENT OF COURSES:

#### Freshman Year

1st Semester	Hrs.
Natural Science .....	3
English 3111 or Linguistics 4112 .....	3
Pol. Science 3110 .....	3
History 3101 or 3103 .....	3
Speech 3102 .....	3
Approved Elective <sup>1</sup> .....	3
	15/18

**PRE-LAW.** 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 of Business Administration — Professor L. Phillips Blanchard, Room 120 — Bell Hall (747-5139).

**COMPUTER SCIENCE — BUSINESS OPTION.** Please refer to Electrical Engineering Section, p. 88.

2nd Semester	Hrs.
Natural Science .....	3
English 3112 or Linguistics 4113 .....	3
Pol. Science 3111 .....	3
History 3102 or 3104 .....	3
Mathematics 3120 .....	3
Approved Elective <sup>1</sup> .....	3
	15/18

#### Sophomore Year

1st Semester	Hrs.
Accounting 3201 .....	3
Math 3201 .....	3
Econ. 3203 .....	3
Sophomore English .....	3
Soc. Science .....	3
Approved Elective <sup>1</sup> .....	3
	15/18

2nd Semester	Hrs.
Accounting 3202 .....	3
Computer Science 3125 .....	3
Statistics 3201 .....	3
Sophomore English .....	3
Economics 3204 .....	3
Approved Elective <sup>1</sup> .....	3
	15/18

<sup>1</sup>Administrative Services 3101, 3102, 3103, and 3104 may be taken during Freshman and Sophomore years.

## Master of Business Administration

The objective of the M.B.A. program is to prepare graduates for executive careers in business or in institutions that use business techniques and policies in management and administration. The program meets this objective by being broad in nature and aimed at general competence for overall management and administration. The bulk of course work is devoted towards a broad understanding of the environment, controls and practices which are common to most institutions. The remaining courses are determined by the student's special area of interest or concern.

### Basic Requirements for Admission to the M.B.A. Program:

1. A bachelor's degree from an accredited institution in the United States (or proof of equivalent training in a foreign institution).
2. A satisfactory grade-point average in upper division (junior and senior level) work and in any graduate work already completed.
3. A satisfactory score on the Graduate Management Admissions Test, The GMAT.
4. Acceptance by the Committee of Graduate Studies in the College of Business Administration.
5. Adequate subject matter preparation in Business Administration. Applicants must demonstrate sufficient knowledge in each area of the common body of knowledge of business. Such demonstration may be made by:
  - a. Having obtained an undergraduate degree in Business or Administration, or

- b. Completion with a B or above, the courses listed below at this University or equivalent courses at other accredited institutions.

Common body of Knowledge Area	Corresponding Courses at U.T. El Paso	Credit hours
The Legal Environment	Business Law 3301	3
The Economic Environment	Economics 3203-04	6
Financial Management	Finance 3310	3
Marketing Institutions	Marketing 3300	3
Accounting and Information Systems	Accounting 3309	3
Management Systems	Management 3300	3
Quantitative Methods	Statistics 3201	3
		24

### Specific Requirements for the M.B.A. Degree

1. Completion of the required Business Core:
 

Accounting	3511	Accounting for Management
Economics	3511	Managerial Economics
Economics	3512	The Economic Environment
Finance	3511	Financial Management
Marketing	3511	Marketing Management
Management	3511	Organizational Management Seminar
Statistics	3511	Quantitative Methods in Business
General Business	3521	Seminar in Current Business Problems

2. Completion of an additional 12 elective hours. A student may elect to complete either (a) 12 hours in a field of specialization, not more than 9 of which may be a junior or senior level course acceptable for graduate credit, or (b) 6 hours of thesis. Course work in the field of specialization is not restricted to courses offered by the College of Business Administration, but under any circumstances, elective courses must have a meaningful design that corresponds to the student's educational goals.
3. Each student must provide a satisfactory performance on a comprehensive written or written and oral examination which will be administered in the last semester of the student's program.

## ACCOUNTING

218 Bell Hall  
(915) 747-5192

CHAIRMAN: Sharron R. Hoffmans

PROFESSORS: Norwood, Pate

ASSOCIATE PROFESSORS: Austin, Flores

ASSISTANT PROFESSORS: Hoffmans, Koehler, Leahey, Mayne, Salome

**B.A. DEGREE** — Course requirements for the B.A. degree with a Business Administration major (Accounting Option) are as follows: Accounting 3201, 3202, 3321, 3322, 3323, 3327, 3404, and three additional hours of advanced accounting other than 3309.

### 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:* Accounting 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:* Accounting 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:* Accounting 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:* Accounting 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:* Accounting 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:* Accounting 3202.

### 3328 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:* Accounting 3327.

### 1399-3399 Current Concepts in Accounting (1-0, 2-0, 3-0)

Topic to be announced. This course may be repeated for additional credit as topics are changed. *Prerequisite:* Instructor's permission.

### 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:* Accounting 3321.

### 3412 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:* Accounting 3321.

### For Undergraduates and Graduates

### 3401 Advanced Accounting (3-0)

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

### 3402 Special Problems in Accounting (3-0)

A study of accounting for non-profit organizations; estates and trusts, receiverships and statements of affairs; and corporate liquidations, reorganizations, and international operations. *Prerequisite:* Accounting 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:* Accounting 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. *Prerequisites:* Accounting 3322 and 3323.

### 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:* Grade of "C" or better in Accounting 3323.

### 3422 Advanced Income Tax Research and Planning (3-0)

Methodology in income tax research and estate and gift tax planning. Applying the knowledge about federal income tax provisions to business and individual tax planning and control to minimize business and individual tax consequences. Case study tax planning, research in current tax topics and reporting of research in tax memorandum form are required. *Prerequisite:* Grade of "C" or better in Accounting 3327 and Accounting 3328.

### 3423 Advanced Auditing (3-0)

Provides in-depth coverage of technical and professional aspects of public accounting. It builds primarily upon the Auditing Principles and Procedures course (Acct. 3404), but is designed to integrate other relevant aspects of undergraduate accounting and business courses. *Prerequisites:* Statistics 3201, Computer Science 3125, and a grade of "C" or better in Accounting 3404.

### 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 twenty-seven semester hour requirement for an accounting major. *Prerequisites:* Twenty-one semester hours of accounting or consent of instructor.

### For Graduate Students Only

### 3510 Corporate Accounting Development (3-0)

Accounting principles and their development in relation to the accounting problems of the corporation. Emphasis is placed on the administrative use of accounting data in corporate affairs and on the analysis and interpretation of accounting data, including financial statements. *Prerequisite:* Accounting 3309 or equivalent.

**3511 Accounting for Management (3-0)**

A study of accounting as related to making business decisions. Readings, cases, and problems dealing with accounting concepts, budgeting and cost control, use of accounting data in planning operations and policy formulation, and tax planning in business policies. *Prerequisite:* Accounting 3309 or equivalent.

**3512 Controllership (3-0)**

A study of the major phases of controllership practice, including organizational status, objectives, functions, duties, and responsibilities, and the managerial utilization of accounting and statistical data for planning and control. *Prerequisite:* Accounting 3511.

**3514 Managerial Tax Planning (3-0)**

A study of special income tax problems of all taxpayers; directions toward tax planning, federal estate and gift taxes, losses, claims for refund. *Prerequisites:* Accounting 3327 and 3328.

**3580 Directed Individual Study in Accounting (3-0)**

Studies of topics not included in or going beyond the required course offerings. May be repeated for credit. *Prerequisite:* Consent of instructor.

**3590 Accounting Seminar**

A study of the development of accounting thought as a background for its application to current accounting problems. Influences of government and organizations of accountants. *Prerequisites:* Twenty-one semester hours of accounting or consent of instructor.

**3597 Practice Review (3-0)**

Inquiry into past C.P.A. examinations and current topics. Research and report required. *Prerequisites:* Twenty-one semester hours of accounting or consent of instructor.

**BUSINESS**

115 Bell Hall  
(915) 747-5185

CHAIRMAN: J. Robert Foster

PROFESSOR EMERITUS: Wade Hartrick

PROFESSORS: Blanchard, Dawkins, Dillman, Foster,  
George

ASSOCIATE PROFESSORS: Martin, Palmore, Sheppard,  
Stephens, Wieters

ASSISTANT PROFESSORS: Dawson, Eisenbeis, Freeland,  
Gifford, Sipes, Tompkins, Whistler

**B.A. DEGREE**— Course requirements for the B.A. degree with a Business Administration major (Business Option) are as follows: Accounting 3309, Management 3300, Marketing 3300, Administrative Services 3308. (Business Communications), Business Law 3301, Statistics 3201, Finance 3310, Computer Science 3125, six hours of advanced Business electives, and six hours of free Business electives.

**BUSINESS LAW****3301 Introduction to Business Law I (3-0)**

Designed to introduce the student to the legal environment in which business decisions are made. The course emphasizes the law contracts.

**3303 Uniform Commercial Code I (3-0)**

Study of the provisions of the Uniform Commercial Code as they apply to warehouse receipts, bills of lading and other documents of title, investment securities, and such secured transactions as sales of accounts and chattel paper. *Prerequisite:* Business Law 3301.

**3304 Uniform Commercial Code II (3-0)**

An intensive examination of the Uniform Commercial Codes as they apply to sales, commercial paper, bank deposits and collections, and letters of credit. *Prerequisite:* Business Law 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.

**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.

**3401 C.P.A. Law Review (3-0)**

A review of the legal subjects covered in the examination for Certified Public Accountants. *Prerequisite:* Business Law 3304 or permission of instructor.

**GENERAL BUSINESS****3301 Social Responsibility of Business (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.

**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.

**3310 Real Estate Principles (3-0)**

Theory of supply and demand for real estate, the housing market structure, the equity and mortgage markets, the development and significance of private and governmental institutions financing real estate and the role of credit in real estate markets. *Prerequisite:* Consent of instructor.

**3320 Real Estate Appraising (3-0)**

The theory and practice of property evaluation, cost estimation, investment earnings forecasts, principles and technology. *Prerequisite:* Consent of instructor.

**1391-3391 Computer Information System Practicum (1-0, 2-0, 3-0)**

One to three hours credit given at the discretion of the department chairman for practical work in data processing. The student will be required to submit a report concerning the work experience following a specified format. *Prerequisite:* Computer Science 3325 or Computer Science 2202.

**4391-6391 Computer Information System Practicum (4-0, 5-0, 6-0)**

Four to six hours credit given at the discretion of the department chairman for practical work in data processing. The student will be required to submit a report concerning the work experience following a specified format. *Prerequisite:* Computer Science 3325 or Computer Science 2202.

**3399 Current Concepts in Business (3-0)**

Topics to be announced. This course may be repeated for credit as topics are changed. *Prerequisite:* Consent of instructor.

**3401 Comparative Readings (3-0)**

An independent study opportunity designed to augment a student's unique ability or to be used as a means of encouraging broadened thought through comparisons of business philosophies. Written reports based upon assigned readings are required.

**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:* General Business 3310.

**3406 Real Estate Investment Analysis (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:* General Business 3310.

**3407 Business Internship (3-0)**

A course designed to give a business major practical work experience in an area of business or level of management which would be difficult to enter without prior work experience. To be taken in senior year with permission of the internship advisor and the department chairman.

**3480 Advanced Business Computer Applications (3-0)**

Analysis of systems design, programming, and operational problems in complex business systems including management science, decision-

support, and management information systems. Realistic case problems will be solved using available software packages or through COBOL programs written by the student as appropriate. *Prerequisites:* Computer Science 3325 and either Management 3321 or Statistics 3301.

#### For Graduate Students Only

##### 3515 Systems Management

Coverage of the management of systems projects through the systems life cycle. Topics studied include: PERT/CPM, technological forecasting, project management, creative problem solving, feedback generation, and project selection and evaluation.

##### 3517 Software Product Engineering Management (3-0)

A study of the management methodologies for the planning, design, construction, evaluation, documentation, distribution and maintenance of computer application software. Topics include software as a product, the phase-function matrix, hierarchical decomposition, interface management, software quality, programming productivity, software testing, correctness proofs, standards and procedures.

##### 3521 Management Strategy and Policy (3-0)

A seminar devoted to an investigation, analysis, and discussion of American business problems, trends, policies, and major issues. (To be taken in last semester.)

##### 3522 Business and Society (3-0)

A seminar devoted to examining the ideology and the socio-economic position of private business enterprise in America and the world. The influence of corporate management on society and public policy will be assessed.

##### 3540 Seminar in International Business (3-0)

The course introduces the student to the standard body of knowledge in the international business field and links the international business problems with the pressing intellectual, legal, social, economic and moral issues that the business and government leaders face today. Subjects include the study of environments of international marketing. Methods include lectures, case studies and seminar. Course meets three hours each week.

##### 3550 Problems in Business Education (3-0)

Consideration of current problems in business education based upon the interests and needs of the student.

##### 3597 Business Research and 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.

##### 3598-3599 Thesis

## MANAGEMENT

##### 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 on behavior observed within the organization. *Prerequisite:* Management 3300.

##### 3311 Industrial Relations (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:* Management 3300.

##### 3312 Behavioral Decisions in Organizations (3-0)

Develops a greater understanding of human behavior in organizations directly relating to managerial decision making and developing greater skill in decision making in human problem situations. *Prerequisite:* Management 3310.

##### 3313 Management Techniques (3-0)

Provides the opportunity to put into practice the concepts explored in earlier courses. Through the case study method, insights will be gained into the challenges which management faces. The case studies help to show the interdisciplinary nature of management activity. *Prerequisite:* Management 3311.

##### 3315 Collective Bargaining (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:* Management 3311.

##### 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.

##### 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:* Management 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. *Prerequisite:* Management 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:* Management 3321.

##### 3400 Business Policy and Management Laboratory

Integration of accounting, business law, finance, personnel and production management, and marketing background 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.

##### 3410 Systems and Control (3-0)

Coverage of general system theory, decision and control systems. Topics include open systems, living systems, system environments, socio-technical systems, systems management, cybernetics, models, self-organizing systems, decision support systems, information and automation, process management, and management science. *Prerequisite:* Management 3310.

##### 3480 Management of the Data Processing Function (3-0)

A study of the problems that every business faces when the data processing activity is integrated into the existing organization. These problems cover personnel policies, nature and cost of computer equipment, planning for installation, evaluation of the system, services provided to other parts of the organization through computer operations and application programming, and the changing nature of management of the data processing function. *Prerequisites:* Computer Science 3325 or Computer Science 3330 and Senior standing.

##### 3482 Management Information Systems (3-0)

Information requirements for an organization. Operational, tactical, and strategic level systems. Styles of interaction. Planning for a comprehensive information system. Measuring the effectiveness of a computerized information system. *Prerequisites:* Management 3310 and Computer Science 3325.

#### For Undergraduates and Graduates

##### 3405 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 coun-

tries; foreign cultures and attitudes affecting management of international business firms; the role of the business manager in world economic development. (For undergraduate and graduate credit) *Prerequisite:* Management 3300.

### 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.

### 3419 Management Laboratory (3-0)

Laboratory experience for management majors. Students will apply concepts from other management courses in live organizational settings. *Prerequisites:* Management 3300, 3310, 3311, and one Management elective.

### 3422 Operations Planning and Control (3-0)

An analytical study of modern concepts and techniques which have been developed to plan and control operations effectively. Analysis by quantitative techniques for managerial planning and decision-making. Computer applications in problem-solving and simulation. The objective of the course is to bring the range of concepts and techniques to a point of effective application. *Prerequisites:* Management 3321 and three hours of advanced Management.

### 3424 Production Management Seminar (3-0)

Current development in production engineering and management. Attention will be given to the identification, definition, and analysis of problem areas. Research of literature and investigation of modern methods. Designed to develop facility in analyzing management problems in manufacturing. *Prerequisites:* Management 3321 and three hours of advanced Management.

### For Graduate Students Only

### 3511 Organizational Management Seminar

Study of the basic processes of organization and management. Study of structural elements, behavior within structure, and behavior among structures. The decision-system approach will be used.

### 3512 Labor Relations and Collective Bargaining (3-0)

An examination and appraisal of collective bargaining processes, public policy issues, and major labor relations problems.

### 3513 Labor Relations in the Public Sector (3-0)

An examination of the development and practice of collective bargaining between federal, state, and local governments and their employees.

### 3520 Macro-Organizational Behavior (3-0)

The review of current research finding and case studies designed to provide a more comprehensive understanding of the behavior of complex organizations as entities interacting with their external and internal environments and the implications of these interactions toward a better understanding of organizational effectiveness.

### 3521 Micro-Organizational Behavior (3-0)

The study of the effective functioning of individuals and groups, and intergroup interactions within simple and complex organizations through the application of traditional management concepts and use of case studies.

### 3522 Advanced Personnel Theory

An investigation into the behavioral foundations of the instruments of modern personnel management. Building of appropriate testing, training, performance evaluation, interviewing and/or wage and salary instruments designed to correct organizational deficiencies will be stressed.

### 3523 Management Science Seminar

A discussion of management cases involving quantitative aspects, computer evaluation, and management information systems.

## MARKETING

### 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.

### 3302 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:* Marketing 3300.

### 3303 Promotion Strategies (3-0)

Introduction to fundamental economics and social aspects of promotion. Emphasis is given to media, budgeting, evaluation, regarding advertising and sales promotion strategy. *Prerequisite:* Marketing 3300.

### 3304 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:* Marketing 3300.

### 3305 International Marketing (3-0)

Emphasis is given international marketing from the viewpoint of the marketing manager who must recognize differences in market arrangements, 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:* Marketing 3300.

### 3307 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.

### 3308 Consumer and Organizational 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:* Marketing 3300.

### 3309 Marketing Channel Structures (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:* Marketing 3300.

### 3401 Marketing Research and Analysis (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:* Statistics 3201 and Marketing 3300.

### 3406 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:* Marketing 3300.

### 3409 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:* Marketing 3300, and 9 additional hours of marketing courses.

### For Undergraduates and Graduates

### 3490 Organizational 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:* Marketing 3300, permission of the instructor, or graduate standing.

### 3498 Marketing Measurements and Analysis (3-0)

An analysis of modern methods and techniques of developing information on which marketing decisions are made. Emphasis on problem identification and data requirement for analysis; sources and collection of data, statistical analysis using the computer, development and analysis of findings; presentation of research reports. *Prerequisites:* Undergraduate — Marketing 3401 and senior standing; Graduate — admission to graduate standing.

## For Graduate Students Only

**3511 Marketing Management**

Analysis of policy formulation by marketing management with special emphasis on the influence of internal and external environment factors that affect the competitive strategies of a marketing firm.

**3521 Marketing Analysis**

A study of research designs, methods and analytical techniques applicable to those business activities involved in moving goods from producer to consumer.

**3522 Current Marketing Problems Seminar**

A study of current marketing problems. Special emphasis on delineating the problems and the practices relevant to the solutions, including the contribution and interrelationships with other disciplines.

**ADMINISTRATIVE SERVICES****3101 Typewriting/Keyboarding (3-2)**

Fundamental keyboarding techniques with emphasis on development of speed and accuracy through touch typewriting. *Laboratory Fee: \$5.*

**3102 Production Typewriting (3-2)**

Advanced instruction in applied typewriting with emphasis on increased speed, accuracy, and efficiency to meet business production standards. *Prerequisite: Administrative Services 3101 or equivalent. Laboratory Fee: \$5.*

**3103 Shorthand I (3-2)**

Principles of Gregg shorthand; reading, writing and elementary transcription. *Prerequisite: Administrative Services 3101 or equivalent. Laboratory Fee: \$5.*

**3104 Shorthand II (3-2)**

Advanced Gregg shorthand skill and speed building; dictation and transcription of unpracticed material. *Prerequisite: Administrative Services 3103 or equivalent. Laboratory Fee: \$5.*

**3301 Transcription (3-2)**

Transcription of mailable business correspondence, vocabulary building, sustained dictation and transcription practice. *Prerequisite: Administrative Services 3104 or equivalent. Laboratory Fee: \$5.*

**3302 Office Problems (3-0)**

The development of the executive assistant to management through simulated projects, such as records management and the in-basket technique. *Prerequisite: Administrative Services 3101 or equivalent. Laboratory Fee: \$5.*

**3303 Administrative Office Management (3-0)**

A study of the authority and responsibilities of the office manager. Comprehensive applications of modern management concepts and practices in the organization, operation, and control of office functions.

**3304 Business Systems (3-0)**

Methods of establishing, analyzing, standardizing, and controlling administrative systems and procedures including: work simplification, forms analysis, work-flow charting, layout and space analysis, office manuals.

**3305 Administrative Support (3-2)**

Theory and practice in the selection and operation of dictation and transcription machines, duplicating and copying machines, calculators, proportional spacing and automatic typewriters. *Prerequisite: Administrative Services 3101 or equivalent. Laboratory Fee: \$5.*

**3306 Word Processing Management (3-0)**

The professional application of management technology to accomplish communication through the combination of personnel, procedure, and equipment. *Laboratory Fee: \$5.*

**3307 Office Internship (3-0)**

Office work experience with business or industrial firms. Two-hour seminar per week during internship. *Prerequisites: typewriting skill, 65 words per minute; shorthand dictation skill, 100 words per minute; permission of Director.*

**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

**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.

**3498 Improving Instruction in Secretarial Subjects (3-0)**

Modern methodology in teaching typewriting, shorthand, and office practice courses. The psychology of skill building and techniques of office production. Offered Fall semester.

**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 Spring semester.

**3450 Business Education Workshop**

Area of study will be designated.

**STATISTICS AND QUANTITATIVE ANALYSIS****3201 Fundamentals of 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: Mathematics 3120 or equivalent.*

**3301 Intermediate Statistics (3-1)**

Probability and combinatorial analysis. Decision theory, mathematical expectations, tests of hypothesis, linear regression and analysis, correlation analysis, multiple linear regression. Time series and trend analysis, seasonal and cyclical movements. Probability distributions, sampling distribution, the "t" distribution, the binomial distribution, the Poisson distribution, chi-square distribution. Introduction to operations research and linear programming. *Prerequisite: Statistics 3201.*

**3302 Principles of Management Science (3-0)**

Introduction to philosophy, techniques, and business applications of modern mathematical sciences with emphasis on the managerial viewpoint. Foundations of mathematical operations for programming; analysis methods; price analysis and its determination; study of market elasticities with applications. *Prerequisite: Statistics 3301.*

**3310 Decision Theory (3-0)**

The use of finite mathematical techniques in administrative decision-making. *Prerequisites: Statistics 3201 and three hours of Economics, or consent of instructor.*

**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: Statistics 3301.*

**3402 Applications of Management Science (3-0)**

Survey of the literature, case studies, and lectures illustrating selected topics from the material covered in STAT 3302. Special emphasis is placed on model formulation and the use of the computer to solve business applications. Successes and difficulties experienced in applying management science to functional areas of business are highlighted using heuristic as well as exact procedures. *Prerequisites: STAT 3302 or MGMT 3310.*

## For Undergraduates and Graduates

**3498 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.

#### 3499 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.

For Graduate Students Only

#### 3511 Quantitative Methods in Business

Basic mathematical techniques employed in the solution of management problems, including probability theory and tests of hypotheses.

## ECONOMICS & FINANCE

123 Bell Hall  
(915) 747-5245

CHAIRMAN: Robert D. Tollen

PROFESSOR EMERITUS: Paul Zook

PROFESSORS: Fenlon, James

ASSOCIATE PROFESSORS: Brand, Duriez, Neill, Roth,  
Schauer, Tollen

ASSISTANT PROFESSORS: Brown, Smith

### ECONOMICS

**B.A. DEGREE**— Specific requirements for the economics major are: Economics 3203, 3204, 3302, 3303, twelve additional hours of economics; Finance 3320; Mathematics 3120, 3201; and a statistics course offered by either the College of Business or the Department of Mathematics.

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

#### 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:* Economics 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:* Economics 3204.

For Undergraduates and Graduates

#### 3301 Economic History of the United States (3-0)

Survey of American economic development from colonial time to present; analyses of factors which have shaped that development.

#### 3305 Business Cycles and Forecasting (3-0)

History and description of the phases of the cycle, leading theories of economic fluctuations; prediction of industrial production, prices and profits; methods of alleviation and public policy. *Prerequisite:* Economics 3204.

#### 3330 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 public credit.

#### 3334 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.

#### 3335 Urban Economics (3-0)

Investigation of economic forces in American urban and metropolitan areas. Topics examined include labor market analysis, the local public economy, urban economic growth, location theory, and land use analysis.

#### 3340 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.

#### 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.

#### 3352 Economics of Transportation (3-0)

Theory of rate making; rate levels and economic characteristics of railroad, motor vehicle and air transportation. Analysis of government regulation and public policy.

#### 3365 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.

#### 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.

#### 3368 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.

#### 3372 Mathematical Economics (3-0)

Basic concepts and operations of mathematical logic and their application to economic analysis. *Prerequisite:* Economics 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:* Economics 3204.

#### 3380 History of Economic Thought (3-0)

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

#### 3385 Contemporary Economic Thought (3-0)

The development of economic analysis over the past three decades. Emphasis is given to the application of economic theory to the mixed capitalism of modern Western economies.

#### 3390 Comparative Economic Systems (3-0)

Economic foundations of the capitalistic and other systems; economic attributes of fascism, socialism, communism, and capitalism.

#### 3395 The Soviet Economy (3-0)

Analysis of the structure of the Soviet economy including a survey of economic development since the revolution.

#### 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:* Finance



3320. Finance 3420 and Economics 3420 may not both be counted for credit.

#### 3480 Managerial Economics (3-0)

The application of economic concepts and techniques to business problems. Emphasis on decision-making under uncertainty with consideration given to production, investment, pricing, research and development, and logistics problems. *Prerequisite:* Economics 3204 or consent of the Department Chairman.

#### 2495-6495 Selected Problems in Economics

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. Credit will vary according to the work performed, value being indicated by course numbers. *Prerequisite:* Consent of instructor and Department Chairman. May be repeated for credit.

## MASTER OF ARTS DEGREE IN ECONOMICS

### DEPARTMENTAL REQUIREMENTS

I. Prerequisites for the graduate program are Economics 3302 (National Income Analysis), Economics 3303 (Intermediate Economics Analysis), Finance 3320 (Money and Banking), or their equivalents, and three hours of Statistics.

II. Completion of Economics 3501 (Research Methodology), Economics 3502 (Microeconomic Theory), and Economics 3503 (Macroeconomic Theory), or their equivalents.

III. Completion of one of the following plans:

Plan 1. The student may elect a thirty semester hour program, at least twenty-one hours of which must be work in graduate courses, including the thesis, for which six hours of credit is allowed.

Plan 2. The student may elect a thirty-six hour program, including a minimum of twenty-one graduate hours in economics. The student must present a minimum of two suitably bound research papers, which may be drawn from previous graduate courses in economics, to a committee charged with the responsibility of conducting a final examination. The student must successfully complete Economics 3595 (Seminar in Applied Economic Research).

Plan 3. The student may elect a thirty-six hour interdisciplinary program, including a minimum of eighteen hours of graduate work in economics. The hours taken outside of economics will represent a logical, related program of study which will be approved by the graduate advisor. The student will have an option of writing a thesis or presenting two suitably bound research papers, which may be drawn from graduate courses in economics, to a committee charged with the responsibility for conducting a final examination.

#### For Graduate Students Only

*Prerequisite:* Twelve semester hours of advanced courses in economics or consent of the instructor.

#### 3501 Research Methodology

Concentrated study of data gathering methods, research design and analytical and statistical techniques used in economics research.

#### 3502 Microeconomic Theory

The determination of prices and output. The theory of markets ranging from perfect competition through monopolistic competition and oligopoly to monopoly. The theory of the firm and the industry. Welfare implications of price determination.

#### 3503 Macroeconomic Theory

The analysis of the determination of total income in the economy and related problems. Strong emphasis is given the theory of income determination, studies in the demand and supply of money, and the relationship between government policy and economic activity.

#### 3510 Economic History

A survey of the main trends in European industry and commerce since 1800, with attention to related developments outside Europe.

#### 3511 Managerial Economics

An evaluative study of the theory of economic decision making in individual firms, groups of firms, and industries under market conditions ranging from competition to monopoly.

#### 3512 The Economic Environment

An evaluative study of the determinants of levels of national income, employment, and prices.

#### 3520 Monetary and Fiscal Policies and Problems

An analysis and critique of monetary and fiscal policies and practices designed to facilitate economic stability and economic progress. Emphasis is given development and application of techniques used for analysis of economic activity, in-depth studies of stabilization policies and their effects, and analysis of problems inherent in the economic system.

#### 3530 Regional and Urban Economics

A survey course designed to acquaint the student with the theory, methodology, and problem areas of the field. Emphasis is given the theories of location, spatial organization, government policies towards stagnation or urban decay, and techniques of analysis.

#### 3540 Labor Economics

A study of theory of wage determination, the structure and role of labor organizations and the interaction of labor, industry and government.

#### 3550 Industrial Organization and Policy (3-0)

Selected topics in the structure, conduct, regulation of business and public policy toward business.

#### 3560 International Economics

Economic principles of the flow of goods, services, and capital funds across international borders. Analysis of existing national and international economic institutions influencing international trade and capital flows.

#### 3585 Economic Development

A critical analysis of policies designed to achieve economic growth in less developed countries. Topics include monetary and fiscal measures, development of human resources, capital formation, investment allocation, introduction of new technologies and coordination of domestic policies with the international economy.

#### 3566 Latin American Economics

A study of the existing economic institutions in Latin America. Application of economics principles to Latin American economic problems and policy. The emphasis is institutional rather than analytical.

#### 3570 Advanced Quantitative Methods in Economics

Correlation and regression analysis, auto correlation, elements of linear algebra, simultaneous equation problems will be treated in order to analyze linear models, index problems and treat mathematical programming, and game theory. The purpose of the course is to master the quantitative methods necessary to understand current economic literature.

#### 3580 Development of Economic Thought

An interpretative survey of principal doctrines in the field of economic theory and policy since the middle of the 18th century.

#### 3595 Seminar in Applied Economic Research

Performance of supervised research studies on selected economic problems. Emphasis is on practical, career oriented research.

#### 3598 Thesis Course

#### 3599 Thesis Course

## FINANCE

**B.A. DEGREE** — Specific requirements for the finance major are: Economics 3203 and 3204; Finance 3310, 3315, 3320, fifteen additional hours of finance and Mathematics 3120, 3201.

### For Undergraduates

#### 3215 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.



**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.

**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. *Prerequisite:* Economics 3204.

**For Undergraduates and Graduates****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.

**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:* Finance 3320.

**3330 Commercial Bank Management (3-0)**

The theory and practice of bank asset and liability management in the context of a liquidity-profitability conflict. *Prerequisites:* Finance 3310 and 3300.

**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:* Finance 3310.

**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:* Finance 3330.

**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:* Finance 3315

**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:* Finance 3310.

**3420 Monetary Theory (2-0)**

An analysis and critique of current monetary theories and their development from classical roots. Emphasis is placed on the relationship be-

tween the theories and their policy implications. *Prerequisite:* Finance 3320. Finance 3420 and Economics 3420 may not both be counted for credit.

**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:* Finance 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:* Finance 3320.

**3485 Commercial Banking Internship (3-0)**

Course designed to familiarize the student through practical experience with the various facets of commercial bank operations and management. Specific assignments allotted by participating commercial banks are coordinated through the Dean of the College of Business. *Prerequisite:* Permission of the Dean of the College of Business.

**2495-6495 Selected Problems in Finance**

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. Credit will vary according to the work performed, value being indicated by course numbers. *Prerequisite:* Consent of instructor and Department Chairman. May be repeated for credit.

**For Graduate Students Only****3511 Financial Management**

A study of the financial manager in executive decision making, involving financial planning and analysis in the allocation of the financial resources of a firm; investment decision making, capital budgeting, and financial processes of growth.

**3515 Securities Analysis**

An in-depth study of the techniques of market and security analysis. Special emphasis is placed on the development of portfolio theory, application of the theory to real-world situations, and the evaluation of portfolio management. *Prerequisite:* Finance 3511 or consent of instructor.

**3518 Capital Formation, Analysis, and Budgeting**

This course is designed to provide an in-depth study of the cost of capital and arguments concerning the appropriate specification of capital costs; analysis of the capitalization package of the firm; study of cash flows as they relate to the investment decision; risk analysis in the capital budgeting process and a study of techniques of capital budgeting under various constraints.

**3520 Seminar in the Theory of Finance**

This course is designed to provide a perusal of recent literature as well as an in-depth study of major theoretical concepts in the field of Finance. Specific topics to be covered are at the discretion of the instructor to accommodate emphasis change in literature.

1



**Curriculum and Instruction  
Educational Administration  
and Supervision  
Educational Psychology  
and Guidance  
Health and Physical Education**

**Education Building 510  
(915) 747-5572**

# **The College of Education**

## THE COLLEGE OF EDUCATION

### INTRODUCTION

The College of Education of the University of Texas at El Paso has a two-fold mission: to provide men and women with the opportunity to become effective teachers of students who come from the many and varied segments of society, who have many and varied needs, and who live in a demanding, rapidly changing environment; and to work with other members of the education profession in the solution of educational problems.

The College of Education offers programs that will help students attain a knowledge base relevant to teaching, skills in classroom management, and in human relations, and provides alternate routes for the attainment of these competencies. The faculty of the College of Education strives to demonstrate by example the quality of teaching expected of graduates. Thus, faculty members engage in professional development that includes research, scholarly activity, and participation in professional educational services to the community.

The College 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 provide continuous relevance of pre-service and in-service classroom practice.

Graduate programs are offered to the practitioner to maintain and enhance professional skills. All programs offered by the College of Education are accredited by state, regional, and national accreditation agencies.

The College of Education is organized into four departments that offer graduate and undergraduate programs in addition to support services to students interested in teacher education. The Departments of the College include:

Curriculum and Instruction  
Educational Administration and Supervision  
Educational Psychology and Guidance  
Health and Physical Education

The College of Education offers three degree programs at two levels of preparation:

Bachelor of Science in Education  
Master of Arts with a major in Education  
Master of Education  
Master of Science with a major in Health and Physical Education

The Bachelor of Science in Education degree provides provisional certification at the elementary or secondary school level. There are 23 areas of teaching subjects from which elementary education majors choose; 24 teaching fields for secondary education majors, and 4 composite teaching fields for secondary education majors electing certification in only one teaching field.

The Master of Arts and Master of Education degrees provide the student the opportunity of earning the Professional Teacher's Certificate concurrent with the degree work.

### Teacher Education and Certification

Teacher education is one of the important purposes of The University of Texas at El Paso. Each teacher education program is concerned with the total education of the prospective teacher, emphasizing the development of moral and ethical character, and proficiency in the use of basic skills. All students are required to complete successfully a balanced program consisting of work in arts and science, academic specialization, and professional development.

The teacher certification laws of Texas, which became effective September 1, 1955, provided for two general types of certificates: the permanent provisional and the permanent professional. The permanent provisional certificate is based on a bachelor's degree and prescribed state-approved certification program. The professional certificate is based on a

minimum of satisfactory completion of at least thirty (30) additional hours of graduate study beyond the bachelor's degree and a prescribed state-approved certification program.

The Texas Education Agency has approved specific programs in teacher certification for the various colleges of the State of Texas. Certificates can be obtained through a particular college only in those areas and fields so approved for that college.

The College of Education is fully accredited by both the National Council for Accreditation of Teacher Education (NCATE) and the Texas Education Agency (TEA). Students interested in earning teachers' as well as counseling and administration certificates should consult with the certification office in the College of Education at the beginning of their program.

The University of Texas at El Paso has approved *provisional* certificate programs as follows:

1. Elementary Education
2. Secondary Education
3. All-Levels Programs
4. Deaf and Severely Hard of Hearing
5. Speech and Hearing Therapy
6. Bilingual Endorsement
7. Early Childhood for Handicapped Endorsement
8. Kindergarten Endorsement

The University of Texas at El Paso has *professional* certificate programs in the following areas:

1. All-Levels Music
2. Elementary Teaching
3. Secondary Teaching
4. Counselor
5. Educational Diagnostician
6. Mid-Management Administrator
7. Reading Specialist
8. Speech and Hearing Therapy
9. Superintendent
10. Supervisor

A student who expects to receive a teaching certificate upon graduation must file an application with the Certification Office during the semester prior to the one in which he intends to graduate. In addition, she/he may be required to pass an exit examination. The cost of this examination will be paid by the student at the time of application for degree conferral.

Questions concerning certificates should be directed to the Certification Officer.

### All-Levels Teacher Programs

ART ( Bachelor of Arts), PHYSICAL EDUCATION (Bachelor of Science in Education), MUSIC (Bachelor of Music), DEAF AND/OR SEVERELY HARD OF HEARING (Bachelor of Arts)  
An all-levels teaching field may be selected from the following programs.

(For additional information consult with the head of the department concerned.)

#### ART

Academic Foundations (60 semester hours)

ARTS & SCIENCES (36 semester hours)

- 12 — ENGLISH 3111 (or 6111) and ENGLISH 3112\* (or Linguistics 4112-4113\*); and 6 semester hours from 3211-3212, 3213-3214, 3215-3216, 3218
- 6 — HISTORY 3101-3102, or 3103-3104
- 6 — POLITICAL SCIENCE 3110, 3111
- 12 — Twelve semester hours from two of the following: SCIENCE — MATHEMATICS — FOREIGN LANGUAGE

**Degree Requirements and Electives (24 semester hours)**

- 3 — SPEECH.\*
- 3 — PHILOSOPHY 3208.
- 3 — ECONOMICS 3203 or SOCIOLOGY 3101.
- 3 — DRAMA 3113 or MUSIC 3124, or MUSIC 3111.
- 12 — ELECTIVES.

**Professional Development\*\***

- 18 — ED.P. 3301, 3310; ED.C. 3307, 3311, 3496, 3498.

**Academic Specialization\*\***

- 51 — ART 3101, 3102, 3103, 3104, 3201, 3202, 3203, 3204, 3205, 3208, 3209, 3311, 3312, 3321, 3322, plus 6 advanced hours.  
A minimum total of 132 semester hours including 30 advanced hours.

**MUSIC EDUCATION (Bachelor of Music)**

All music majors must declare a major performing medium. Placement and Proficiency Auditions in piano, voice, and major instrument are required of all music majors. A private interview and a placement test are required in music theory to determine the level of study. Advanced Placement is possible.

Music Majors transferring from another institution must pass proficiency tests on their major and secondary instruments, piano, and theory.

For detailed requirements and course sequence for music majors and minors, consult the Music Department Handbook with the Department Chairman.

**Academic Foundations (62 semester hours)**

- 12 — ENGLISH 3111 (or 6111) and ENGLISH 3112\* (or Linguistics 4112-4113\*) and 6 semester hours from 3211-3212, 3213-3214, 3215-3216, 3218.
- 6 — HISTORY 3101-3102, or 3103-3104.
- 6 — POLITICAL SCIENCE 3110, 3111.
- 12 — Twelve semester hours from at least two of the following:  
SCIENCE — MATHEMATICS — FOREIGN LANGUAGES.

**Degree Requirements and Electives**

- 8 — FOREIGN LANGUAGE DICTION (Choral Plan only)
- 3 — SPEECH 3101 or 3102.\*
- 8 — MUSIC LITERATURE 2121-2122 and 4 hours from 2319, 2320, 2321, 2322, 2323.
- 3 — MUSIC THEORY 3113 (acoustics).
- 4-12 — ELECTIVES

**Professional Development (18 semester hours)\*\***

- 12 — Ed.P. 3301 and Ed.P. 3310; Ed.C 3450, 3311, 3496, 3498.
- 6 — MUSIC EDUCATION

**Academic Specialization**

*Plan Plan*

C = Choral Plan, 55  
I = Instrumental Plan, 63

- 17 17 — THEORY 1111, 1112, 3114; 1211, 1212, 3213, 3214; 2315; 2411 (Choral Plan), or 2412 (Instrument Plan).
- 12 12 — MUSIC EDUCATION 3331, 3333, 3336, 3433.
- 12 — MAJOR INSTRUMENT (Orchestra or Band Majors), including a minimum of 2 advanced semesters. Students are expected to study every semester in residence.

- 6 — PIANO
- 8 — LOW STRINGS, 1175, HIGH STRINGS 1176, REEDS 1167 and 1177, BRASSES 1168 and 1178, PERCUSSION 2179.
- 12 — — MAJOR INSTRUMENT (Voice, Guitar, or Keyboard instruments), including a minimum of 2 advanced semesters. Students are expected to study every semester in residence.
- 8 — — SECONDARY INSTRUMENT (Voice or Piano). Guitar Majors take Piano.
- 6 — — Additional applied music, including Vocal Pedagogy 2493. (Guitar Majors take 6 hours of Voice in addition to 2493.)
- — — Participation for 8 semesters or each semester in residence in the ensemble of the major instrument. For exceptions, petition the Music Faculty in writing.
- — — Instrument Plan requires one semester of Chorale or Chorus and four semesters of Chamber Music. Guitar majors take Guitar Repertory 1194 in place of Chamber Music.
- — — Keyboard Major requires four semesters of Chamber Music and three of Accompanying.
- 6 — Guitar and Keyboard Majors take 3 semesters of secondary applied lessons in an Orchestra or Band instrument for Inst. Plan. Guitar and Keyboard Majors must participate in the major Ensemble of the vocal or instrumental areas for at least 4 semesters.
- — — Recital participation and/or attendance is required every semester in residence and is considered laboratory for other music courses. Music Education Majors must present a partial recital.

A minimum total semester hours of 135 (Choral or Instrumental plan) including 30 advanced hours.

**Speech, Hearing, and Language Certification and Deaf/Severely Hard of Hearing.**

(See Speech, Hearing, and Language Disorders; Department of Drama and Speech, Plan II & Plan III.)

**Deaf and/or Severely Hard of Hearing Certification**

(See Speech, Hearing, and Language Disorders; Department of Drama and Speech, Plan III)

\*A grade point average of not less than 2.0 is required in both English 3111 (or 6111) and English 3112 and any three hours of Speech. Any student declared deficient in English or Speech by the certifying committee or major department may be required to complete or repeat additional English and Speech courses regardless of the grade point average.

\*\*A grade point average of not less than 2.5 is required in both Professional Development and Academic Specialization areas.

**All Levels Physical Education**

**ACADEMIC FOUNDATIONS**

**Arts & Sciences (33 semester hours)**

- 12 — ENGLISH 3111 (or 6111) and ENGLISH 3112\* or Linguistics 4112-4113\*; and 6 semester hours from 3211-3212, 3213-3214, 3215-3216, 3218.
- 6 — HISTORY 3101-3102, or 3103-3104.
- 6 — POLITICAL SCIENCE 3110-3111.
- 3 — SPEECH\*
- 3 — MATHEMATICS.
- 3 — SCIENCE, PHILOSOPHY, SOCIOLOGY or PSYCHOLOGY.

**Degree Requirements and Electives (29 semester hours)**

- 10 — PHYSICAL EDUCATION 4301, and 6 semester hours of physical education skills.
  - 13 — BIOLOGY 3105-1107, 3106-1108, 4211-1212.
  - 6 — Electives.
- Professional Development (24 semester hours)\*\*
- 18 — ED.P. 3301, 3310, 3420; ED.C. 3311, ED.C. 3307  
Plus three semester hours from:  
ED.C. 3312  
ED.C. 3467 (required with a Math. teaching field in Secondary Education)  
ED.C. 3468 (required with a Science teaching field in Secondary Education)
  - 6 — PHYSICAL EDUCATION 3496, 3498.  
Before beginning the Professional Development sequence, students should confer with either the departmental advisor or the coordinator of field experiences.

Academic Specialization (60 semester hours)\*\*

- 36 — PHYSICAL EDUCATION 3103, 3320, two courses from: PHYSICAL EDUCATION 3206, 3207, 3209, 3210, 3215, 3316; and PHYSICAL EDUCATION 3303, 3304, 3305, 3311, 3312, 3414, 3318, and one course from either PHYSICAL EDUCATION 3408, 3409 or HEALTH EDUCATION 3201.
- 24 — Second Teaching Field, listed under teaching fields: Secondary Education.  
May include courses in the Academic Foundations. A minimum total of 140 semester hours including 30 advanced hours.

Athletic Training Sequence

A sequence of courses to meet the educational requirements of the Texas Athletic Trainers Association has been developed by the Health and Physical Education Department. Students who wish to prepare themselves to take the Texas Association examinations should consult both the head athletic trainer and a physical education department advisor. A limited number of students will be admitted to this sequence.

## Bachelor of Science in Education

(Program A or B must be selected and completed)

### REQUIREMENTS IN ACADEMIC FOUNDATIONS FOR ELEMENTARY AND SECONDARY EDUCATION MAJORS

<i>Minimum Semester Hours</i>		
<i>Program A</i>	<i>Program B</i>	
		ACADEMIC FOUNDATIONS: ARTS AND SCIENCES (36 semester hours)
12	12	ENGLISH 3111 (or 6111) and ENGLISH 3112* (or Linguistics 4112-4113*); and 6 semester hours from 3211-3212, 3213-3214, 3215-3216, 3218.
6	6	HISTORY 3101-3102, or 3103-3104.
6	6	POLITICAL SCIENCE 3110, 3111.
12	—	Twelve semester hours from two of the following: SCIENCE — MATHEMATICS — FOREIGN LANGUAGES
—	6-14	FOREIGN LANGUAGE: Completion of 3201-02 or 3203-04.
—	6	MATHEMATICS. (Math 3302 is required for Elementary Ed. Majors).
		DEGREE REQUIREMENTS AND ELECTIVES (30 semester hours)
6	—	ED.C. 3101 or 3437, ED.P. 3201.
3	3	SPEECH 3101* 3103,*† 3104,*† or 3210. Six semester hours from the humanities, behavioral or social sciences.

		(See College of Education advisor for approved list)
6	12	LABORATORY SCIENCES from College of Science.
—	3	ECONOMICS.
—	3	PHILOSOPHY 3103 or 3206.
—	3	PSYCHOLOGY 3101.
3	—	MATHEMATICS. (Math 3302 required for Elementary Education.)
6	6	ELECTIVES.

### Admission to the Programs of Elementary and Secondary Education

Before a student may be admitted to teacher education by having a degree plan made for the degree of Bachelor of Science in Education, it will be necessary for him to satisfy College of Education admission requirements. Acceptable standards must be maintained throughout the college career of the student as well as at the time of admission to teacher education.

\*A grade point average of not less than 2.0 is required in both English 3111 (or 6111) and English 3112 and any three hours of Speech. Any student declared deficient in English or Speech by the certifying committee or major department may be required to complete or repeat additional English and Speech courses regardless of grade point average.

\*\*A grade point average of not less than 2.5 is required in both the Professional Development and Academic Specialization areas.

†Speech 3103 is recommended for the Elementary Education major. Speech 3104 is recommended for bilingual students wishing to improve their oral English. SHLD 3210 may be taken as an academic foundation course only for Special Education, Speech and Hearing Therapy, and Deaf and Severely Hard of Hearing teaching fields.

## Bachelor of Science in Education

### ELEMENTARY EDUCATION

<i>Minimum Semester Hours</i>		
<i>Program A</i>	<i>Program B</i>	
66	66	ACADEMIC FOUNDATIONS ACADEMIC SPECIALIZATION, complete Plan I or II.
18	18	PLAN I: Teaching Subjects, complete one teaching subject listed under Teaching Subjects, Elementary Education, Plan I. (A minimum Grade Point Average of 2.5 is required for admission to student teaching.) Teaching subjects include courses in Academic Foundations.
18	18	Combination Subjects, complete 18 semester hours from the following: Art Education 3311, Drama 4350, English/Linguistics 3308, 3220, Mathematics 3303, 3304, Music Education 3334, Geography 3110, Physical Education 3320, 3318, 3414, Ed.C. 3305, 3333, Ed.P. 3425, Health Education 3302. Not more than 6 hours of mathematics and/or natural science and/or modern languages. Combination Subjects may not include courses in Academic Foundations or Teaching subject.
24	24	PLAN II: Teaching Subject, complete one teaching subject listed under Teaching Subjects, Elementary Education, Plan II. (A minimum Grade Point Average of 2.5 is required for admission to student teaching.) Secondary teaching fields and sec-

12	12	<p>ondary composite teaching fields may include courses in Academic Foundations. NOTE: A grade point average of not less than 2.5 is required in Education classes in both Programs A and B.</p> <p>Combination Subjects, complete 12 semester hours from the following: Art Education 3311, Drama 4350, English/Linguistics 3220, 3308, Mathematics 3303, 3304, Music Education 3318, 3414, Ed.C. 3305, 3333, 3320, 3425, Health Education 3302, and not more than 6 hours of mathematics and/or natural science and/or modern languages. Combination Subjects may not include courses in Academic Foundations or Teaching subject.</p>
18	18	<p><b>PROFESSIONAL DEVELOPMENT</b> Ed.P. 3301, 3420; Ed.C. 3302, 3306, 3496-97.</p>
12	12	<p><b>ELEMENTARY CONTENT</b> From: Ed.C. 3404, 3405 and six semester hours from Ed.C. 3303, 3304, 2205, and 1450. ELECTIVES to make a minimum of 132 semester hours.</p>

ED.C. 3468 (required for certification with a Science teaching field in Secondary Education)  
ELECTIVES to make a minimum of 132 semester hours.

### Endorsement Programs

The following endorsement programs have been approved by the Texas Education Agency. These endorsements may be added to a valid Texas certificate. Each will have specific requirements indicated. Persons pursuing a degree or certification may take the course for an endorsement program at the same time by requesting that their academic advisor prepare a deficiency plan for the program(s) desired.

#### BILINGUAL ENDORSEMENT

For persons with a Bachelor's Degree and a valid Texas Elementary Certificate.  
CURR 3434, CURR 3435, GUID 3402, CURR 3450 (ESL Methodology in Content Area)  
Note: Exit requirements for the Bilingual Endorsement Program:

1. Professional-level oral and written proficiency in the language of the target population as measured by an examination approved by the Texas Education Agency.
2. Successful completion of 12 semester hour program
3. One year of successful classroom teaching experience in a bilingual program approved by the Texas Education Agency . . . . . Total: 12 hours

#### EARLY CHILDHOOD FOR HANDICAPPED CHILDREN ENDORSEMENT

For persons holding a valid Texas Elementary, All-Levels, Vocational Homemaking, Deaf and Severely Hard of Hearing, or Speech and Hearing Therapy Certification.  
GUID 3321, GUID 3425, CURR 3451, and PE 3318

#### KINDERGARTEN ENDORSEMENT

For persons holding a valid Texas Elementary, All-Levels, Vocational Homemaking, Deaf and Severely Hard of Hearing, or Speech and Hearing Therapy Certification.  
GUID 3401, CURR 3451, CURR 3452, and CURR 3491. CURR 3491 must be taken concurrently with CURR 3496. CURR 3491 may sometimes be replaced by an approved Early Childhood course if the applicant has completed student teaching at another level and has taught for one year in an accredited kindergarten and receives prior written approval from the Certification Officer of the College of Education. Verification of the one year of kindergarten experience is required from the school in writing.

### Teaching Subjects: Elementary Education

Consult advisor in the College of Education concerning the selection of courses.

PLAN I	Total Hours
ART — Art 3101, 3102, 3103, 3104, 3311, 3321 and 3 advanced hours . . . . .	21
BIOLOGICAL SCIENCES — Biology 3105-06, 1107-08, 3216 plus 9 advanced hours . . . . .	20
EARTH SCIENCE — Geology 3103 or 3106, 3104, 3304, 3305, 3306 plus 3 hours from: Geology 3309, 3315, 3340, 3359, 3421 . . . . .	18
ECONOMICS — Economics 3203, 3204, 3302 or 3303, plus 9 advanced hours . . . . .	18

## Bachelor of Science in Education

### SECONDARY EDUCATION

Minimum Semester Hours	
Program A	Program B
66	66
48	48

**ACADEMIC FOUNDATIONS**  
ACADEMIC SPECIALIZATION, complete Plan I or II.

**PLAN I:**  
Secondary Teaching Fields, complete two teaching fields listed under Teaching Fields, Secondary Education, Plan I. (A grade average of not less than 2.5 is required in each teaching field.) Secondary teaching fields and secondary composite teaching fields may include courses in Academic Foundations. NOTE: A grade point average of not less than 2.5 is required in Education classes in both Programs A and B.

**PLAN II:**  
Secondary Composite Teaching Field,\* complete one composite teaching field under Composite Teaching Fields, Secondary Education, Plan II. (A grade average of not less than 2.5 is required in the composite teaching field.) Secondary teaching fields and secondary composite teaching fields may include courses in Academic Foundations. NOTE: A grade point average of not less than 2.5 is required in Education classes in both Programs A and B.

18	18	<p><b>PROFESSIONAL DEVELOPMENT</b> Ed.P. 3310, Ed.C. 3311, Ed.P. 3420, Ed.C. 3498-3499. Plus three semester hours from: Ed.C. 3312 Ed.C. 3467 (required for certification with a Math teaching field in Secondary Education)</p>
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HISTORY — History 3101-3102 or 3103-3104, 3201 or 3202, plus 9 advanced hours	18	gram)	30
MATHEMATICS — Mathematics 3101, 3120, 3201 plus 9 advanced hours	18	Note: Ed.C 3468 is required for certification.	
PHYSICAL EDUCATION — P.E. 3320, 3318, 3411, 3408 or three semester hours coaching 3414, three semester hours skills	18	MATHEMATICS — Mathematics 4110, 4111, 3212, plus 13 hours of which 12 are advanced	24
POLITICAL SCIENCE — Political Science 3110, 3111, plus 12 hours of which 9 are advanced	18	PHYSICAL EDUCATION — P.E. 3103, 3320, 3318, 3206 or 3414, 3303, 3311, and 3 semester hours of Skills Courses, H.E. 3201	24
PHYSICS — Physics 3101-3102 or 4103-4104, 3107, 3331, 1475-6475 or any combination of -475 totaling a minimum of 6 hours	18	PHYSICS — Physics 3101, 4103-4104, plus at least 3 semester hours from Physics 3102, 3106, 3107, 3108; plus at least 6 semester hours from: Physics 2343, 2446, 3331, 3470, 1477-3477, plus at least 6 semester hours from 1475-6475 (any combination of the -475 totaling a minimum of 6 semester hours)	26
PSYCHOLOGY — Psychology 3101, 3201, plus 3 hours of lower division Psychology; plus 9 hours of advanced Psychology, not to include 3452	18	POLITICAL SCIENCE — Political Science 3110, 3111, plus 18 hours of which 12 are advanced	24
READING — Curriculum 3404, 3408, 3440, 3441, and 6 hours from 3423, 3424, 3425, 3426, 3449, 3450 (When the topic is reading)	18	SOCIOLOGY — Sociology 3101, 3102, 3301, Anthropology 3102 and 12 advanced hours in Sociology	24
SOCIOLOGY — Sociology 3101, 3102; Anthropology 3102 plus 9 advanced hours in Sociology	18	SPANISH — Spanish 4101-4102* or 4103-4104, 3201-02 or 3203-04, 3357, 3402, plus 6 advanced hours, preferably including Spanish 3309 (Non-native speakers are advised to complete Spanish 3355) (Placement out of 4102 or 4104 requires taking an additional advanced course)	26
<b>PLAN II</b>		SPEECH — Speech 3205; 3221 or 3222; 3307, 3316, 3333; plus 3 advanced hours in Speech; SHLD 3210, Drama 3301 (Speech 3103 with 1103 is recommended as the Academic Foundation course for Elementary Education Speech majors)	24
ART — Art 3101, 3102, 3103, 3104, 3311, plus 9 advanced hours	24		
BILINGUAL BICULTURAL EDUCATION — Curriculum 3434, 3435, 3436; Guidance 3402; Linguistics 3472; Sociology 3336 or History 3309; English 3310 or 3374; Spanish 3402 (See advisor for language proficiency requirements and combination subjects recommended)	24		
BIOLOGICAL SCIENCES — Biology 3105-06, 1107-08, 3216, plus 13 advanced hours	24		
CHEMISTRY — Chemistry 3105-06, 2106, 2213, 2214, plus 12 advanced hours	24		
DEAF AND/OR SEVERELY HARD OF HEARING — SHLD 1110, 3110, 3210 (taken as an Academic Foundation Course), 3312, 3315, 3409, 3410, 3411, 3413, 3414, 3416, 3441	30		
EARTH SCIENCE — Geology 3103 or 3106, 3104, 3304, 3305, 3306, 3315 and 6 hours from 3309, 3310, 3340, 3359, 3421 (Physics 1107-08 is recommended for the science component of the degree program)	24		
ECONOMICS — Economics 3203, 3204, 3302, or 3303; plus 15 advanced hours	24		
ENGLISH — English 3111 (or 6111) and English 3112, 3211-12; Linguistics 3307, English 3311-12, plus 3 additional hours of advanced English. (Students exempted from English 3111 by examination are required to take 3 hours of advanced English in addition to the above to complete the total of 24 hours required)	24		
FRENCH — French 4101-02*, 3201-02, 3357, plus 9 advanced hours (Non-native speakers are advised to complete French 2205). (Placement out of 4102 requires taking an additional advanced course)	26		
GENERIC SPECIAL EDUCATION — Guidance 3220, 3321, 3323, 2327, 2331, 3433, 3435, 3437, 3440	25		
GERMAN — German 4101-4102*, 3201-02, 3357, plus 9 advanced hours (Placement out of 4102 requires taking an additional advanced course)	26		
HISTORY — History 3101-3102 or 3103-3104, 3201, 3202, plus 12 advanced hours	24		
LIFE-EARTH MIDDLE SCHOOL SCIENCE — Biology 3105-06; 1107-08, 3217, 1216; Geology 3103 or 3106, 3104, 3304, 3305, 3306 plus 3 hours of advanced Biology (Physics 1107-08 is recommended for the science component of the degree program)			
UNIVERSITY OF TEXAS AT EL PASO			

gram)	30
Note: Ed.C 3468 is required for certification.	
MATHEMATICS — Mathematics 4110, 4111, 3212, plus 13 hours of which 12 are advanced	24
PHYSICAL EDUCATION — P.E. 3103, 3320, 3318, 3206 or 3414, 3303, 3311, and 3 semester hours of Skills Courses, H.E. 3201	24
PHYSICS — Physics 3101, 4103-4104, plus at least 3 semester hours from Physics 3102, 3106, 3107, 3108; plus at least 6 semester hours from: Physics 2343, 2446, 3331, 3470, 1477-3477, plus at least 6 semester hours from 1475-6475 (any combination of the -475 totaling a minimum of 6 semester hours)	26
POLITICAL SCIENCE — Political Science 3110, 3111, plus 18 hours of which 12 are advanced	24
SOCIOLOGY — Sociology 3101, 3102, 3301, Anthropology 3102 and 12 advanced hours in Sociology	24
SPANISH — Spanish 4101-4102* or 4103-4104, 3201-02 or 3203-04, 3357, 3402, plus 6 advanced hours, preferably including Spanish 3309 (Non-native speakers are advised to complete Spanish 3355) (Placement out of 4102 or 4104 requires taking an additional advanced course)	26
SPEECH — Speech 3205; 3221 or 3222; 3307, 3316, 3333; plus 3 advanced hours in Speech; SHLD 3210, Drama 3301 (Speech 3103 with 1103 is recommended as the Academic Foundation course for Elementary Education Speech majors)	24

\*In the secondary teaching field, courses 4101 and 4102 are prerequisites for 3201; courses 4103 and 4104 are prerequisites for 3203. Credit earned in prerequisite courses, either by examination or enrollment, would add to the total hours required in the teaching field (See section on Advanced Placement for additional information).

\*\*Texas Education Agency requires 13 semester hours of Biology for certification in Health Education.

## Teaching Fields: Secondary Education

Consult advisor in College of Education concerning selection of courses.

ANTHROPOLOGY — Anthropology 3101, 3102, 3216, 3217; plus 12 hours of upper division (3300-3400 with help of Anthropology advisor)	24
BIOLOGICAL SCIENCES — Biology 3105-06, 1107-08, 3214, 1215, 3216, 1217, 3318, 1319, 3320, 3321, plus 3 advanced hours (Prerequisites for Biology 3214 are Chemistry 3105-06, 2106)	29
Note: Ed.C. 3468 is required for certification.	
CHEMISTRY — Chemistry 3105-06, 2106, 2213 and 2214, 3324-1324, 3325-1325, plus 6 advanced hours from 3326, 3428, 3430, 3432, 2411 and 2412, 3465, 3470, 1470	26
Note: Ed.C 3468 is required for certification.	
DANCE — Dance Labs: P.E. 1207, 1208, 1209, 1210, 1211, and either Music 3343 or 3344; P.E. 3316, 3411; P.E. 3215 or Music 2343 (Prerequisite: Ballet 3242); Drama 3221, P.E. 3319, P.E. 3412 or Music 3444 (Prerequisite: Ballet 3242 and Ballet 3342) or P.E. 3317; P.E. 3312 (Prerequisite: Biology 3105-06, 1107-08, and Biology 4211, 1212). Must have 12 advanced hours and a minimum of 28 hours	28
DEAF AND/OR SEVERELY HARD OF HEARING — SHLD 1110, 3110, 3210 (taken as an Academic Foundation course), 3312, 3315, 3409, 3410, 3411, 3413, 3414, 3416, 3441	30
DRAMA — Drama 3110, 3113, 3210, 3221; Drama 4213 or 4313; Drama 3325 or 3425; Drama 3332 or 3342; six hours from Drama 3340, 3357, or 3358 (Speech 3103 and the required lab 1103 is recommended)	28



**EARTH SCIENCE** — Geology 3103 or 3106, 3104, 3304, 3305, 3306, 3315, plus 6 hours from 3309, 3310, 3340, 3359 and 3421 (Physics 1107-08 is recommended for the degree program) . . . . . 24  
*Note:* Ed.C 3468 is required for certification.

**ENGLISH** — English 3211-3212, 3311-3312; 3320 or 3321; 3365; 3372 or 3374 or 3456; 3455; 3313 or Linguistics 3307 . . . . . 27

**FRENCH** — French 3201-3202\*, 3301, 3303, 3357, 3401, plus 9 advanced hours (Non-native speakers are advised to complete French 2205) . . . . . 27

**GENERIC SPECIAL EDUCATION** — Guid 3220, 3321, 2327, 2331, 3323, 3433, 3435, 3437, 3440 . . . . . 25

**GERMAN** — German 3201-3202\*, 3301, 3303, 3357, and 3401 plus 9 advanced hours . . . . . 27

**HEALTH EDUCATION\*\*** — Health Education 3201, 3202, 3307, 3401, 3403, and 9 hours from 3101, 3301, 3402, 3404, 3405 . . . . . 24

**HISTORY** — History 3101-3102 or 3103-3104, 3201, 3202, plus 12 advanced hours . . . . . 24

**JOURNALISM** — Journalism 3202, 3204, 3305; Mass Communications 3102, 3201, 3207, 3355; plus 6 advanced hours . . . . . 27

**LIFE-EARTH MIDDLE SCHOOL SCIENCE** — Biology 3105-06, 1107-08, 3216, 1217; Geology 3103 or 3106, 3104, 3304, 3305, 3306 plus 3 hours of advanced biology (Physics 1107-08 is recommended for the science component of the degree program) . . . . . 30  
*Note:* Ed.C 3468 is required for certification.

\*In the secondary teaching field, courses 4101 and 4102 are prerequisites for 3201; courses 4103 and 4104 are prerequisites for 3203. Credit earned in prerequisite courses, either by examination or enrollment, would add to the total hours required in the teaching field (See section on Advanced Placement for additional information).  
 \*\*Texas Education Agency requires 13 semester hours of Biology for certification in Health Education.

**MATHEMATICS** — Mathematics 4111, 3212, 3217, 3325, 3341, plus 9 advanced hours, 6 of which must be chosen from Math 3319, 3330, and 3422 . . . . . 25  
*Note:* Ed.C 3467 is required for certification.

**PHYSICAL EDUCATION** — 3303, 3304, 3305, 3311, 3312, 3414, 3411 or three semester hours coaching or 3408, six semester hours skills; plus Biology 3105-06, 1107-08, 4211, 1212 (This teaching field may not be used by All-Levels P.E. persons as a teaching field) . . . . . 27

**PHYSICAL SCIENCE** — Physics 4103-04, Chemistry 3105-06, 2106, and 12 advanced semester hours from Physics and/or Chemistry . . . . . 28  
*Note:* Ed.C 3468 is required for certification.

**PHYSICS** — Physics 4103-4104, 1120, 1121, 3221, 3222, 3325, 3326, 2343; plus sufficient hours from courses below to total 12 advanced semester hours and total at least 26 semester hours: Physics 3331, 3431, 2446, 3351, 3441, 1475-6475 (no more than 10 hours from this combination can be counted) . . . . . 26  
*Note:* Ed.C. 3468 is required for certification.

**POLITICAL SCIENCE** — Political Science 3110, 3111, 6 additional hours, plus 12 advanced hours . . . . . 24

**PSYCHOLOGY** — Psychology 3101, 3103, 2321-1321 or 2322-1322, plus 3 semester hours of lower division Psychology; plus 12 semester hours of advanced Psychology, not to include 3452 . . . . . 24

**SOCIOLOGY** — Sociology 3101, 3102, 3301, 3333, Anthropology 3102, plus 9 semester hours of advanced courses in Sociology . . . . . 24

**SPANISH** — Spanish 3201-02 or 3203-04\*, 3302 or 3304, 3301 or 3303, 3309, 3320, 3357, 3401, 3472 (Non-native speakers are advised to complete Spanish 3355) . . . . . 27

**SPEECH** — Speech 1221, 3205; 3206 or 3220; 3221 or 3222; 3290, 3307, 3333; plus 6 advanced hours of Speech . . . . . 25  
*Note:* Speech 3101 is recommended as an Academic Foundation course for Secondary Education majors.

**Composite Teaching Fields:  
 Secondary Education**

**BUSINESS (WITH SHORTHAND)** — (*Prerequisite:* Administrative Services 3101 and 3103 or the proficiency equivalent). Administrative Services 3102, 3104, 3301, 3308, 3498, 3499, plus 6 advanced hours of electives from Administrative Services; Accounting 3201, 3202; Business Law 3301; Management 3300; Marketing 3300; plus 9 hours of electives from Accounting, Business Law, General Business, Management, Marketing, or Statistics . . . . . 48  
*Note:* This teaching field requires 18 advanced semester hours.

**SCIENCE** — 30 hours from Biology 3105-06, 1107-08; Chemistry 3105-06, 2106, 2213, 2214; Geology 3103 or 3106 and 3104 and 3304 or 4220; Physics 4103, 4104 (except Physics 1120, 1121, 3120, and 3222 required for Physics option); plus completion of one of the following:  
 (1) Biology 3214 (*Prerequisite:* Chemistry 3105-06, 2106), 1215, 3216, 1217, 3318, 1319, 3320, 3321, plus 8 advanced hours of Biology.  
 (2) Geology 3304, 3305, 3306, 3315, plus 6 hours from 3309, 3310, 3340, 3359 and 3421 (Physics 3107-08 is recommended in the science component of the degree program).  
 (3) Physics: 18 advanced hours.  
 (4) Chemistry 3321-2321, 3322, 2322, 3351-1351, plus 6 additional advanced hours, or Chemistry 3324-1324, 3325-1325, 3326-1326, plus 6 additional advanced hours . . . . . 48  
*Note:* Ed.C. 3468 is required for certification.

**SOCIAL STUDIES** — History 3101-3102 or 3103-3104; 3201, 3202, plus 12 advanced hours; Political Science — 6 advanced hours; Sociology 3101, 3102, plus 3 advanced hours; Economics 3203, plus 3 advanced hours; Geography 3110 . . . . . 48  
*Note:* Discuss employment opportunities with College of Education advisor in this composite teaching field.

**ENGLISH/READING COMPOSITE** — Single Teaching Field English (*Prerequisite:* English 3111 (or 6111)-3112 or Linguistics 4112-4113; 3211-3212 under Academic Foundations): English 3215, 3216, 3311, 3312, 3320, 3455 (Composition), 3456 (Literature); complete 6 hours advanced Literature, 3 semester hours advanced Linguistics, Curriculum 3408, 3425, 3441, plus 6 semester hours from Curriculum 3404, 3424, 3425, 3440, 3450 (when the topic is Reading); plus 3 semester hours from the following: Speech 3205, 3307, 3333 or Drama 3301, or History 3354, 3355 . . . . . 48  
*Note:* Discuss employment opportunities with College of Education advisor in this teaching field.

## CURRICULUM AND INSTRUCTION

601 Education Building  
(915) 747-5426

**CHAIRMAN:** James L. Milson

**PROFESSORS:** Burmeister, Burns, Ekwall, Hernandez, Klingstedt, Milson, Wagner

**ASSOCIATE PROFESSORS:** Aho, Ball, Barker, Edwards, Kies, Scarbrough

**ASSISTANT PROFESSORS:** Bixler-Marquez, Davis,

Descamps, Selig

**LECTURERS:** Cavin, Villarreal

*General Prerequisite* for 3300 and 3400 courses: Junior standing (completion of 60 semester hours) and a degree plan on file.

### ELEMENTARY EDUCATION

#### 2205 Children's Literature in The Elementary School (2-1)

Children's literature and the administration of the recreational reading program in relation to the content subjects in the elementary school.

#### 2207 Multiculture in Elementary Schools (2-1)

Provides the elementary classroom teacher with the opportunity to obtain the awareness, knowledge and skills necessary to work effectively with children who are language and/or culturally different. Practical field application will be stressed. Although emphasis is on Spanish-speaking school populations, course content is applicable to any language group.

#### 3302 The Curriculum and Modern Media in the Elementary School (3-1)

An introduction to the curriculum in the elementary school; consideration of the function of modern media in curriculum development and application.

#### 3303 Social Studies in the Elementary School (3-1)

Content, materials, and methods of teaching social studies in the elementary school. *Prerequisite:* Ed.P. 3301.

#### 3304 Science in the Elementary School (3-1)

The content and strategies for teaching the recently developed elementary science curriculum programs will be emphasized. Research in the area of science in the elementary school and implications for teaching will be the focus of the course. *Prerequisite:* Ed.P. 3301.

#### 3306 Language Arts Materials and Methods in the Elementary School (3-1)

Materials and methods of teaching language arts in the elementary school. *Prerequisites:* Ed.P. 3301 and Ed.C. 3302.

#### 3307 Curriculum and Multiculturalism in the Elementary School (3-1)

An introduction to the curriculum in the elementary school, implications of cultural pluralism for curriculum, and applications within specific subject areas of the elementary school. For all-levels teacher education students.

#### 3319 Special Education for the Elementary Teacher (3-1)

A study of basic concepts in special education; including least restrictive environment, characteristics and learning differences of exceptional pupils, and informal assessment and placement procedures. Focus upon programming for the mainstreamed student in the elementary classroom. Observation and field experience with exceptional learners.

#### 3405 Methods for Elementary School Mathematics (3-1)

Content, materials and methods of teaching mathematics in the elementary school.

#### 3436 ESL Methodology in the Content Areas (3-0)

A course in ESL methods and techniques to be used to teach and reinforce concepts in the content areas. *Prerequisites:* Curriculum 3303, 3304, 3405, and Linguistics 3308.

#### 3461 Geometry Methods (3-0)

Content, methods and materials for teaching elementary school geometry students effectively. *Prerequisite:* Mathematics 3302; Educational Curriculum 3405 — *Co-requisite:* Mathematics 3304.

#### 3462 Diagnosis and Remediation in Teaching Mathematics (3-0)

Development of skills in diagnoses and remediation in teaching mathematics. Use of commercial assessment instruments and implementation of specific instructional techniques to assist students to achieve at a desired level. Practicum with referrals to Mathematics Center required. *Prerequisite:* Educational Curriculum 3405.

#### 3463 Applications and Problem Solving (3-0)

Survey of available applications at the elementary school level with emphasis on the development of problem solving skills, particularly inductive, deductive and inquiry techniques. These techniques are especially appropriate for superior and gifted children. *Prerequisite:* Educational Curriculum 3405.

#### 3464 Elementary School Mathematics Practicum (3-0)

Field experience for the demonstration of skills and knowledge for planning, presenting, and evaluating elementary school mathematics. *Prerequisites:* Educational Curriculum 3404 and 3462.

#### 3496 Professional Laboratory Experience in the Elementary School (1.5-10)

A minimum of 120 clock hours of laboratory observation and teaching in an elementary school classroom, and of one and one-half hours per week in on-campus seminar. The deadline for student teaching applications is three months prior to the beginning of the semester in which the student wishes to student teach. Placement is not guaranteed for applications received after the deadline. *Prerequisite:* a grade point average of at least 2.0 in English 3111-12 and in Speech 3101 or 3103 or 3104, and permission for admission to student teaching:

1. For elementary education students: a grade point average of at least 2.5 in Ed.P. 3301, Ed.C. 3302, 3306, and in nine semester hours from Ed.C. 3303, 3304, 3404, and 3405, and a grade point average of at least 2.5 in at least three-fourths of the selected teaching subject; the GPA is to be calculated only on courses taken at UTEP. In the case of transfer students, the work taken elsewhere will transfer but will not count towards the GPA; these students must take at least 6 advanced semester hours of their teaching field at UTEP, earning a GPA of 2.5 or above. To be taken concurrently with Ed.C. 3497.
2. For elementary-kindergarten students: prerequisites as for elementary education students (above). To be taken concurrently with Ed.C. 3491.
3. For all-levels Art students: a grade point average of at least 2.5 in Ed.P. 3301, Ed.C. 3302, Art Ed. 3311, and in at least thirty-three additional semester hours of Art and Art Education, as specified in the University catalog. To be taken concurrently with Ed.C. 3498.
4. For all levels Speech, Hearing, and Language Disorder students: a grade point average of at least 2.5 in Ed.P. 3307 and nine (9) additional advanced hours of Education, and in at least three-fourths of the specialization area as specified in Plan II, Department of Drama and Speech section of the University Catalog, and at least 100 hours of clinical practice in the University clinic. To be taken concurrently with Ed.C. 3498.

The maximum University course load is student teaching (six semester hours), plus two other courses for a total load of not more than thirteen semester hours.

#### 3497 Professional Laboratory Experience in the Elementary School (1.5-10)

A minimum of 120 clock hours of laboratory observation and teaching experience in an elementary school classroom and one and one-half hours per week in on-campus seminar. To be taken concurrently with Ed.C. 3496 by Elementary and Elementary-Special Education students.

### SECONDARY EDUCATION

#### 2217 Multiculture in Secondary Schools (2-1)

Provides the secondary school teacher with the opportunity to obtain the awareness, knowledge and skills necessary to work effectively with adolescents who are language and/or culturally different. Practical field application will be stressed. Although emphasis is on Spanish-speaking school populations, course content is applicable to any language group.

**2310 Evaluation in the Secondary School (2-1)**

A course devoted to the development of concepts and basic skills necessary for the construction and use of both formative and summative classroom evaluation.

**3311 Introduction to the Secondary Curriculum (3-1)**

An introduction to the development of the curriculum in the secondary school.

**3312 Methodology and Technological Applications for Secondary Education (3-1)**

Consideration of instructional techniques with emphasis on team teaching, laboratory methods, programming, and test development with applications from recent research. *Prerequisites:* Ed.P. 3310 and Ed.C. 3311.

**3313 The Middle School (3-0)**

A study of the middle school in curriculum and instructional practices.

**3455 Teaching 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. Laboratory and/or field experiences may be required. May be counted as English 3455 or Curriculum 3455.

**3456 Teaching Literature (3-0)**

A study of current approaches to teaching poetry, short stories, novels, and plays, practical exercises for applying the approaches in the classroom. Laboratory and/or field experiences may be required. May be counted as English 3456 or as Curriculum 3456.

**3467 Teaching Secondary School Mathematics (3-0)**

Secondary school mathematics will be surveyed and the latest curriculum programs will be examined. Skills in analysis and discovery, inquiry and deductive teaching will be emphasized. Laboratory and/or field experiences may be required. May be counted for Graduate credit.

**3468 Teaching Secondary School Science (3-0)**

The materials and methods used in teaching natural and physical science in the secondary school will be examined. Emphasis will be placed on developing skills in the use of inquiry, process approach, and discovery in teaching science. Laboratory and/or field experiences may be required. May be counted for Graduate credit.

**3469 Teaching Secondary School Social Studies (3-1)**

A study of current theories of teaching the social sciences and their application in the secondary school classroom. Laboratory and/or field experiences may be required.

**3498 Professional Laboratory Experiences In the Secondary School (1.5-10)**

A minimum of 120 clock hours of laboratory observation and teaching experience in a secondary school classroom and of one and one-half hours per week in on-campus seminar. The deadline for student teaching applications is three months prior to the beginning of the semester in which the student wishes to student teach. Placement is not guaranteed for applications received after the deadline. *Prerequisites:* A grade point average of at least 2.0 in English 3111-12 and in Speech 3101 or 3103 or 3104, and permission for admission to student teaching.

1. For secondary education students: a grade point average of at least 2.5 in Ed.P. 3310, Ed.C. 3311, 3312, and in at least three-fourths of each teaching field; the GPA is to be calculated only on courses taken at UTEP. In the case of transfer students, the work taken elsewhere will transfer but will not count towards the GPA; these students must take at least 6 advanced semester hours of their teaching fields at UTEP, earning a GPA of 2.5 or above. To be taken concurrently with Ed.C. 3499.
2. For all-levels Art students: a grade point average of at least 2.5 in Ed.P. 3310, Ed.C. 3311, Art Ed. 3312, and in at least thirty-three additional semester hours of Art and Art Education as specified in the University catalog. To be taken concurrently with Ed.C. 3496.
3. For all-levels Speech, Hearing and Language Disorder students: *Prerequisites* as for Ed.C. 3496. To be taken concurrently with Ed.C. 3496.

The maximum University course load is student teaching (six

semester hours) plus two other courses for a total load of not more than thirteen semester hours.

**3499 Professional Laboratory Experience In the Secondary School (1.5-10)**

A minimum of 120 clock hours of laboratory observation and teaching experience in a secondary school classroom and one and one-half hours per week in on-campus seminars. To be taken concurrently with Ed.C. 3498 by Secondary Education students.

**GENERAL (Elementary or Secondary Education)****3101 Introduction to Education (3-0)**

The relationship of American public schools to social and economic changes, also problems in the development of the curriculum, instructional practices, school organization, and administration. Open to all students.

**1201 Orientation to Education (1-0)**

Designed to orient the prospective teacher education student to the profession of teaching, and to provide a basis for selection of teacher education students through the administration of selected instruments. *Prerequisite:* 24 semester hours with 2.0 G.P.A.

**2209 Audio-Visual Media for Teaching (2-1)**

The principles of selection and evaluation applied to audio-visual media for classroom use, a study of the functions of modern audio-visual materials and equipment, and an introduction to methods for preparing audio-visual materials. Laboratory experience required.

**3412 Audio Visual Methods In Teaching Equipment and Materials (3-0)**

Provide a knowledge of instructional equipment and related materials; implement the "systems approach to instruction" contributions of the audio-visual/instructional technology field to classroom instruction. May be taken for Graduate credit.

**3414 Preparation of Inexpensive Audio Visual Instructional Media (3-0)**

Experience and practice in the preparation of materials and media for visualizing instruction; and ability to adapt from mass media prepared materials; mastery of visual reproduction and duplication techniques using specialized equipment; ability to prepare recorded audio materials. Students will secure designated materials required in the course. May be taken for Graduate credit.

**3437 History and Philosophy of Education (3-0)**

A survey of educational ideas and practices in the history of western civilization.

**1450 to 6450 Educational Workshop**

(Area of study will be designated. May be repeated for credit when topic changes.)

**BILINGUAL BICULTURAL EDUCATION****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.

**3434 Teaching Spanish as a Vernacular (3-0)**

Development of skills in teaching Spanish and 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 English as a Second Language Methodology (3-0)**

Acquisition and use of second language methodology and techniques for teaching in the content areas. *Prerequisite:* LING. 3308

**KINDERGARTEN EDUCATION****3451 Curriculum of Early Childhood Education (3-1)**

A survey of learning experiences and activities suitable and effective for young children. Objectives, development, implementation, and evaluation of the curriculum for early childhood education. Analysis of success-

ful kindergarten programs and survey of nursery school curriculum as a background for kindergarten curriculum development.

#### 3452 Language Development for Young Children (3-1)

A study of communications, oral, visual and non-verbal, with particular attention to problems of this region. Techniques for helping and encouraging children to develop effective communications with others. A study of meanings experienced by young children. Specific study of the Southwest Cooperative Educational Laboratory's Oral Language Program and other new developments in communications among young children. Techniques for teaching children to listen, observe, and speak clearly and with comprehension.

#### 3491 Professional Laboratory Experience in the Kindergarten (1.5-10)

A minimum of 120 clock hours of laboratory observation in a kindergarten classroom, and one and one-half hours per week in on-campus seminar. *Prerequisites:* A grade point average of at least 2.5 in two of the following 3 courses: Ed.P. 3401, Ed.C. 3451, Ed.C. 3452, (1) concurrent registration for Ed.C. 3496, or (2) Provisional Elementary Certificate.

## READING

### For Undergraduates or Graduates

#### 3404 Developmental Reading in the Elementary School (3-1)

Developmental reading growth, curriculum, methods, and materials in the elementary school with special attention to the Spanish speaking child.

#### 3408 Reading and Study in the Content Areas (3-0)

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, instructional techniques for integrating the teaching skills with the teaching of content, and the development of flexibility of reading rate.

#### 3423 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:* Ed.C. 3404 or 3408.

#### 3424 Reading Laboratory Experience (Elementary) (3-0)

Laboratory experience for the application of concepts, media, and evaluation in reading in the elementary school. *Prerequisites:* Ed.C. 3404 or 3408 and 3441.

#### 3425 Reading Laboratory Experience (Secondary) (3-0)

Laboratory experience for the application of concepts, media, and evaluation in reading in the secondary school or community college level. *Prerequisites:* Ed.C. 3404 or 3408 and 3441.

#### 3428 Seminar in Reading (3-0)

In-depth discussions of theories, materials, and research on topics in reading of the student's choice. *Prerequisite:* Ed.C. 3404 or 3408.

#### 3440 Bilingual/Bicultural Reading (3-0)

Emphasis on the development of oral language skills requisite for reading in English and in Spanish; fundamentals for teaching reading in Spanish. Taught in English.

#### 3441 The Diagnostic Teaching of Reading (3-0)

A study of standardized and informal materials and techniques for diagnosing the 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:* Ed.C. 3404 or 3408; may not be taken for credit by those who have taken Ed.C. 3541.

#### 3449 Analysis and Evaluation of Reading Materials (3-0)

An examination of classroom reading materials representative of various facets and philosophies in the teaching of reading. A major emphasis will be focused upon the development of criteria for the selection of materials appropriate for specific individuals and groups of children. *Prerequisite:* Ed.C. 3404 or 3408.

## GRADUATE DEGREE PROGRAMS —

Students who are engaged in graduate studies in Curriculum and Instruction may select one of two degree programs:

### Master of Arts in Education

*Prerequisites:* At least 12 semester hours of 0300 and/or 0400 level education courses and admission to the thesis program by the departmental graduate studies committee.

*Program:* Thirty semester hours, including at least 21 semester hours at the 0500 level. All 0300 and/or 0400 level work proposed for inclusion in this graduate degree must be recommended for approval by the departmental Graduate Advisor. Areas of the program are as specified below:

Major — 12 to 18 semester hours of approved Curriculum and Instruction course work.

Minor — 6 to 12 semester hours in an approved supporting area or areas.

Thesis — Six semester hours: Ed.C. 3598 and 3599.

### Master of Education

*Prerequisites:* At least 12 semester hours of 0300 and/or 0400 level education courses and admission to the M.Ed. program by the departmental graduate studies committee.

*Program:* Thirty-six semester hours, including at least 27 semester hours at the 0500 level. All 0300 and/or 0400 level work proposed for inclusion in this graduate degree must be recommended for approval by the departmental Graduate Advisor. Students who are working toward the Master of Education degree in Curriculum and Instruction may select from one of the five options listed below:

#### ELEMENTARY TEACHING OPTION

*Specialization Area* — Twelve semester hours of advanced or graduate credit in one of the following subjects: Art, Biological Sciences, Chemistry, Economics, English, French, Geological Sciences, Health and Physical Education, History, Mathematics, Music, Political Science, Physics, Reading, Spanish, Speech, and Sociology. At least 18 semester hours of undergraduate credit are required in the selected elementary subject.

*Professional Core* — Nine semester hours: Ed.C. 3501, 3502 and 3513.

*Resource Area* — Six semester hours approved by the departmental Graduate Advisor.

*Electives* — Nine semester hours including at least 6 semester hours in Curriculum and Instruction.

#### SECONDARY TEACHING OPTION

*Specialization* — Twelve semester hours of advanced or graduate credit in one of the following subjects: Art, Biological Sciences, Business, Chemistry, Drama, English, French, Geological Sciences, Health and Physical Education, History, Mathematics, Music, Political Science, Physics, Spanish, Speech and Sociology. At least 24 semester hours of undergraduate credit are required in the selected secondary subject.

*Professional Core* — Nine semester hours: Ed.C. 3501, 3502 and 3511.

*Resource Area* — Six semester hours approved by the departmental Graduate Advisor.

*Electives* — Nine semester hours including at least 6 semester hours in Curriculum and Instruction.

**CLASSROOM TEACHING OPTION**

Specialization — Nine to twelve semester hours of advanced or graduate credit in an approved subject area.

Professional Core — Twelve semester hours: Ed.C. 3503, 3520, 3521 and 3535.

Applied Teaching — Six semester hours of Ed.C. 3548 which is repeated for credit twice.

Electives — Six to nine semester hours.

**CURRICULUM DEVELOPMENT OPTION**

Specialization Area — Twelve semester hours in one of the specialization areas in Curriculum and Instruction (e.g. Curriculum Development, Reading, Bilingual-Bicultural Education, etc.)

Professional Core — Twelve semester hours; Ed.C. 3501, 3502, 3540 and either Ed.C. 3511 or 3513.

Resource Area — Six semester hours from courses approved for graduate credit outside the Department of Curriculum and Instruction.

Electives — Six semester hours including three semester hours in Curriculum and Instruction.

**INDIVIDUALIZED OPTION**

Students whose needs are not met by any of the options listed above may plan special programs for submission to the departmental graduate studies committee. Programs recommended by this committee will be forwarded to the Graduate Dean for approval or rejection.

**CERTIFICATION PROGRAMS** — The selection of appropriate courses for the specialization area and electives section of the Master of Education will qualify the student for a Texas Professional Teacher Certificate. However, in some cases the student may be required to take additional courses beyond the degree program to complete a certification program. Applicants for the Professional Certification must hold the appropriate Provisional Certificate, have three years of teaching experience, and complete a masters degree. The following certification programs have been approved by the Texas Education Agency and the State Board of Education for the Professional Certificate:

**ELEMENTARY TEACHING**

Approved Specialization Areas — Twelve semester hours of 0500 level courses from one of the following elementary teaching subjects: Biological Sciences, Chemistry, English, French, Geological Sciences, Health and Physical Education, History, Music, Political Science, Physics, Reading, Sociology, Spanish, Speech, and Speech and Hearing Therapy. At least 18 semester hours of undergraduate credit in the selected elementary teaching subject are required as a prerequisite.

**SECONDARY TEACHING**

Approved Specialization Areas — Twelve semester hours of 0500 level courses from one of the following secondary teaching subjects: Biological Sciences, Business, Chemistry, English, French, Health and Physical Education, History, Music, Physics, Spanish, Speech, Speech and Hearing Therapy. At least 24 semester hours of undergraduate credit in the selected secondary teaching field are required as a prerequisite.

**READING SPECIALIST (All Levels)**

Approved Specialization Area — Twelve hours of Reading: Ed.C. 3541 or both 3506 and 3534; 3515 or 3424 or 3425 and three to six semester hours from Ed.C. 3506, 3515, 3527, 3534, 3541, 3542, 3550, 3551.

Additional Required Courses — Sociology 3575, Ling. 3395 or 3472 or an 0500 level linguistics course, Ed.C. 3513 and Ed.P. 3514 for those with only provisional secondary certification or Ed.C. 3511 and Ed.P. 3517 for those with only provisional elementary certification.

**Graduate Course Offerings**

General Prerequisite: 12 semester hours of 0300 and/or 0400 level education courses or consent of the instructor.

**3501 Research Methods I (3-0)**

This is the first of a sequence of two courses designed to develop and interrelate the concepts of research and statistics. Attention will be given to the reading and critiquing of the research methodology and the statistics of research articles. Degree credit will not be granted for 3501 if degree credit is granted for 3503.

**3502 Research Methods II (3-0)**

A continuation of Ed.C. 3501. Degree credit will not be granted for 3502 if degree credit is granted for 3503. *Prerequisite:* Ed.C. 3501.

**3503 Research in Classroom Teaching (3-0)**

A study of research as it relates to significant aspects of classroom teaching with the emphasis on locating, reading, interpreting, and evaluating research as reported in the literature. Degree credit will not be granted for 3503 if degree credit is granted for 3501-02. Degree credit will not be granted for 3501-02 if degree credit is granted to 3503.

**3508 Remedial Reading (3-0)**

Examination and appraisal of significant researchers in the field of remedial reading. Attention given to the analysis and diagnosis of individual cases of reading, retardation, and to corrective and remedial procedures. *Prerequisite:* Ed.C. 3404 or 3408.

**3508 Instructional Problems (Elementary) — Seminar (3-0)**

Study of teaching problems arising in the classroom. Students will choose their own problems and those with allied interests will be grouped together to facilitate individual research. The instructor will guide this research. (May be repeated for credit when topic varies.)

**3509 Instructional Problems (Secondary) — Seminar (3-0)**

Same as Ed.C. 3508, except the problems are at the secondary level. (May be repeated for credit when topic varies.)

**3511 The Curriculum in the Secondary School (3-0)**

A study of the organization of the curriculum in the secondary school.

**3512 Curriculum Problems in Science Education — Seminar (3-0)**

The student is permitted to devote his attention exclusively to a pertinent curriculum problem in science education either in the elementary or secondary school field.

**3513 The Curriculum in the Elementary School (3-0)**

A study of the organization of the curriculum in the elementary school.

**1514-6514 Current Topics in Science Education**

A course designed to provide in-service teachers the opportunity to develop the competencies necessary to effectively deal with curricular changes in science; includes science concepts of a specific program, teaching strategies, structure of the specified program, and the demonstrated ability to integrate content and teaching strategies. (May be repeated for credit when topic varies.)

**3515 Clinical Reading Laboratory Experience (3-0)**

Actual laboratory experience for application of concepts, media and evaluation, to meet reading disadvantages in the elementary grades. *Prerequisite:* Ed.C. 3441 or 3541 or 3534. (May be repeated for credit when topic varies.)

**3516 Photography for Teachers and Media Specialists (3-0)**

Special skills and techniques in the development of black/white photographic stories, color transparencies, slide series and single concept films.

**3517 Advanced Techniques of Graphic Media Production (3-0)**

The production of instructional media using advanced processes and techniques.

**1518-3518 Current Topics in Mathematics Education (1-0, 2-0, 3-0)**

A course designed to provide in-service teachers opportunity to develop competencies in specific teaching strategies and to increase knowledge of mathematics concepts in an integrated program. (May be repeated for up to six hours credit when topic varies.)

**3520 Curriculum and Instructional Design Elementary/Secondary School (3-0)**

A study of the principles of design and the development of plans and procedures for instruction.

**3521 Instructional Strategies and Classroom Management (3-0)**

A study of decision-making methodologies and human interactions as they relate to classroom management.

**3523 Educational Trends — Seminar (3-0)**

A critical consideration of selected trends in education.

**3527 Psychology of Reading (3-0)**

Study of the reading process in such areas as language development, the psychology of learning, sensory, perceptual, and neurological factors, special problems of the culturally different child, emphasis on the study and evaluation of research literature and intensive study in individual topics of interest. *Prerequisite:* Ed.C. 3404 or 3408.

**3531 Bilingual/Bicultural Curriculum Design and Development (3-0)**

Identification of principles, problems and issues affecting bilingual curriculum. Examination of rationales and philosophies of various models of bilingual education programs. *Prerequisites:* Ed.C. 3302 and 3435.

**3534 Clinical Diagnosis of Reading Difficulties (3-0)**

Comprehensive study and clinical practice in the diagnosis of specific, limiting, and complex cases of reading disability. Experiences in administering and interpreting batteries of diagnostic tests and in the analysis and synthesis of findings for case studies. *Prerequisites:* Ed.C. 3404 or 3408.

**3535 Construction and Use of Classroom Evaluation Instruments (3-0)**

A study leading to skill in constructing and using norm-referenced and criterion-referenced achievement measures for summative and formative evaluation.

**3537 Independent Graduate Studies**

(Area of study will be approved by professor sponsoring the student's work.)

**3540 Philosophies of Education (3-0)**

An in-depth study of major philosophies of education and their impact on education in the United States.

**3541 The Diagnostic Teaching of Reading (3-0)**

A study of standardized and informal materials and techniques for diagnosing the reading strengths and weaknesses of individuals and groups, techniques and methods of individualizing instruction and grouping according to student needs and interests. *Prerequisite:* Ed.C. 3404 or 3408; may not be taken for credit for those who have taken Ed.C. 3441.

**3542 Problems in Reading — Seminar (3-0)**

A course emphasizing educational research in reading. The student is allowed to make a choice of the field in reading in which to carry on educational research. *Prerequisites:* Ed.C. 3404 or 3408, and Ed.P. 3500, Ed.C. 3501, or consent of the instructor. (May be repeated for credit when topic varies.)

**3544 Trends in Early Childhood Education (3-0)**

A survey of research related to philosophies, objectives, and practices in pre-school education, including analysis through comparison and contrast of pre-school programs plus implications for designing such programs based on research and evaluation. *Prerequisites:* Six semester hours of 3400 level early childhood education courses and permission of instructor.

**3545 Seminar in Early Childhood Curriculum**

A curriculum development program for the early childhood teacher which includes program design, activity planning, examination and construction

of materials, and teaching and evaluation techniques. *Prerequisite:* Texas Kindergarten endorsement or equivalent as approved by instructor.

**3546 Teaching Reading in Spanish (3-0)**

Emphasis on fundamental principles for teaching reading in Spanish to Spanish-dominant children. Examination of classroom reading materials representative of various bilingual reading programs and development of criteria for the selection of materials appropriate for various types of bilingual reading classes. *Prerequisites:* Ed.C. 3404 and 3434.

**3548 Practicum in Instruction in Elementary and Secondary Schools (1.5-10)**

Designed to be concurrent with the first year of public school level teaching. Includes observation by the university instructor of the classroom teaching of the student and seminars designed to relate the classroom instructional situation to the corresponding educational theory. May be repeated once for credit. *Prerequisites:* A grade point average of at least 2.5 in each teaching field and in all education courses, and permission.

**3550 Graduate Workshop in Education (3-0)**

Area of study will be designated (May be repeated for credit when topic varies.)

**3551 Seminar in Reading (3-0)**

An in-depth exploration of ways of developing higher level cognitive, affective, and psychomotor and psycholinguistic abilities of students through the use of printed materials and other media. Individual and/or group creative projects and research findings will be shared. *Prerequisite:* Ed.C. 3404 or 3408.

**3552 Oral Language Assessment (3-0)**

Analysis of oral language tests and procedures and their application to the bilingual classroom. *Prerequisites:* Six hours from the following: Linguistics 3471 (Language acquisition); Ling. 3471 (Bilingualism); Linguistics 3472.

**3553 Teaching Content in Spanish (3-0)**

Analysis and evaluation of Spanish curriculum materials in the content areas. Emphasis on the development of methods for teaching content in Spanish using specialized language at various levels. *Prerequisite:* Ed.C. 3434, or Spanish 3402, or Language Proficiency.

**3598 Thesis****3599 Thesis**

## EDUCATIONAL ADMINISTRATION AND SUPERVISION

712 Education Building  
(915) 747-5355/5382

CHAIRMAN: Robert R. Dunwell

PROFESSOR EMERITUS: William Gerald Barber

ASSOCIATE PROFESSORS: Brooks, Kelly

### Degree Programs

Requirements for the Master of Education Degree — students who are working toward the Master of Education Degree in Educational Administration and Supervision may select from three options.

#### I. Educational Administration

##### 1. Education courses:

- a. Ed.A. 3502, 3524, 3527, 3530, 3535, 3536; Ed.C. 3511, 3513; Ed.P. 3542.
- b. Three hours from: Ed.A. 3526, 3537; Ed.P. 3500.

##### 2. Other courses:

- a. Soc. 3575.
- b. Three hours from Soc. 3565, Pol. Sc. 3550, Econ 3335.

#### II. Elementary Supervision:

1. Education courses: Ed.A. 3502, 3524, 3526, 3527, 3530, 3535, 3536; Ed.C. 3508, 3513; Ed.P. 3500.

2. Six hours credit from one of the following minors: Art, Biological Sciences, Business Administration, Chemistry, Curriculum and Instruction, Drama, Educational Psychology and Guidance, Speech, Economics, English, French, Geology, Political Science, Health and Physical Education, History, Mathematics, Music, Philosophy, Physics, Psychology, Sociology, Spanish. Courses must be acceptable for graduate credit.

III. Secondary Supervision:

1. Education Courses: Ed.A. 3502, 3524, 3526, 3527, 3530, 3535, 3536; Ed.C. 3509, 3511; Ed.P. 3500.
2. Six hours credit from one of the minors listed above under Elementary Supervision.

At least 12 semester hours of advanced Education courses are required before pursuing a Master's degree in Education.

**Certification Programs**

I. Professional Mid-Management Administrator Certification:

1. Prerequisites:
  - a. Master's Degree
  - b. Provisional Elementary, Secondary, or All-Levels Certification
  - c. 2 years teaching experience
  - d. Undergraduate GPA (overall) not less than 2.5
2. Education courses: Ed.A. 3502, 3524, 3526, 3527, 3530, 3534, 3535, 3536, 3537; Ed.C. 3511, 3513; Ed.P. 3500, 3542
3. Other courses:
  - a. Soc. 3575.
  - b. 3 Hours from:  
 Bus. 3312, 3315, 3450; Jour. 3352; Anthro. 3405; Econ. 3335; Soc. 3301, 3304, 3349, 3565; Psych. 3306; Pol. Sci. 3550.

II. Professional School Superintendent Certification:

1. Prerequisites:
  - a. Master's Degree
  - b. Provisional Elementary, Secondary, or All-Levels Certification
  - c. 2 years teaching experience
  - d. Undergraduate GPA (overall) not less than 2.5
2. Education courses: Ed.A. 3502, 3524, 3526, 3527, 3529, 3530, 3533, 3534, 3535, 3536, 3537, 3539, 3540; Ed.C. 3511, 3513; Ed.P. 3500, 3519, 3542.
3. Other courses:
  - a. Soc. 3575.
  - b. 6 Hours from:  
 Anthro. 3405; Bus. 3312, 3315, 3450; Econ. 3335; Jour. 3352; Soc. 3301, 3304, 3349, 3565; Psych. 3306; Pol. Sci. 3550.

III. Professional Elementary School Supervision Certification:

1. Prerequisites:
  - a. Provisional Elementary or All-Levels Certification
  - b. Undergraduate GPA (overall) not less than 2.5
  - c. Three years teaching experience at Elementary Level.

2. Education courses:  
 Ed.A. 3502, 3524, 3526, 3527, 3530, 3535, 3536, 3538, 3539; Ed.C. 3508, 3513; Ed.P. 3500

IV. Professional Secondary School Supervision Certification:

1. Prerequisites:
  - a. Provisional Secondary or All-Levels Certification
  - b. Undergraduate GPA (overall) not less than 2.5
  - c. 3 years teaching experience at Secondary Level.
2. Education Courses:  
 Ed.A. 3502, 3524, 3526, 3527, 3530, 3535, 3536, 3538, 3539; Ed.C. 3509, 3511; Ed.P. 3500

For Graduate Students Only

*Prerequisite:* Twelve semester hours of advanced courses in Education and a bachelor's degree.

**3502 Problems in Educational Administration and Supervision**

A course in research in Educational Administration and Supervision. The student will select an area to research independently and write a term paper.

**3524 Public School Supervision (3-0)**

The study of leadership for instructional improvement, the roles of supervisors, consultants, and other administrators. The study of group dynamics, the change process, observational techniques, interaction analysis, teacher-supervisor interviews, evaluation.

**3526 Public School Finance (3-0)**

The study of public school revenue, budget preparation and administration, accounting procedures, record keeping and school bonds.

**3527 Administration of Special, Career, Compensatory, Reading and Vocational Education Programs (2-1)**

The study of special programs from an administrative or supervisory viewpoint. Field experience in one program required.

**3529 The School Plant (3-0)**

The study of all facets of the school plant; budgeting, planning and maintenance.

**3530 Public School Law (3-0)**

A study of the constitutional provisions, legislation, court decisions, and regulations governing the public schools with special reference to Texas.

**3533 Field Experience and Internship in Educational Administration (1-4)**

On-the-job practicum in public school administration for superintendency trainees. *Prerequisite:* Master's degree and enrollment in the superintendency certification program.

**3534 Field Experience and Internship in Educational Administration (1-4)**

On-the-job practicum in public school administration for mid-management trainees. *Prerequisite:* Master's degree and enrollment in the mid-management certification program.

**3535 Fundamentals of Public School Administration (3-0)**

Basic administrative concepts and processes; organization of public school administration; roles of the superintendent and other central office personnel; relationship of the local school district to the Texas Education Agency, federal educational agencies and other educational institutions.

**3536 Organization and Administration of Schools (3-0)**

Problems confronting the elementary and secondary school principal will be studied: teacher schedules, classroom schedules, staff meetings, organization of non-teaching personnel, supervision, curriculum development, student welfare and other related areas.

**3537 Community Education (3-0)**

The study of community education as an emerging movement in public education. The administrator's role in the conceptualizing, developing and implementing of community education.



**3538 Field Experience In Elementary or Secondary Supervision**

On-the-job practicum experience in public school supervision at the elementary or secondary level. *Prerequisite:* Completion of all other required courses in the professional elementary or secondary school supervision certification plan.

**3539 Trends in Educational Administration and Supervision (3-0)**

An in-depth examination of current issues impacting the management of educational institutions. An analysis of such issues as multicultural education, collective bargaining, formulation of educational policy, equity of educational opportunity, management by objectives, regionalism and cooperatives in education, the rural-urban dichotomy and politics in education.

**3540 Central Office Administration (3-0)**

The study of critical aspects of central office administration. For example: problem areas involving personnel, programs, budget, planning, evaluation, school board relationships, state and federal influences, public relations and the overall administration of a school district.

**3550 Graduate Workshop in Educational Administration and Supervision (3-0)**

(Area of study will be designated.)

## EDUCATIONAL PSYCHOLOGY AND GUIDANCE

701D Education Building  
(915) 747-5300

CHAIRMAN: Everett E. Davis

PROFESSORS: E. Davis, Day, L. Natalicio, C. Walker

ASSOCIATE PROFESSORS: B. Brooks, J. R. Walker

ASSISTANT PROFESSORS: Ainsa, Duran, Hamilton, Landrum

For Undergraduate Credit Only

*General Prerequisite:* Junior standing and a degree plan on file for all 3300 and 3400 level courses.

**3201 Introduction to Educational Psychology (3-0)**

A study of the learning process with attention given to growth and development, conditions of effective learning, adjustment, and individual differences and evaluation. Open to all students.

**3220 Introduction to Sociocultural Issues in Special Education (3-1)**

The study of special education, its professional organizations, and social-cultural issues that influence change in the field. Initial field work required.

**3301 Psychology of the Elementary School Child (3-0)**

A study of the phases of the development and behavior of the child in the elementary school. Also provision for observation of the elementary school child as an individual and as a member of a group. *Recommended prerequisite:* Ed.P. 3201 or Psychology 3101.

**3308 Psychological Foundations of Elementary Education (3-0)**

Introductory course in applications of psychological principles and knowledge to elementary education practices.

**3310 Psychology of the Secondary School Student (3-1)**

A study of the phases of development and behavior of the adolescent. Also, provision for observation of the adolescent as an individual and as a member of a group. *Recommended prerequisite:* Ed.P. 3201 or Psychology 3101.

**3314 Psychological Foundations of Secondary Education (3-0)**

Introductory course in applications of psychological principles and knowledge to secondary educational practices. (This course may not be counted for credit in addition to Ed.P. 3201 and/or 3308 and/or 3420.)

**3321 The Education of Exceptional Children (3-0)**

Consideration given to the philosophy, problems, treatment and methods of providing appropriate education and training for exceptional children.

**3323 Characteristics of Severely Impaired Children (3-1)**

Considerations of socio-emotional-behavioral and developmental char-

acteristics of severely impaired children and their impact on society. Field experience required.

**2327 Working With Parents of Exceptional Children (2-1)**

Relevant approaches and techniques of working with parents of exceptional children will be emphasized. Field experience with parents of exceptional children required. *Prerequisites:* Ed.P. 3220 and 3321.

**2331 Diagnostic Procedures and Management Techniques Used With Handicapped Children (2-1)**

Study and application of diagnostic techniques, diagnostic instruments, and behavioral management techniques in a field setting with handicapped children.

**3402 Bilingual/Bicultural Factors In Learning (3-0)**

Emphasis will be given to the study of factors influencing the learning of bilingual and/or ethnic minority children. Included will be such factors as: cultural values, parental level of schooling, visibility, socioeconomic status, language spoken in the home, school curriculum biases, teacher attitude, self-concept of learner, physiological needs, and need for acceptance.

**3405 Methods and Materials for Education of Visually Impaired (3-0)**

Examination of special equipment and materials used in teaching the visually handicapped. Includes programming and adopting materials for the visually handicapped as well as instruction about federally available equipment.

**3406 Visually Handicapped Youth-Psychological, Social and Educational Implications (3-0)**

Examination of theory, characteristics, assessment, and educational implications for teaching visually handicapped children and youth. Includes personal history developmental needs, and perceptual differences.

**3407 Communication Skills for Visually Impaired Students Including Blind/Multi-Handicapped (3-0)**

Communication techniques for visually impaired includes Braille, use of slate and stylus, numerical codes, and manual communication for the multi-handicapped blind student. In the area served by the University of Texas at El Paso it is necessary to train teachers in the use of Spanish Braille, since our graduates teach a significant proportion of Spanish-language dominant and Spanish monolingual students.

**3408 Seminar in Education of Visually Impaired (3-0)**

This course will fulfill the practicum required of all applicants for the Deficient Vision Certificate. If the applicant has chosen to practice-teach in the area of the visually handicapped, this course will offer further practicum in orientation and mobility, a specific special area needed for teaching the visually handicapped.

**3410 The Gifted and Talented Student (3-0)**

The study of the gifted and talented students with emphasis on identification, programs, psychological characteristics and curriculum differentiation.

**3425 Special Education for the Classroom Teacher (3-0)**

The characteristics of exceptional children will be studied with special emphasis on mildly handicapped children who can receive their education in the regular classroom under the existing Plan A in Texas. Classroom management techniques to work with behavioral and educational problems of these children will also be discussed.

**3428 Introduction to Counseling (3-0)**

An overview of counseling history, theory, research and practice. Emphasis is placed on the articulation of the theoretical and research underpinnings of counseling in such cases as personality development, learning, social influence and counseling. *Prerequisite:* 12 advanced semester hours in Education or Social/Behavioral Sciences.

**3433 Curriculum Approaches and Materials in Educating Handicapped Children**

Analysis of school curriculum and curriculum materials in field settings will be required. *Prerequisite:* Ed.P. 2331 or concurrent with.

**3435 Planning and Developing Individualized Curriculum Materials for Handicapped Learners**

Planning and developing curriculum materials in teaching handicapped children. *Prerequisites:* Ed.P. 2331 and 3433.



**3437 Specific Methods and Materials for Educating Severely Handicapped Children**

Curriculum approaches, materials and specific techniques in working with severely impaired children will be analyzed and developed. Extensive field-work with severely impaired children and/or their parents required. *Prerequisite:* Ed.P. 2331, 3433 and 3435 or permission of department chairman.

**3440 Occupational Aspects of the Handicapped**

Career education curriculum for the handicapped and employer attitudes toward hiring of the handicapped will be researched and discussed. Field experiences relevant to the occupational aspects of the handicapped required. *Prerequisite:* Ed.P. 3433 and 3435.

**1450-6450 Workshop In Educational Psychology and Guidance (3-0)**

(Area of study will be designated.) May be repeated for credit when topic changes.

**For Undergraduates and Graduates**

*Prerequisite* for courses listed below: Six semester hours of Education or permission of department chairman

**3400 Elementary Educational Statistics (3-0)**

A study of the basic statistical concepts as applied to research in education. Topics include descriptive and inferential statistics. Consideration is given to measures of central tendencies, variables, correlations, elementary statistical inference through two-way analysis of variance.

**3401 Psychology of the Kindergarten Child (3-0)**

A study of child development through the pre-school years. Survey of characteristics of four and five-year-old children and of individual differences among them. Observation and research concerning young children at play. Research concerning processes of learning, interaction, natural and effective, for young children, and the development of the child's self-concept.

**3420 Introduction to Guidance (3-0)**

A study of the educational, social, and psychological foundations of guidance in schools, colleges, and industry. The historical development of the guidance movement, the philosophy and scope of guidance and the role of the teacher and counselor in their relationships to the total program.

**3421 Psychology of Mental Retardation (3-0)**

Consideration of basic psychological problems and research pertaining to mentally retarded children with emphasis on the study of the social, emotional, physical, and learning characteristics of mentally retarded children.

**3422 Curriculum, Materials, and Methods of Teaching the Mentally Retarded (3-0)**

Basic organization of programs for educating the mentally retarded at the primary, intermediate, and secondary setting. Curriculum development, principles of teaching, and instructional materials, methods, and records pertaining to the education of the mentally retarded.

**3429 Observation, Teaching, and Field Work with Mentally Retarded — Seminar (1-2)**

*Prerequisite:* Ed.P. 3409, 3421, and 3422 or permission of the chairman of the department.

**GRADUATE PROGRAMS AND PLANS**

At the graduate level both the M.Ed. and M.A. degrees are offered. The Department of Educational Psychology and Guidance offers the following graduate programs and plans.

**DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF EDUCATION DEGREE**

Students who are working toward the Master of Education Degree in Guidance and Counseling may select one of two plans.

**PROGRAM REQUIREMENTS**

**COUNSELING, PLAN I — SCHOOL COUNSELING EMPHASIS**

M.Ed., 36 semester hours

This plan is intended primarily for students who have con-

centrated their previous academic work in the area of professional education and plan to secure a Texas professional certificate in counseling. To be recommended for the counselor's professional certificate, the student must meet the following three requirements: (1) complete the Counseling, Plan I, Program, (2) have a Texas provisional or professional teaching certificate, and (3) have three years of successful teaching experience.

**Admission Requirements:**

**Completion of**

- Ed.P. 3400 — Elementary Educational Statistics
- Ed.P. 3402 — Bilingual/Bicultural Factors in Learning
- Ed.P. 3420 — Introduction to Guidance
- Ed.P. 3425 — Special Education for the Classroom Teacher

(The above courses must be completed with a minimum G.P.A. of 3.0)

Completion of admission procedures as outlined in the Graduate School section of this catalog.

**Program Requirements:**

- Ed.P. 3539 — Group Counseling: Theory and Process
- Ed.P. 3535 — Principles of Psychological Testing
- Ed.P. 3519 — Organization and Administration of Guidance Services
- Ed.P. 3520 — Socio-Economic Information in Guidance — Seminar
- Ed.P. 3502 — Research Methods in Educational Psychology
- \*Ed.P. 3518 — Techniques of the Psychological Interview
- \*Ed.P. 3522 — Supervised Practicum in Counseling or Educational Psychology
- Ed.P. 3523 — Advanced Practicum

Plus six semester hours of elective graduate work in Educational Psychology (3500 level), and six semester hours credit for a minor in a related field as approved by the graduate advisor

**COUNSELING, PLAN II — AGENCY COUNSELING EMPHASIS**

M.Ed., 36 semester hours

This plan is intended primarily for students who have concentrated their previous academic work in one of the behavioral sciences or education, and do not intend to secure a Texas professional certificate in counseling.

**Admission Requirements:**

Completion of Ed.P. 3400 (Elementary Educational Statistics) and nine semester hours of upper division work in the behavioral sciences or education with a minimum grade point average of 3.0

Completion of admission procedures as outlined in the Graduate School section of this catalog.

**Program Requirements:**

- Ed.P. 3539 — Group Counseling: Theory and Process
- Ed.P. 3541 — Theories of Counseling
- \*Ed.P. 3518 — Techniques of the Psychological Interview
- \*Ed.P. 3522 — Supervised Practicum in Counseling or Educational Psychology
- Ed.P. 3523 — Advanced Practicum
- Ed.P. 3502 — Research Methods in Educational Psychology
- \*\*Ed.P. 6580 — Internship

\*3518-3522 must be taken concurrently.

\*\*The student should plan to devote one full-time semester to the completion of the internship, which is the final course in the M.Ed. sequence.

Plus six semester hours of elective graduate work in Educational Psychology (3500 level), and six semester hours credit

for a minor in a related field as approved by the graduate advisor

#### EDUCATIONAL DIAGNOSTICIAN PROGRAM

M.Ed., 36 semester hours

This program is intended primarily for students who plan to be educational diagnosticians and meet the requirements for a Texas educational diagnostician professional certificate. To be recommended for the educational diagnostician professional certificate the student must meet the following three requirements:

(1) complete the Educational Diagnostician Program, (2) have a Texas provisional or professional teaching certificate, and (3) have three years of successful teaching experience.

##### Admission Requirements:

Completion of 12 semester hours of upper division work in special education, three of which must be a survey course or its equivalent. The courses must be completed with a minimum G.P.A. of 3.0

Completion of admissions procedures as outlined in the Graduate School section of this catalog.

##### Program Requirements:

- Ed.P. 3500 — Introduction to Statistics
- Ed.P. 3535 — Principles of Psychological Testing
- Ed.P. 3521 — Independent Study of Special Education Seminar
- Ed.P. 3545 — Characteristics of Language/Learning Disabilities
- Ed.P. 3536 — Individual Mental Testing
- Ed.P. 3502 — Research Methods in Educational Psychology
- Ed.P. 3540 — Seminar — Theories of Learning
- Ed.P. 3524 — Differential Diagnosis
- Ed.P. 6580 — Internship
- Ed.C. 3531 — Bilingual/Bicultural Curriculum Design and Development
- Ed.C. 3534 — Clinical Diagnosis of Reading Difficulties

#### SPECIAL PROGRAMS, M.Ed. (36 semester hours)

Students whose professional needs are not met by the above M.Ed. programs may plan *special programs* provided the general requirements for the degree of Master of Education are met.

**THESIS PROGRAMS** (Note: Students in any of the previously-described programs may opt for the M.A. Degree)

**Thesis, Plan I (no minor), M.A. (30 semester hours)**

The general requirements for Plan I are:

1. A thesis (six semester hours) plus 24 semester hours of course work. There must be a minimum of 21 hours, including the thesis, of graduate courses (those numbered 3500 and above).
2. A major consisting of the thesis plus 24 hours of supporting thesis course work in Ed.P.

**Thesis, Plan II (a minor), M.A. (30 semester hours)**

The general requirements for Plan II are:

1. A thesis (six semester hours) plus 24 semester hours of course work. There must be a minimum of 21 hours, including the thesis, of graduate courses (those numbered 3500 and above).
2. A major consisting of the thesis plus 12 to 18 hours of supporting thesis course work in Ed.P.
3. A minor of from six to twelve hours in a related discipline. Transfer students must complete at least three hours of the minor in residence.

##### Thesis Requirements in Thesis Plans I and II

To obtain the six semester hours credit for the thesis, the student must register for Ed.P. 3598 when he begins work on

the thesis. Thereafter he must register for Ed.P. 3599 each semester or term during which he is working on his thesis. If a student has not completed his thesis work at the end of two years after the subject has been approved and recorded, the thesis supervisor may require him to choose another subject. Credit in Ed.P. 3598-99 will not be granted until the thesis is completed and approved by a committee of not less than three. Two bound copies of the thesis must be presented to the Dean of the Graduate School not less than ten days before commencement day in the long session and not less than five days before the end of the summer session.

##### For Graduate Students Only

**Prerequisite:** Twelve semester hours of advanced courses in Education or the equivalent and a bachelor's degree.

#### 3500 Introduction to Statistics (3-0)

Study of fundamental statistical concepts, to include probability distributions, sampling distribution and certain non-parametric procedures. Introduction of experimental design and applied statistical research procedures.

#### 3502 Research Methods in Educational Psychology (3-0)

A course emphasizing educational research at all levels. The student identifies a problem, formulates hypotheses, selects procedures, develops bibliographic references and prepares a research prospectus. *Prerequisite:* Ed.P. 3400.

#### 3505 The Construction and Use of Achievement Examinations — Seminar (3-0)

Covers the theory of testing and provides practical experience in both critical analysis and construction of tests for classroom use. The student will be allowed to devote his attention exclusively either in the elementary school level or to the secondary.

#### 3508 Workshop in Guidance and Counseling — Seminar (3-0)

Study of current issues and problems in guidance and counseling. Students will choose their problems and those with allied interests will be grouped together to facilitate individual research. Instructor will supervise this research.

#### 3514 Guidance in The Elementary School (3-0)

The purpose and scope for guidance at the elementary level with emphasis placed upon the function of guidance in relation to children's needs and development, the work of guidance personnel, and teachers roles in relation to prevention of problems, techniques and skills of diagnosis and counseling which can be used by counselors, experienced teachers and beginning elementary teachers.

#### 3516 The Psychology of Individual Differences (3-0)

The study of individual differences in intelligence, school achievement, vocational aptitudes, personality, interests and attitudes; study of varieties of group differences; and study of methods used in studying human differences.

#### 3517 Psychology of Personality Development (3-0)

Study of mental hygiene, and the nature and development of personality, and personality theory and assessment.

#### 3518 Techniques of the Psychological Interview

A study of the basic principles of interviewing. Emphasis on types of interviews, content and processes in interviewing and counseling, interviewing leads, practice in various techniques of interviewing and counseling and specific types of vocational, educational and personal interview problems. *Prerequisite:* 12 graduate semester hours, including Ed.P. 3539; must be taken concurrently with Ed.P. 3522.

#### 3519 Organization and Administration of Guidance Services (3-0)

A study of problems of supervision, organization and administration of guidance services. Problems of staffing, finances, effective interpersonal relationships, community participation, in-service education, and evaluation of the guidance program.

#### 3520 Socio-Economic Information in Guidance — Seminar (3-0)

Educational, occupational, and social information and its use in counseling and guidance.

#### 3521 Independent Study of Special Education — Seminar (3-0)

This course offers opportunities for study in any one of the following spe-

cial education areas: orthopedic handicaps, visual handicaps, auditory handicaps, giftedness, mental retardation.

**3522 Supervised Practice in Counseling — Seminar**

Actual practice under supervision in applying the principles, tools and techniques used in either the counseling program or the school psychology program. Student will work with clients — referrals for counseling or students and parents with school difficulties. Supervision and instruction will be carried out in a clinical setting under a qualified faculty member. This course must be taken concurrently with Ed.P. 3518.

**3523 Advanced Practicum in Counseling (2-3)**

Advanced supervised experience in the application of counseling principles and techniques to work with clients. Emphasis will be placed on the articulation of the conceptual context in which counseling takes place. *Prerequisites:* Ed.P. 3522 and 3518.

**3524 Differential Diagnosis (3-0)**

Diagnostic interpretation of various standardized tests and other procedures commonly used in a school setting. Emphasis will be placed on applying data to correct learning problems, disabilities, and the development of potentials. *Prerequisites:* Ed.P. 3500, 3535, 3536.

**3535 Principles of Psychological Testing (3-0)**

Study of the principles of psychological testing purposes, methods and procedures. Study, evaluation and use of educational and psychological tests in the evaluation and guidance of students.

**1536 to 6536 Individual Mental Testing for General and Special Abilities (3-0)**

Administration, observation, demonstration and critical evaluation of testing procedures. Preparation of reports, both professional and individual, will be stressed. Basic tests will be Stanford-Binet Intelligence Scale and two of the Wechsler Tests (WAIS, WISC-R, WPPSI). If taken for more than three semester hours the student will be guided to learn those individual tests which will be most useful in the student's work or research activities. *Prerequisites:* Ed.P. 3400 and 3535.

**3537 Independent Graduate Study — Seminar (3-0)**

*Prerequisite:* Permission of the Graduate Advisor.

**3538 Mental Hygiene in Education (3-0)**

Psychological principles, theories, and practices examined and applied to the individual school, family, and community mental health problems. Implications of school practices for mental health.

**3539 Group Counseling: Theory and Process**

Study of history, principles, theory and techniques of group counseling as applied to human relations. Emphasis will be placed on the acquisition and practice of the technical skills unique to group counseling as derived from current research knowledge of group processes and on the articulation of the conceptual underpinnings thereto appertaining.

**3540 Educational Psychology — Seminar: Theories of Learning (3-0)**

Discussion of types of learning theory, behavioristic, cognitive, and functional. Student reports and discussion of primary source material — Thorndike, Tolman, Watson, Skinner, Guthrie, Robinson, Ausubel, mathematical learning theory, information learning theory, and neurophysiology of learning. Discussion of the relation of psychoanalytic, phenomenological, Piagetian, and Brunerian approaches to learning theory.

**3541 Theories of Counseling (3-0)**

A study of the various counseling theories and their application to the counseling process.

**3542 Computer Methods in Education and the Behavioral Sciences (3-0)**

Application of computers to various problems in education and the behavioral sciences with emphasis on data processing machines, programming languages, and utilization of existing program libraries for data analysis. *Prerequisite:* Ed.P. 3500 or the equivalent.

**3545 Characteristics of Language/Learning Disability Children (3-0)**

A study of the various theoretical, etiological, sociological and behavioral approaches to teaching the language/learning disabled child.

**3550 Workshop in Educational Psychology and Guidance**

(Area of study will be designated.)

**3555 Aging and Human Behavior (3-0)**

*Survey of the life span with emphasis on development and problems of adjustment in maturity and old age. Attention to such issues as perception, learning, motivation, intelligence, achievement, personality and other aspects of normal and pathological aging.*

**3556 Mental Health and Aging (3-0)**

Mental health needs of the elderly, the relationship between physical and mental health, social and biological factors affecting the mental health of the elderly and aspects of primary prevention.

**3570 Advanced Statistics (3-0)**

Review of experimental design. Study of tests of hypothesis, linear regression and analysis, correlation analysis, multiple variate analysis. Introduction to research operation related to computers. *Prerequisite:* Ed.P. 3400 or 3500.

**1580-6580 Internship**

Supervised experience in public schools and/or in selected agencies and institutions. *Prerequisite:* Permission of the graduate advisor.

**3598-99 Thesis Course for Master's Degree (3-0)**

*Prerequisite:* Twelve semester hours of advanced courses in Ed.P. and permission of the graduate advisor.

## HEALTH & PHYSICAL EDUCATION

801C Education Building  
(915) 747-5430

CHAIRMAN: Brian Kelly

PROFESSORS: Hardin, Harris, Mason

ASSOCIATE PROFESSORS: Collins, B. Kelly, N. Kelly,  
Poteet

ASSISTANT PROFESSORS: Glardon, Loper

INSTRUCTOR: Gamboa

### HEALTH EDUCATION

For Undergraduates

*General prerequisite:* Junior standing for all 3300 or 3400 level courses and a degree plan on file.

**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. Open to all students. American Red Cross First Aid Certification may be earned.

**3202 Nutrition Education (3-0)**

The nutritional needs of the school-age child and his family. Studies will be made of factors affecting food choice and meal patterns; the scientific bases for components of an adequate diet and local, national and world nutritional problems.

**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)**

An overview of both traditional and innovative teaching methods, materials and resources in health instruction.

**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.

For Undergraduates and Graduates

**3301 Community Hygiene (3-0)**

Group health and the social and governmental agencies concerned with environmental control and health protection. Three hours of lecture per week and field trips.

## 70 / THE COLLEGE OF EDUCATION

### 3302 Elementary School Health Education (3-0)

The fundamentals of education programs, school environment, school health services, and 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 (3-0)

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:* H.E. 3301.

### 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)

The study of the incidence and prevalence of disease in man, and the principles and current status of comprehensive health planning.

## PHYSICAL EDUCATION

### For Undergraduates

### 1101 Activity Course (0-3)

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

## SKILLS COURSES FOR PHYSICAL EDUCATION TEACHING FIELDS

1201 Conditioning	Archery
1202 Football	Badminton
1203 Modern Creative Dance	Gymnastics II
1204 Basketball	Handball
1205 Track	Folkdance
1206 Softball	Swimming II
Volleyball	(life saving)
Swimming	Fencing
Wrestling	Social dance
Field Hockey	Judo
Gymnastics I	Karate
Tennis	Golf
Basic Dance	Self-Defense
Soccer	

Each skills course is worth one-third credit. Each Skills course will be one-half semester (eight weeks) in length. The all-levels major in health and physical education must earn a total of six credits in skills courses.

### 1207 Modern Dance and Tap Dance (1-0)

Basic skills and techniques of tap dance and modern dance.

### 1208 Ballet for Gymnastics/Rhythmical Gymnastics (1-0)

An introduction to dance movements used in gymnastics floor exercise and balance beam; rhythmical gymnastics with or without hand apparatus.

### 1209 Folk and Ethnic Dance (1-0)

An introduction to and performance of folk and ethnic dances of the world; their origins, music and costuming.

### 1210 Social Dance and Square Dance (1-0)

Basic skills and techniques of social and square dance.

### 1211 Creative Dance/Notation/Accompaniment (1-0)

An introduction to creative dance with emphasis on original movement; elementary labanotation; accompaniments for movement.

### 3103 Introduction to Physical Education (3-0)

Historical and philosophical aspects of physical education internationally and nationally, and the current relationship 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; comparison of systems; strategy; conditioning; selection of individuals, 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 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 positions.

### 3210 Coaching Gymnastics, Swimming (1-2)

Coaching methods and problems; fundamentals of varsity team play; strategy; training, conditioning; selection of individuals for positions.

### 3215 Historical and Cultural Aspects of Dance (2-1)

A study of dance from early to modern times with particular focus on American dance in the 20th Century.

### 3304 Current Methods and Materials in Physical Education in Secondary Schools (3-0)

A course designed to develop methods, teaching techniques, and materials for the teaching of physical education in the secondary schools with major emphasis on teaching team sports. Field experiences in the public schools will be required. *Prerequisite:* Must have completed four team sports skills.

### 3305 Current Methods and Materials in Physical Education in Secondary Schools (3-0)

Major emphasis on teaching dual and individual sports. Field experience will be required. *Prerequisite:* Must have completed four individual sports skills.

### 3316 Methods and Material in 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 Teaching Technique and Composition (1-2)

A course in the teaching of creative dance and dance composition. *Prerequisite:* P.E. 1211.

### 3318 Physical Education for the Pre-school, Kindergarten Child, and Primary Grade Child (3-0)

A course designed to introduce future teachers of this age group to the types of activities suitable for the pre-school, kindergarten child and primary grade child. The course will include movement education (basic rhythms), creative dance, singing games, low organized activities, and water confidence.

### 3319 Dance Practicum (0-3)

Observation and participation in dance teaching in the public schools. *Prerequisite:* Five semester hours of dance labs.

### 3320 Current Methods and Materials for Elementary Schools (Intermediate Level) (3-0)

Materials, class management and instructional techniques in the physical education program for the elementary school. A 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 experiences in schools will be required.

### 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 chairman of the department.

**3409 Sports Activities, Injuries, Training, and Emergency Care (3-0)**

The recognition and prevention of injuries in sports activities as well as the emergency care provisions for the usual physical education and playground injuries. *Prerequisite:* Senior standing, or permission of departmental chairman.

**3411 Methods and Materials in Teaching Folk, Social, Square and Ethnic Dance (1-2)**

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

**3412 Dance Production (1-0)**

A course in dance covering the following aspects of dance production: choreography, lighting, make up, programming, accompaniment, sound systems, costuming and set design. *Prerequisites:* P.E. 3316, 3411.

**3415 Advanced Athletic Training (3-0)**

A course to develop competence in the use of all commonly used 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:* P.E. 3409, Biol. 4211-1212, Permission of the instructor.

**3496 Professional Laboratory Experience in the Elementary School (3-0)**

A minimum of ten hours a week for one semester of laboratory observation and teaching experience in an elementary school program of health and physical education. *Prerequisites:* A grade point average of at least 2.0 in both English 3111-12 and any 3 hours of Speech; of at least 2.5 in health and physical education courses; 2.0 over-all; Ed.P. 3301, Ed.C. 3302; P.E. 3205; senior standing and permission of college supervisor of student teaching. Students must file a student teaching application with their college supervisor during the preceding semester. Must have completed a minimum of 12 skills.

**3498 Professional Laboratory Experience in the Secondary School (3-0)**

A minimum of ten hours a week for one semester of laboratory observation and teaching experience in the health and physical education program in the secondary school. *Prerequisites:* A grade point average of at least 2.0 in English 3111-12 and any 3 hours of Speech; of at least 2.5 in health and physical education courses; 2.0 over-all; Ed.P. 3301, Ed.C. 3302; P.E. 3304; senior standing and permission of college supervisor of student teaching. Students must file a student teaching application with their college supervisor during the semester preceding. Must have completed a minimum of 12 skills.

## Graduate Programs

The Master of Science degree in Health and Physical Education is slanted towards the needs of the student wishing to pursue research and to continue professional education beyond the master's degree level.

The Master of Education degree in Health and Physical Education is primarily directed toward the student teaching Health and Physical Education in the elementary or secondary school.

### DEPARTMENTAL REQUIREMENTS FOR MASTER OF SCIENCE DEGREE

Candidates for M.S. degrees are required to satisfactorily complete Ed.P. 3500, P.E. 3502 and P.E. 3505, six semester hours of approved work outside the department, six semester hours of thesis, and nine semester hours of graduate physical education course work for a total of 30 semester hours.

An oral defense of the thesis, satisfactory to the department graduate faculty, must be made before the degree will be awarded.

### DEPARTMENTAL REQUIREMENTS FOR MASTER OF EDUCATION DEGREE

Candidates for the M.Ed. will be required to complete a total of thirty-six semester hours of course work. At least twenty-seven must be 3500 level and must include Ed.P. 3500, PE 3502, and PE 3505 plus a 3500 level health education course. Six semester hours of the advanced or graduate course work must be taken as a minor area outside the Department.

A comprehensive examination will be required during the last semester of attendance, and a research paper of acceptable quality must be submitted to the graduate committee before the M.Ed. degree will be awarded.

Only nine hours of advanced courses (3300 and 3400 courses) can be counted toward the degree.

#### For Undergraduates and Graduates

**3303 Measurement in Health and Physical Education (3-0)**

A study of tests, both in health and physical education, their purpose, use, scoring and interpretation. *Prerequisite:* Junior standing or permission of the instructor.

**3311 Organization and Administration of Physical Education (3-0)**

The place of a diversified physical education program in the total education program, with emphasis on the administrative problems underlying a functional program.

**3312 Kinesiology (3-0)**

Analysis of movements, specialized skills, and motor coordination in terms of the mechanics of skeletal and muscular movement. *Prerequisites:* Biology 4211, 1212, and Junior standing.

**3401 Exercise Physiology (3-0)**

Physiological adaptations of circulatory, respiratory, excretory, digestive, endocrine and muscular systems to exercise and the relationships of these adaptations to physical education and athletics. *Prerequisites:* Biology 4211 and 4212.

**3410 Health and Physical Education Seminar (3-0)**

Seminar covering selected areas of health and physical education. This course may be substituted for a deficiency in the advanced physical education requirements for the physical education teaching fields. *Prerequisites:* Senior standing and permission from chairman of the department.

**3414 Special Physical Education (2-1)**

Development of an understanding of the atypical child and programs of physical education adapted to his 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.

#### For Graduate Students Only

*Prerequisite:* Twelve semester hours of advanced courses in Health and Physical Education and a bachelor's degree.

**3502 History, Philosophy, and Professional Literature in Health and Physical Education (3-0)**

The historical development of physical and health education with the philosophical viewpoints and literature which have had the greatest influence on current health and physical education.

**3504 Curriculum Construction in Health Education (3-0)**

The health education curriculum at all public school levels will be studied with emphasis on curriculum as recommended by the Texas Education Agency.

**3505 Research Methods (3-0)**

Designed to familiarize the student with the basic forms of research employed in health and physical education. Emphasis will be given to: experimental research, descriptive research, casual research, historical research, and philosophical research with direction given to library techniques.

**3506 Scientific Basis of Physical Education (3-0)**

Designed to approach at an advanced level the kinesiological, mechanical, physiological and psychological aspects of physical education. *Prerequisite:* P.E. 3312 or equivalent.

**3507 Administration and Supervision of Health and Physical Education (3-0)**

Administrative problems and supervisory techniques in health and physical education.

**3508 Sociological and Psychological Foundations of Physical Activity and Sport**

The study of socio-psychological processes, principles, and factors affecting man's behavior in physical activity and sport. Investigation is made of current socio-psychological problems with implications for physical education and athletic coaching.

**3509 Advanced Topics In Health and Physical Education**

This course will emphasize individual problems in the field of health and physical education. The course may be repeated once for credit.

**3510 Seminar: The Teaching of Family Life and Sex Education (3-0)**

A study of biological, behavioral and cultural aspects of human sexuality. Emphasis is centered on teacher understanding and the development of methods and materials for all grade levels.

**3511 Evaluation In School Health Instruction (3-0)**

Principles of objective test construction; the place of behavior and attitude scales, questionnaires and inventories in the evaluation of school health instruction.

**3513 Seminar: Problems In Content and Method In Health Instruction (3-0)**

A course for experienced teachers that emphasizes flexibility and changes in content and method to meet the abilities of students.

**3514 Current Issues in School Health Education (3-0)**

Individual identification and study of current issues in school health education. Extensive reading and critical analysis of literature required.

**3515 Curriculum In Physical Education**

Analysis of criteria and procedures for curriculum construction in physical education; development of written guides for programs in elementary and secondary schools, colleges and universities.

**3516 Facilities Planning In Health, Physical Education and Recreation (3-0)**

Principles, standards and designs utilized in planning, construction and maintenance of indoor and outdoor facilities. To prepare students to serve as physical education, recreation and athletic program consultants to facility planning committees.

**3517 Administration of Recreation Programs (3-0)**

Organization and administration of recreation programs in communities and educational institutions. Analysis of planning programs, legal problems, public relations, personnel administration, areas and facilities and finance and business procedures.

**3518 Problems in the Organization and Administration of Athletics (3-0)**

Problems in managing the affairs of athletic programs: including intramural sports, interscholastic and intercollegiate athletics. Consideration will be given to policies, contest management, facilities and equipment, finances and budgets, scheduling, safety, public relations and legal liability.

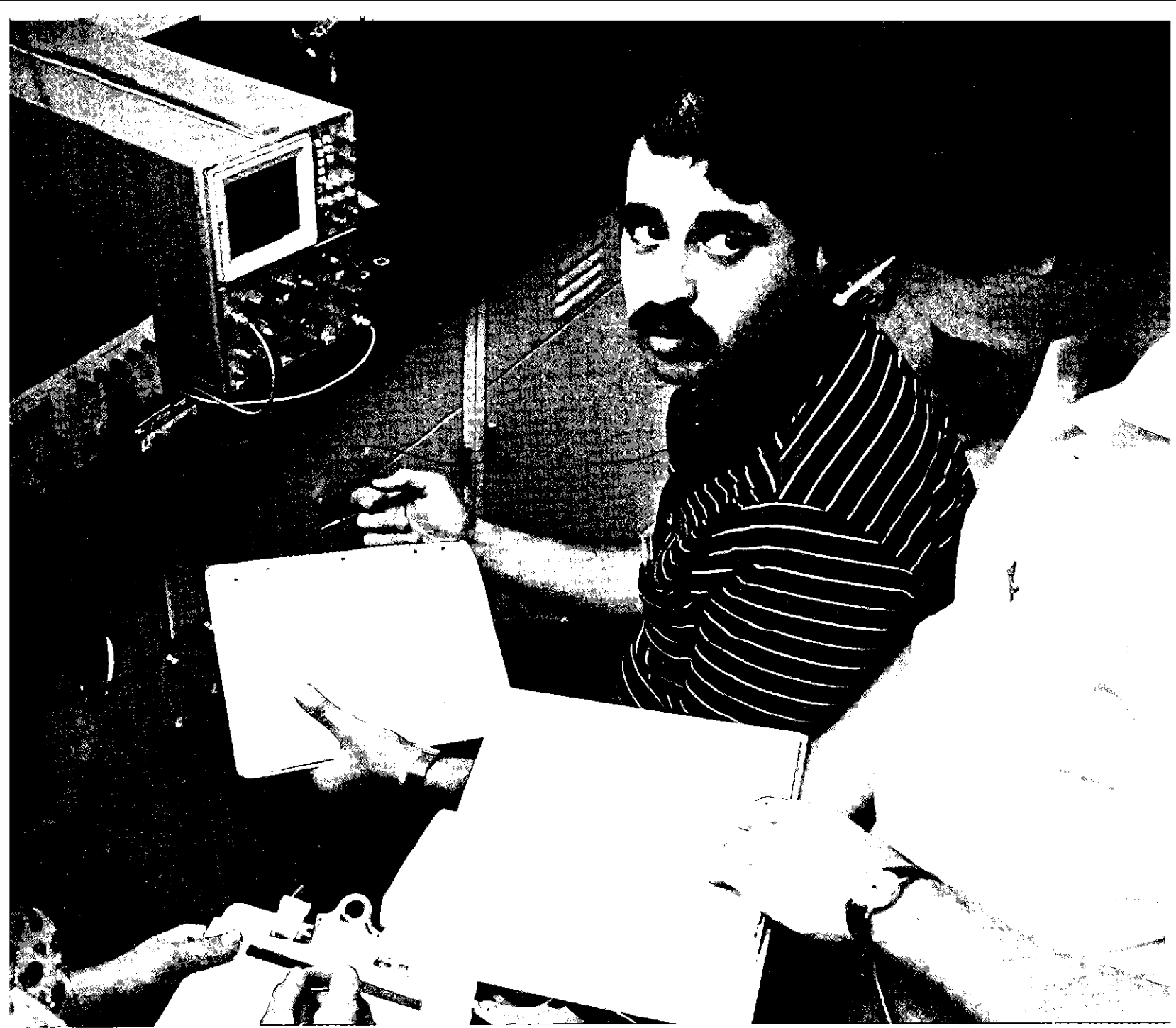
**3519 Physical Education In the Elementary School**

A study of the organization, administration and curricular content of elementary school physical education with emphasis on the various teaching approaches involved.

**3550 Workshop In Problems In Health and Physical Education**

**3551 Advanced Workshop In Problems In Health and Physical Education**

**3598-3599 Thesis**



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

**Jack Smith, Dean  
Stephen W. Stafford, Assistant Dean  
Engineering Building 230  
(915) 747-5460**

# **The College of Engineering**

## GENERAL INFORMATION

The Faculty of the College offers an engineering education stressing fundamentals and student laboratory involvement with the intent of providing a base for continued life-long learning.

To recognize outstanding achievement and encourage professional activities, each department has an active student branch of its parent professional society and a branch of the professional honor society. Additionally, there are campus chapter honorary and professional societies which cover all fields of Engineering. Participation in these groups provides a valuable educational experience and students are encouraged to participate to the extent of their eligibility.

If you are interested in a career in Engineering, join others with similar interests here at The University of Texas at El Paso.

### Accreditation

The Bachelor of Science Degrees offered in Civil, Electrical, Mechanical and Metallurgical Engineering are accredited by the Accreditation Board for Engineering and Technology (ABET).

### Undergraduate Study in Engineering

Sufficient courses are offered at U.T. El Paso for a student to complete some work toward other Engineering degrees, including Chemical Engineering, Architectural Engineering, and Architecture. Information regarding these introductory programs can be obtained from the office of the Dean of Engineering.

### 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.

### Honors Program

Students entering the Upper Division Program with an overall GPA in excess of 3.00 are eligible to design a course plan of study in the Honors Program tailored to their special needs or interests; the selection and arrangement of courses can be planned by the student in consultation with his advisor and department chairman.

### Transferring 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 U.T. 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.

### Freshman Year

1st Semester	Hrs.
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
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### Lower Division Program College of Engineering

1. A fully qualified engineering student enrolling in the University for the first time will enter the department of his choice in the Lower Division Program.
2. In order to enroll in Upper Division courses the student must have a 2.00 GPA for the hours designated by his department for the Lower Division Program and must have a "C" or better in certain courses as specified. Students in the College of Engineering are required to obtain a "C" or better in each of the following courses, if taken, plus any other courses as specified by the department: Chem. 3105, 3106, 2106; Math. 4111, 3212, 3217, 3326; Eng. 3111, 3112 or Ling. 4112, 4113 for non-native speakers of English; CE. 3215, 3234; CS 3120; ME 3238.
3. A student who does not meet the requirements under 2, above, must repeat courses in which "D" or "F" grades were received.
4. A student may take up to 9 hours of Upper Division courses during his last semester in the Lower Division with the approval of his advisor.
5. Any student who has not met the GPA requirement after taking 90 hours will be requested to transfer out of the College of Engineering.
6. If a student transfers within the College, the curriculum of the new department applies and decisions regarding substitutions are the responsibility of the department chairman.

### Master of Science Degree in Engineering

Admission and degree requirements are described in the Graduate School section of the catalog. The graduate course offerings for each department are listed in that department.

The College of Engineering offers an interdisciplinary degree which is outlined below.

### MASTER OF SCIENCE IN INTERDISCIPLINARY STUDIES (MSIS)

The M.S.I.S. degree requires 36 hours of graduate credit coursework spread among at least three departments, not necessarily all in Engineering, with no more than 15 hours in any one department.

It is a non-thesis program. Personalized curriculum is available for each student depending on their individual interests. The program is designed for students with a B.S. degree who wish to expand their knowledge at the graduate level not only in their undergraduate field of study but particularly in other areas. Specific requirements for the degree are shown in the Graduate School section of this catalog.

## 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) Environmental Studies and (2) Structures-Design permit more in-depth study:

2nd Semester	Hrs.
ENGL 3112 + Freshman English	3
CS 3120 + Introduction to Digital Computers	3
MATH 3212 + Calculus	3
HIST 3101 or 3103	3
CHEM 3106* + General Chemistry	3
CHEM 2106* + General Chemistry Lab	2
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**Sophomore Year**

1st Semester		2nd Semester	
CE 3215 + Engineering Mechanics I . . . . .	3	ME 3238 + Engineering Mechanics II . . . . .	3
HIST 3102 or 3104 . . . . .	3	CE 3234 + Mechanics of Materials I . . . . .	3
MATH 3217 + Calculus . . . . .	3	ME 3275 Thermodynamics I . . . . .	3
PHYS 4210 Mechanics and Thermal Physics . . . . .	4	MATH 3326 + Differential Equations . . . . .	3
PS 3110 American Government . . . . .	3	PS 3111 American Government . . . . .	3
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	16		15

**Junior Year**

1st Semester		2nd Semester	
CE 3313 Engineering Measurements . . . . .	3	CE 3326 Engineering Economy . . . . .	3
CE 3343 Structural Analysis I . . . . .	3	ME 4354 Fluid Mechanics . . . . .	4
Met. 3203** Materials Science . . . . .	3	CE 4448 Soil Mechanics . . . . .	4
GEOL 3321 Geology for Engineers . . . . .	3	CE 1236 Materials Laboratory . . . . .	1
CE 1234 Materials Laboratory . . . . .	1	CE 3440 Transportation Engineering . . . . .	3
Electives*** . . . . .	4	Electives*** . . . . .	3
	<hr/>		<hr/>
	17		18

**Senior Year**

1st Semester		2nd Semester	
CE 3435 Structural Design I . . . . .	3	CE 4456 Hydraulic Engineering . . . . .	4
CE 3441 Water Treatment . . . . .	3	CE 3442 Waste Treatment . . . . .	3
EE 4377 Basic Electrical Engineering . . . . .	4	CE 1453 Water & Waste Laboratory . . . . .	1
CE 1495 Senior Professional Orientation . . . . .	1	CE 3461 Structural Design II . . . . .	3
Electives*** . . . . .	6	Electives*** . . . . .	6
	<hr/>		<hr/>
	17		17

Total Semester Credit Hours . . . 133

\*Biology 3105-1107, 3240 or Phys. 3120-1121 may be substituted.

\*\*Environmental programs students should substitute Science elective approved by advisor.

\*\*\*Students consulting with their advisor should elect 19 hours of electives including 6 hours of Humanities or Social Sciences, 3 hours of Mathematics, 4 hours of Science, 3 hours of CE courses, 3 hours of additional electives approved by advisor.

+ Means grade of C required.

## BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

The Electrical Engineering program includes two options, the general Electrical Engineering Option and the Computer Engineering Option. Both options are divided into two year lower and upper divisions. The lower division provides diverse courses covering a broad base of technical subjects while the upper division provides the more specialized courses. The first option is more flexible and allows for specialization in communications, control, electronics and electrical power systems.

**General Option****Freshman Year**

1st Semester		2nd Semester	
EE 3105 + Intro to Electrical Engineering . . . . .	Hrs. 3	ENGL 3112 + Freshman English . . . . .	Hrs. 3
ENGL 3111 + Freshman English . . . . .	3	CHEM 3106 + General Chemistry . . . . .	3
CHEM 3105 + General Chemistry . . . . .	3	MATH 3212 + Calculus . . . . .	3
MATH 4111 + Calculus . . . . .	4	HIST 3101 or 3103 American History . . . . .	3
Elective Humanities & Social Science . . . . .	3	CS 3120 + Digital Computing . . . . .	3
	<hr/>		<hr/>
	16		15

**Sophomore Year**

1st Semester		2nd Semester	
MATH 3217+ Analytical Geometry and Calculus	3	EE 3251+ Networks I	3
HIST 3102 or 3104 American History	3	EE 1209+ Computation Lab.	1
POSC 3110 American Government	3	EE 1251+ Basic EE Lab	1
EE 1205+ Measurements Lab	1	MATH 3326+ Differential Equations	3
PHYS 4210+ Mechanics and Thermodynamics	4	POSC 3111 American Government	3
	—	PHYS 4211+ Electricity and Magnetism	4
	14	ME 3339+ Partical Dynamics	3
			<hr/> 18

**Junior Year**

1st Semester		2nd Semester	
EE 2310 Elect. Eng. Lab. I	2	EE 2311 Elect. Eng. Lab II	2
EE 3339 Electronics I	3	EE 3340 Electronics II	3
EE 3352 Networks II	3	Approved Electives*	3
Approved Electives*	3	EE 3385 Energy Conversion	3
EE 3321 Electromagnetic Field Theory	3	EE 3347 Electromagnetic Energy Trans. & Rad.	3
MET 3310 Thermodynamics	3	PHYS 3325 Intro. to Modern Physics	3
	—		—
	17		17

**Senior Year**

Two Semesters		Two Semesters (Continued)	
EE 1495 Senior Professional Orientation	1	EE 3464 Systems & Controls	3
EE 2412 Senior Project Lab	2	CE 3326 Engineering Economy	3
EE 3441 Communication Systems	3	Approved Electives*	18
EE 3450 Phys. Elect.	3		—
	—		33

Total Semester Credit Hours . . . 131

\*Twenty-seven hours of approved electives are required. Nine hours of electives must be in Humanities and Social Sciences. Six 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 six hours of technical electives must be in Electrical Engineering. All technical electives must be in Engineering and the Biological or Physical Sciences.

+ Grade of A, B, or C required.

**Computer Engineering Option**

**Freshman Year**

1st Semester		2nd Semester	
CHEM 3105+ General Chemistry	3	CHEM 3106+ General Chemistry	3
EE 3105+ Intro. to Electrical Engineering	3	MATH 3212+ Calculus	3
MATH 4111+ Calculus	4	ENGL 3112+ Freshman English	3
ENGL 3111+ Freshman English	3	HIST 3101 American History	3
Elective Humanities and Social Studies	3	POSC 3110 American Government	3
	—	EE 1205+ Measurements Lab	1
	16		—
			16

**Sophomore Year**

1st Semester		2nd Semester	
PHYS 4210+ Mechanics and Thermodynamics	4	PHYS 4211+ Electricity and Magnetism	4
MATH 3217+ Analytic Geometry and Calculus	3	EE 3251+ Networks I	3
POSC 3111+ American Government	3	MATH 3326+ Differential Equations	3
HIST 3102 American History	3	EE 1209+ Computation Lab.	1
CS 3120 Digital Computing	3	EE 1251+ Basic EE Lab	1
	—	MATH 3323+ Linear Algebra	3
	16		—
			15

**Junior Year**

1st Semester		2nd Semester	
EE 3321 Electromagnetic Field Theory	3	PHYS 3325 Modern Physics	3
EE 3352 Networks II	3	EE 3342 Digital Sys. Design II	3
EE 3339 Electronics I	3	EE 1442 Digital Sys. Design Lab	1
EE 2310 Elect. Engr. Lab I	2	EE 3340 Electronics II	3
EE 3369 Digital Sys. Design I	3	EE 2311 Elect. Eng. Lab II	2
CS 3332 Assembler Language Programming	3	EE 3473 Minicomputers	3
	17	MATH 3429 Numerical Analysis	3
			18

**Senior Year**

1st Semester		2nd Semester	
EE 1495 Senior Professional Orientation	1	CE 3326 Engineering Economy	3
EE 3450 Physical Electronics	3	EE 2412 Senior Project Lab	2
EE 3478 Microprocessors and Interfacing	3	Approved Electives**	12
EE 1478 Microprocessors and Interfacing Lab	1		17
EE 3474 Operating Sys. Design	3		
Approved Electives**	6		
	17		

Total Semester Credit Hours . . . 129

\*\*Twenty-four hours of approved electives are required. Nine hours of electives must be in Humanities and Social Sciences. Fifteen hours must be technical courses and must be chosen from three or four hundred level courses. At least nine hours of technical electives must be in Electrical Engineering. All technical electives must be in Electrical Engineering, Mathematics, or the Biological Sciences.

+ Grade of A, B, or C required.

## 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		2nd Semester	
CE 3105 Graphical Fundamentals	3	CS 3120 + Intro. To Digital Computation	3
CHEM 3105 General Chemistry	3	PHYS 4210 + Mechanics & Thermal Physics	3
ENGL 3111 + English Composition	3	ENGL 3112 + Research & Critical Writing	3
MATH 4111 + Calculus	4	MATH 3212 + Calculus	3
POSC 3110 American Gov't and Politics or HIST 3101 or 3103 Hist. of U.S.	3	POSC 3111 American Gov't and Politics or HIST 3102 or 3104 Hist. of U.S.	3
	16		16

**Sophomore Year**

1st Semester		2nd Semester	
CE 3215 + Engineering Mechanics I	3	ME 3238 + Engineering Mechanics II	3
ME 3236 Manufacturing Processes	3	ECON 3204 Principles of Economics	3
MATH 3217 + Calculus	3	ME 3375 + Thermodynamics I	3
Science Elective, GEOL 4101, BIOL 3105, 1107, CHEM 3106, 2106	4	MATH 3326 + Differential Equations	3
POSC 3110 American Government & Politics or HIST 3101 or 3103 Hist. of U.S.	3	MATH 3330 + Probability	3
	16	POSC 3111 American Government & Politics or HIST 3102 or 3104 Hist. of U.S.	3
			18

**Junior Year**

1st Semester	
PHYS 4211 Fields & Waves.....	4
CE 3234 + Mechanics of Materials I.....	3
IE 4377 Methods & Human Factors Analysis.....	4
MATH 3480 + Intro. to Math Stat.....	3
Humanities Elective.....	3
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	17

2nd Semester	
EE 4377 Basic Electrical Engr.....	4
CE 3326 Engineering Economy.....	3
IE 3389 Deterministic Operations Research.....	3
ACCT 3309 Survey of Accounting.....	3
Physics Elective.....	3
(Phy 3320, 3323, 3325, 3428 or 3470)	
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**Senior Year**

1st Semester	
ME 4354 Fluid Mechanics.....	4
IE 3492 Probabilistic Operations Research.....	3
IE 4491 Production and Inventory Control.....	4
IE 3432 Safety Engineering.....	3
IE 1495 Senior Prof. Orientation.....	1
Humanities Elective.....	3
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	18

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
Approved Technical Elective.....	3
	<hr/>
	16

Total Semester Credit Hours . . . 133

+ Grade of "C" or better required.

**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		Hrs.
CE 3105 Graphical Fundamentals.....	3	
CHEM 3105 General Chemistry.....	3	
ENGL 3111 + English Composition.....	3	
MATH 4111 + Calculus.....	4	
POSC 3110 American Gov't and Politics or HIST 3101 or 3103 Hist of U.S.....	3	
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		16

2nd Semester		Hrs.
CS 3120+ Intro to Digital Computation.....	3	
PHYS 4210 + Mech/Thermal Physics.....	4	
ENGL 3112 + Research & Critical Writing.....	3	
MATH 3212 + Calculus.....	3	
POSC 3111 American Gov't and Politics or HIST 3102 or 3104 Hist. of U.S.....	3	
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		16

**Sophomore Year**

1st Semester		
CE 3215+ Engineering Mechanics I.....	3	
MATH 3217 + Calculus.....	3	
Science Elective+, GEOL 4101, BIOL 3105, 1107, CHEM 3106, 2106.....	4	
MET 3203 Materials Selection.....	3	
POSC 3110 American Gov't and Politics or HIST 3101 or 3103 Hist. of U.S.....	3	
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		16

2nd Semester		
ME 3238+ Engineering Mechanics II.....	3	
ME 3236 Manufacturing Processes.....	3	
ME 3241+ Engineering Analysis.....	3	
MATH 3326 + Differential Equations.....	3	
POSC 3111 American Gov't and Politics or HIST 3102 or 3104 Hist. of U.S.....	3	
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		15

**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	
Humanities Elective.....	3	
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		16

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	
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		17

**Senior Year**

1st Semester		2nd Semester	
ME 4451 Heat Transfer .....	4	Physics Elective, PHYS 3323, 3351, 3325 or 3448 .....	3
ME 3464 Senior Analysis .....	3	ME 4466 Senior Design .....	4
CE 3326 Engineering Economy .....	3	Approved Electives* .....	6
Math Elective, MATH 3335 or 3436 .....	3	ME 4465 Dynamic Response .....	4
Humanities Elective .....	3		<u>17</u>
ME 1495 Senior Prof. Orientation .....	1		
	<u>17</u>		

Total Semester Credit Hours . . . 130

+ Grade of "C" or better required.

\*Approved electives are: ME 4311, ME 3412, ME 3442, ME 3455, ME 3456, ME 3471, ME 3487, ME 3491, IE 3432, IE 3389, IE 3484, IE 3485.

A student may petition the departmental Curriculum Committee for an exception to the above list.

## BACHELOR OF SCIENCE IN METALLURGICAL ENGINEERING

(Materials Engineering and Chemical Process Options)

The Department of Metallurgical Engineering program is designed to provide an industrially-oriented education leading to the professional degree. Career options are in mineral-based industries (primary metal, chemical and allied products, petroleum refining, and corrosion engineering) and metal-based industries (durable goods manufacturing, non-durable goods, transportation, communications, utilities, and construction).

**Freshman Year**

1st Semester	Hrs.	2nd Semester	Hrs.
CHEM 3105+ General Chemistry .....	3	CHEM 3106+ General Chemistry .....	3
ENGL 3111+ Freshman English .....	3	CHEM 2106+ Chemistry Lab .....	2
MATH 4111+ Calculus .....	4	ENGL 3112+ Freshman English .....	3
MET 3101+ Intro. to Metallurgy .....	3	MATH 3212+ Calculus .....	3
CE 3105 Graphical Fundamentals .....	3	POSC 3110 Amer. Gov't & Politics .....	3
	<u>16</u>	CS 3120 Intro. to Digital Comp. ....	3
			<u>17</u>

**Sophomore Year**

1st Semester		2nd Semester	
MET 3205+ Chem & Met. Proc Anal. ....	3	CE 3215+ Mechanics .....	3
MATH 3217+ Calculus .....	3	MET 3206 Metallurgical Transport .....	3
PHYS 4210 College Physics I .....	4	MATH 3326+ Differential Equations .....	3
MET 3203 Materials Selection .....	3	PHYS 4211 College Physics II .....	4
MET 1203 Mat. Selection Lab .....	1	MET 3208 Applied Thermodynamics .....	3
POSC 3111 Amer. Gov't & Politics .....	3		<u>16</u>
	<u>17</u>		

**Junior Year**

1st Semester		2nd Semester	
HIST 3101 or 3103 Hist. of U.S. ....	3	HIST 3102 or 3104 Hist. of U.S. ....	3
MET 3302 Mineral Engineering .....	3	MET 4304 Process Metallurgy I .....	4
MET 4306 Physical Met. I# .....	4	MET 4307 Physical Met. II# .....	4
CHEM 3351 Physical Chemistry .....	3	ME 3305 Instr. & Measurement .....	3
ME 3241 Engr. Analysis .....	3	ME 3234 Mechanics Of Materials .....	3
	<u>16</u>		<u>17</u>

**Senior Year**

<b>1st Semester</b>	<b>2nd Semester</b>
ENGL 3359 Technical Writing . . . . .	*#Metallurgy Electives . . . . .
MET 4305 Process Met. II . . . . .	**#Technical Electives . . . . .
MET 1495 Senior Professional Orientation . . . . .	Humanities/Social Science Elective . . . . .
#*Metallurgy Electives . . . . .	
Humanities Elective . . . . .	
MET 3409 Corrosion . . . . .	
	16
17	

Total Semester Credit Hours . . . 132

\*Electives Offered: MET 3412, 4415, 4411, 3416, 3413, 4403.

\*\*Technical Elective — Any Junior or senior engineering or science course. Approval of advisor is required.

+ Grade of "C" or better required.

#Chemical Process Option — Students in the Process Option should substitute ME 4351 and ME 4354 and take Organic Chemistry as electives.

**CIVIL ENGINEERING**

201B Engineering Science Complex  
(915)747-5464

CHAIRMAN: Andrew D. Jones

PROFESSORS: Applegate, Bartel, Hassler, Jones

ASSOCIATE PROFESSORS: Das, Oey, Rozendal, Tarquin,  
Young

For Undergraduates

*General prerequisite:* Junior standing for all 300 or 400 level courses.

**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. Preliminary investigation of elementary engineering design.

**3215 Engineering Mechanics I (3-0)**

Forces in space, equilibrium of particles and rigid bodies, friction, centroids, centers of gravity. *Prerequisite:* Mathematics 3212 concurrently.

**3234 Mechanics of Materials I (3-0)**

Study of stress, strain, torsion, shear, moment, flexure, combined stresses and column action. *Prerequisite:* Civil Engineering 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 of in-place materials for quality control and determination of stresses and strains under loads will be included. Lab Fee \$6. *Prerequisite:* CE 3234 or concurrent enrollment.

**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:* \$6.

**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.

**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:* Mathematics 4111 and Civil Engineering 3105 and a knowledge of FORTRAN. *Laboratory Fee:* \$4.

**3314 Route Surveying (2-3)**

Theory of simple, compound, reverse, and spiral curves, and computation of earth work. *Prerequisite:* CE 3313.

**3325 Energy and Environment (3-0)**

Introductory survey of the sources and societal demands for energy; hydropower, low-head hydro, geothermal, fossil, nuclear, solar, wind, and biomass; use and abuse of energy resources; consumption patterns and projections; environmental concerns associated with energy development. *Prerequisite:* Junior standing.

**3326 Engineering Economy (3-0)**

Application of economics to engineering and industrial problems which require a knowledge of engineering for their solution. *Prerequisite:* Junior standing, a knowledge of FORTRAN, or approval of instructor.

**3343 Structural Analysis I (3-0)**

A study of framed structures, trusses, girders, beams including applications of static and moving loads and bridges. *Prerequisite:* Civil Engineering 3234.

**4390 Introduction to Air Pollution (3-3)**

Classification of air pollutants and their effects on man, animals, plants and the environment; meteorological aspects of air pollution; sources of air pollution; plume characteristics; units of measurement; physical properties of dusts, gases, and aerosols. *Prerequisites:* Junior standing in engineering or sciences and approval of instructor. *Laboratory Fee:* \$4.

**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:* \$4.

**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. *Prerequisite:* CE 3343.

**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, CE 3326, ME 4354.

**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, CE 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 consent of the instructor.

**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 permission 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:* ME 3238, 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 permission 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:* \$6.

**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:* \$2.

**4460 Structural Analysis II (3-3)**

Analysis of statically indeterminate structures including continuous beams and frames. *Prerequisites:* CE 3343 and Senior standing. *Laboratory Fee:* \$2.

**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:* \$2.

**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.

**For Graduate Students Only****Departmental Requirements for Master of Science Degree**

The graduate program in Civil Engineering covers the areas of (1) Structural Engineering and (2) Environmental Studies. Courses offered in other areas of Civil Engineering may be chosen as electives.

Requirements for an M.S. degree include either a thesis (CE 3598-99) plus a minimum of 24 semester hours of course work, or a problem report substitution for the thesis requirement plus a minimum of 30 semester hours of course work. Under extremely exceptional circumstances, the departmental graduate faculty may recommend a non-thesis program consisting of a minimum of 36 semester hours of course work. The recommendation must be approved by the Graduate Dean.

Admission to the Civil Engineering graduate program requires a satisfactory score on the Advanced Engineering portion of the Graduate Record Examination. This is in addition to a satisfactory score on the GRE Aptitude Test, which is a general requirement for admission to the Graduate School.

The plan of study for all students in the Structural Engineering Program must include ME 3501, ME 3502, CE 3503, CE 3505, CE 3533, and either CE 3525 or CE 3532. Additionally, each student must complete one semester of a one-hour seminar (CE 1595).

The plan of study for students enrolled in the Environmental Studies Program will be individually developed for each student through consultation with the student's advisor.

*Prerequisite:* Twelve semester hours of advanced courses in Engineering and a Bachelor's Degree.

**3502 Ground Water Hydrology (3-0)**

Ground water occurrence and flow of fluid through porous media such as seepage and hydraulics of wells. *Prerequisite:* Approval of the instructor.

**3503 Engineering Analysis (3-0)**

Formulation and solution of initial and boundary value problems arising in structural mechanics. *Prerequisite:* MATH 3326.

**3504 Advanced Reinforced Concrete (3-0)**

Review of fundamental behavior of reinforced concrete beam and column elements. Design of reinforced concrete systems in accordance with ACI Code. Topics may include two-way slabs, plates, shells, continuous beams, frames, prestressed concrete, composite design. *Prerequisites:* CE 3435, CE 4460.

**3505 Advanced Structural Analysis (3-0)**

Theory of finite element approximation, numerical solutions of a variety of problems in structural mechanics including beam-columns, grid beams and plates on linear and nonlinear foundations; matrix structural analysis. May be repeated for credit. *Prerequisite:* CE 3343 or approval of instructor.

**3506 Advanced Soil Mechanics I (3-0)**

Stress and strain, rigid and flexible footings, stress in soil due to various types of loading, pore water pressure parameters, consolidation, sand drain, settlement analysis, permeability, seepage, dewatering. *Prerequisite:* CE 3448.

**4508 Bioengineering Processes (3-3)**

Description of biochemical processes involved in complex pollution problems. Energetics of aerobic and anaerobic processes, enzymes, metabolic reactions, synthesis, and theory of biological waste treatment. May be repeated for credit. *Prerequisite:* Approval of instructor.

**4509 Analysis of Water and Wastes (2-6)**

Analysis of physical, chemical, and biological properties of water and wastes; evaluation of processes involved in complex pollution problems. *Prerequisite:* Approval of instructor.

**3512 Plastic Design of Structures (3-0)**

Fundamental principles of plastic design, plastic hinges, method of analysis of structures for ultimate load. Plastic design for axial and shearing forces. Stability problems in plastic design. Design of continuous structures. *Prerequisite:* CE 3461 or approval of instructor.

**3517 Similitude and Statistical Methods (3-0)**

Dimension and model theory and its use in analyzing physical experiments. Applications of probability and statistical analysis. *Prerequisite:* Approval of instructor.

**3520 Advanced Soil Mechanics II (3-0)**

Shear strength, earth pressure calculation on retaining structures, soil bearing capacity theories, stress on shaft and tunnel linings, introduction to bearing capacity on permafrosts, slope stability. *Prerequisite:* CE 3448.

**3521 Industrial Hygiene and Toxicology (3-0)**

Techniques of industrial toxicology; mechanisms by which toxic gases, vapors, and dusts produce disease in experimental animals and in man. *Prerequisite:* Consent of the instructor.

**4522 Advanced Waste Treatment (3-3)**

Advanced problems relating to the treatment of water, sewage, industrial and radioactive wastes. *Prerequisites:* CE 3442 and approval of instructor.

**3525 Design of Structures of Dynamic Loads (3-0)**

Behavior of structural members under dynamic loads. Vibration theory, particular reference to structures, design of structural systems to dynamic loads, wind loads, and earthquakes. *Prerequisite:* CE 4460 or equivalent.

**3526 Air Pollution Control (3-0)**

Effects of air pollution, classification of wastes, meteorological factors; sampling and analysis; abatement; statistical analysis.

**4527 Contemporary Topics in Surveying (3-3)**

Selected topics of current interest in modern surveying. May be repeated for credit when topic varies. *Prerequisite:* Approval of instructor.

**3528 Contemporary Topics in Urban Engineering (3-0)**

Selected topics of current interest in urban engineering. May be repeated for credit when topic varies. *Prerequisite:* Approval of instructor.

**3529 Contemporary Topics in Structures (3-0)**

Selected topics of current interests in structural engineering. May be repeated for credit when topic varies. *Prerequisite:* Approval of instructor.

**3530 Contemporary Topics in Geotechnical Engineering (3-0)**

Selected topics of current interest in soil mechanics. May be repeated once for credit when topic varies. *Prerequisite:* Approval of instructor.

**3531 Contemporary Topics in Water/Air Resources (3-0)**

Selected topics of current interest in urban engineering. May be repeated for credit when topic varies. *Prerequisite:* Approval of instructor.

**3532 Modern Methods of Engineering Computations (3-0)**

Methods of iterations, approximations, and numerical procedures used in solution of complex problems and optimizations such as occur in Engineering Design and Scientific Analysis. *Prerequisite:* Approval of instructor.

**3533 Plates and Shells (3-0)**

The theory and design of plates and shell structures by the membrane and bending stress theories. *Prerequisite:* ME 3502.

**3534 Sewage Treatment Plant Design (3-0)**

Design calculations for conventional physical and biological treatment processes are emphasized. A small-scale design project may be included. *Prerequisite:* CE 450B or consent of instructor.

**1595-3595 Graduate Seminar (3-0)**

Conferences, discussions and/or research, individual or collective, on advanced phases of engineering problems conducted under the direct supervision of a faculty member. Variable credit, and may be repeated for credit to total six credits. *Prerequisite:* Approval of the instructor.

**3598-99 Thesis Course for the Master's Degree****ELECTRICAL ENGINEERING**

301 ENGINEERING SCIENCE COMPLEX  
(915)747-5470

**CHAIRMAN:** Stephen Riter

**PROFESSOR EMERITUS:** Clyde R. Nichols

**PROFESSORS:** Austin, Pierluissi, Riter, Smith

**ASSOCIATE PROFESSORS:** Gibson, Liu, McDonald, Mitchell, Manoli, Schroder

**ASSISTANT PROFESSORS:** Tomiyama, Williams

**SENIOR RESEARCH SCIENTIST:** Izquierdo

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.

**1209 Computation Laboratory (1-2)**

Introduction to analog computer components and analog computation, laboratory use of EE Department's digital computer facilities, its operating system and utility programs. *Prerequisite:* CS 3120 concurrently with EE 3251. *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, Kirchhoff'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 3120.

**2310 Electrical Engineering Laboratory I (1-4)**

Introduction to experimentation and basic laboratory procedures including the measurement of electrical quantities and the use of basic electrical and electronic laboratory instruments. *Prerequisite:* EE 3251. *Laboratory Fee:* \$8.

**2311 Electrical Engineering Laboratory II (1-4)**

Measurement theory, statistics of experimental measurements, experimental data analysis, experiment design, and the laboratory investigation of various electrical devices and systems. *Prerequisite:* EE 2310. *Laboratory Fee:* \$8.

**3321 Electromagnetic Field Theory (3-0)**

Fundamentals of static electric and magnetic fields, time-varying fields and Maxwell's equations, motion of charged particles in electromagnetic fields. *Prerequisite:* EE 3251.

**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. *Prerequisite:* EE 3339.



**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 3120 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 the protection and 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.

**3389 Digital Systems Design I (2-3)**

Introduction to the design of digital systems. Emphases are on traditional and integrated circuit analyses and design and synthesis of combinational and sequential circuits. Topics also include arithmetic circuits, memory devices, encoders, decoders, and analog-digital conversion. *Prerequisite:* EE 3339 or concurrently. *Laboratory Fee:* \$5. Offered Fall semesters.

**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.

**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 2311. *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. *Prerequisite:* EE 3340.

**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

**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 3347.

**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:* ME 3238 and EE 3352.

**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. Offered Spring semesters.

**3474 Operating System 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)**

Survey of microprocessors and their companion LSI devices. Detailed examination and use of a selected micro-computer with emphasis on programming and interfacing. *Prerequisites:* CS 3332, EE 3442 or concurrently, 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.

**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. *Prerequisite:* Senior standing in engineering or permission of the instructor.

**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.

**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 the minicomputer in analysis and control of power systems. Examples using University and departmental computer facilities. *Prerequisite:* EE 3385 or permission of instructor. Offered Spring semesters.

**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.

**For Graduate Students Only****Departmental Requirements for Master of Science Degree**

An undesignated degree is offered that covers the areas of Civil, Electrical, Mechanical, and Metallurgical Engineering. Special emphasis in the Electrical Engineering Department is placed on instrumentation and measurement systems.

All students are required to take Electrical Engineering 3500, 3501, 3502, and 3515. A thesis will normally be required of all students. As an alternative students may petition the Departmental Graduate Studies Committee for permission to follow a 36 hour option which will include credit for Electrical Engineering 3590-91, Graduate Projects. All but nine hours of degree requirements must be done in 0500 (Graduate) courses. All students are encouraged to include in their program six hours of course work outside their major field.

*Prerequisites:* Twelve semester hours of advanced courses in Engineering and a Bachelor's Degree.

**3500 Advanced Mathematics for Engineers I (3-0)**

Integral equations, probability, random variables, basic random processes, classical optimization techniques. Required of all graduate students in EE. *Prerequisites:* MATH 3335 and 3436 or equivalent.

**3501 Advanced Mathematics for Engineers II (3-0)**

Fundamental mathematical concepts of linear differential equations, linear transformations, vector analysis, Fourier series and integrals, partial differential equations and complex variables. Required of all graduate students in EE. *Prerequisites:* MATH 3335 and 3436 or equivalent.

**3502 Linear Systems Analysis (3-0)**

Analysis of generalized linear systems through a state space approach. Topics include linear algebra, continuous and discrete operational calculus, solution methods, controllability and observability and an introduction to non-linear solutions and stability methods. Required of all graduate students in EE.

**3506 Antenna Theory (3-0)**

Fundamental theory of point sources; the antenna as an aperture; methods of analyzing and calculating characteristics of various types of antennas; self and mutual impedances of antennas; array of linear antennas; antenna measurement technique.

**3507 Modern Control Theory I (3-0)**

State space techniques (continuous case); controllability and observability. Lyapunov's second method; Pontryagin's principle of optimality and dynamic programming, the method of steepest descent; and other optimization techniques.

**3514 Individual Studies**

Conferences, discussions, and/or research on advanced phases of engineering problems conducted under the direct supervision of a faculty member. Only one enrollment permitted for credit toward Master of Science degree.

**3515 Advanced Electromagnetic Theory (3-0)**

Theorems and concepts of uniqueness, equivalence, induction, reciprocity and Green's functions. Application of plane, cylindrical, and spherical wave functions to resonators, waveguide, radiators, apertures, and scatterers. Required of all graduate students in EE.

**3518 Power System Analysis I (3-0)**

Equivalent circuits and characteristics of multi-winding transformers grounding and mutual coupling. Load flow studies. Analysis of balanced and unbalanced conditions in multiphase systems. Sequence impedances of equipment.

**3523 Communication Theory (3-0)**

Transmission of information over noisy channels, coding for reliable transmission, error-detecting and error-correcting codes, modulation schemes.

**3524 Statistical Detection and Estimation Theory (3-0)**

Application of statistical decision theory and estimation theory to problems of modern communication systems, radar and sonar systems, etc. Random signal representations, detection of signals with known and unknown parameters, estimation of signal parameters.

**3527 Optimal Control Theory (3-0)**

Properties of optimal systems, the minimum time, minimum fuel, and minimum energy problems, application of optimization techniques to system design.

**3543 Microwave Engineering (3-0)**

An introduction to the fundamentals of microwave engineering topics includes waveguide transmission, impedance transformation and match-

ing, passive microwave elements, resonant cavities, microwave networks and periodic structures.

**3546 Atmospheric Processes (3-0)**

The fundamental principles of atmospheric physics including structure and composition, radiative transfer, wave propagation and atmospheric circulation.

**3569 Modern Measurement Techniques of Atmospheric Parameters (3-0)**

A survey of measurement systems for the determination of atmospheric parameters. Emphasis is placed on both in situ and remote sensing systems.

**3571 Digital Signal Processing (3-0)**

Properties of discrete signals and systems. Reconstruction of continuous waveforms from discrete signals. FFT, DFT, and Z transforms. Digital filter design for noisy deterministic and stochastic signals.

**3573 Computer Architecture (3-0)**

Selected topics in computer hardware design such as microprogramming, pipeline and multiprocess configurations, memory architectures, and array processing. *Prerequisites:* EE 3473 and 3369.

**3575 Digital System Design (3-0)**

Emphasis on the design of computer hardware and large digital systems where sequential circuit design is impractical. The design process is based on the use of resistor-transfer language and control-sequence design language where a software description is translated into hardware circuitry. Applications to computer and computer based design, including microprocessors.

**3576 Data Acquisition and Processing (3-0)**

Advanced topics in data acquisition, storage, and communications.

**3590-91 Graduate Projects**

Individual design or research under the supervision of a faculty member. A written report is required. Required of all students on non-thesis option.

**1595 Graduate Seminar (1-0)**

Required of all graduate students in electrical engineering during each semester of enrollment as a graduate student. Discussion of various topics by faculty, graduate students, and speakers from industry and other institutions. Not applicable for credit toward degree requirements.

**3596 Advanced Topics in Electrical Engineering (3-0)**

One or more advanced topics in electrical engineering. The subject area may vary from year to year. May be repeated for credit.

**3598-99 Thesis Course for the Master's Degree.**

## MECHANICAL AND INDUSTRIAL ENGINEERING

101 ENGINEERING SCIENCE COMPLEX  
(915)747-5450

ACTING CHAIRMAN: Thomas John McLean

PROFESSOR EMERITUS: Ralph M. Coleman

PROFESSORS: Dowdy, Edwards, Levosky, Whitacre

ASSOCIATE PROFESSORS: Bhaduri, Craver, Herrera, McLean

ASSISTANT PROFESSORS: Hawkins, Hu, Johnson

### MECHANICAL ENGINEERING

For Undergraduates

*General Prerequisite:* Junior standing for all 300 or 400 level courses.

**3104 Preview of Engineering (3-0)**

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.

**3236 Manufacturing Processes (2-3)**

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

**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.

**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. *Prerequisite:* MATH 3212.

**3376 Thermodynamics II (3-0)**

Continuation of ME 3375. Application of principles to 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.

**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 head of the department. *Prerequisites:* Senior standing and permission of the head of the department. 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.

**INDUSTRIAL ENGINEERING****For Undergraduates****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 3217.

**4377 Methods and Human Factors Analysis (3-3)**

A study of work methods and time study analysis with human capabilities and limitations considered in the design of man-machine systems. A semester project is an integral part of the course. *Prerequisite:* Junior standing or permission of instructor. *Laboratory Fee:* \$4.

**For Undergraduates and Graduates****3432 Safety Engineering (3-0)**

A study of a man-machine environment and the accident cause-effect relationship. Provides an analytical 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.

**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:* MATH 3330 or equivalent.

**3491 Production and Inventory Control (4-0)**

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 MATH 3480 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:* MATH 3330 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.

**For Graduate Students Only****Departmental Requirements for Master of Science Degree**

Plan 1 requires twenty-four hours of course work plus a six-hour thesis. Plan 2 requires thirty-six hours of course work without a thesis. An undesignated degree is offered that covers the areas of Civil, Electrical, Industrial, Mechanical, and Metallurgical Engineering. All but nine hours of the work must be done in 0500 (Graduate courses.) All students are encouraged to include in their program six hours of course work outside their major field.

**MECHANICAL ENGINEERING**

*Prerequisite:* Twelve semester hours of advanced courses in Engineering and a Bachelor's Degree.

**3501 Experimental Stress Analysis (2-3)**

Modern techniques for determining state of stress and strain experimentally. The laboratory provides the opportunity to gain practice in the use of these devices and their ancillary equipment. *Prerequisite:* CE 3234 or permission of the instructor. *Laboratory Fee:* \$4.

**3502 Advanced Mechanics of Materials I (3-0)**

An introduction to the theory of elasticity and the principles of stress and strain. Solution of some elasticity problems such as bending and shear of beams, torsion of bars. Energy method and elastic stability. *Prerequisite:* CE 3234.

**3503 Advanced Heat Transfer I — Conduction (3-0)**

Conduction in various coordinate systems: steady and transient-state cases with various boundary conditions; analytical, numerical and graphical solutions. *Prerequisite:* MATH 3326 or permission of instructor.

**3504 Advanced Heat Transfer II — Convection (3-0)**

Thermal boundary-layer theory; forced convection in laminar and turbulent flows; free convection. *Prerequisite:* ME 4354 or permission of instructor.

**3506 Advanced Fluid Mechanics I (3-0)**

Survey of the principle concepts of fluid mechanics, statics, continuity, momentum and energy relations for continuum fluids, kinematics of fluid motion, governing equations for motion of non-viscous fluid, vorticity and circulation, Kelvin's theorem, Helmholtz theorem, Crocco's theorem, stream function, potential flow, conformal transformation, theory of lift, wave phenomena in fluids. *Prerequisite:* ME 4354 or permission of instructor.

**3507 Advanced Fluid Mechanics II (3-0)**

Viscous and turbulent flows. Viscosity and dissipation phenomena, the Navier-Stokes and energy equations; creep flow at low Reynolds numbers, laminar boundary layers, laminar stability, transition and turbulence, turbulent boundary layers, jets, wakes, and separated flows. *Prerequisite:* ME 4354 or permission of instructor.

**3508 Advanced Mechanical Design (2-3)**

Study of the method of optimum design for mechanical systems. Evolution of optimum design, approximation for explicit design; mathematical functions in design, evaluation of the effects of manufacturing errors on product performance, optimum choice for method of analysis, statistical consideration for factor of safety; adequate design, optimum design, design equations; normal redundant and incompatible specifications; loose limits and loose specifications; problems with more than one primary design equation.

**3509 Structural Dynamics (3-0)**

Continuation of ME 4465 with emphasis on multiple-degree-of-freedom systems and their response to disturbances. Normal mode theory, matrix representation of problem; Laplace transform, electrical analogue and mobility techniques of solution. Vibration measurements and analysis. *Prerequisite:* ME 4465 or permission of instructor.

**3510 Advanced Thermodynamics (3-0)**

Applications of general thermodynamic relations; study and applications of time-dependent energy relationships; analysis of power, refrigeration, cryogenic and direct energy conversion systems. *Prerequisite:* ME 3376 or permission of instructor.

**3512 Advanced Mechanics of Materials II (3-0)**

Traditional approach to mechanics of materials with topics such as failure theories, fatigue, beams on an elastic foundation, stress concentrations, thick-walled and laminated cylinders, contact stresses, and inelastic behavior. *Prerequisite:* ME 3502.

**3513 Advanced Fluid Mechanics III (3-0)**

Compressible flow; energy, continuity and momentum principles applied to compressible fluid flows; one, two, and three dimensional subsonic, supersonic and hypersonic flow; normal and oblique shocks; method of characteristics; mixed flows; hodograph method; compressible laminar and turbulent boundary layers. *Prerequisite:* ME 3455 or permission of instructor.

**3518 Advanced Dynamics (3-0)**

Velocity and acceleration analysis, motion of a point in space, rotating coordinate systems, balancing of masses; generalized coordinates, work and energy, impulse and momentum. *Prerequisite:* ME 3238 or equivalent.

**3519 Dynamics of Flight (3-0)**

Aerodynamic forces and moments of aircraft and missiles. Static stability and control. Equations of motion for flight vehicles.

**1595-3595 Graduate Seminar**

Conferences, discussions and/or research, individual or collective, on advanced phases of engineering problems conducted under the direct supervision of a faculty member. Variable credit, and may be repeated for credit to total 6 credits. *Prerequisite:* Permission of instructor.

**3598-99 Thesis Course for the Master's Degree****INDUSTRIAL ENGINEERING****3551 Quantitative Methods (3-0)**

Engineering statistical and numerical methods used in the analysis and management of industrial systems. The use, rather than the theoretical development, is emphasized. *Prerequisite:* Permission of instructor.

**3552 Statistical Quality Control and Reliability II (3-0)**

Continuation of IE 3485. Variables sampling plans, economic design of sampling plans, reliability mathematics, system reliability. *Prerequisite:* IE 3485 or permission of instructor.

**3554 Advanced Engineering Economy (3-0)**

Capital budgeting, income tax considerations, probabilistic engineering economy, utility theory, current economy topics. *Prerequisite:* CE 3326 or permission of instructor.

**3555 Current Topics in Industrial Engineering (3-0)**

Selected topics of current interest in industrial engineering. May be repeated for credit when topic varies. *Prerequisite:* Permission of instructor.

**3556 Advanced Operations Research Methods (3-0)**

Use and sensitivity analysis of deterministic and probabilistic linear and non-linear mathematical programming; search techniques for one and two variable functions. *Prerequisite:* IE 3389 or permission of instructor.

**3557 Computer Simulation Applications (2-3)**

An introduction to the concepts of simulation methodology as applied to the design and analysis of industrial systems. Specialized computer simulation language is applied to an industrial analysis or design term project. *Prerequisite:* Permission of instructor.

**3558 Advanced Industrial Optimization (3-0)**

Man-machine system optimization, queuing and inventory systems and their sensitivity, production scheduling, line balancing.

**1595-3595 Graduate Seminar**

Conferences, discussion and/or research, individual or collective on current and/or advanced IE problems conducted under the supervision of a graduate faculty member. *Prerequisite:* Permission of instructor.

**3596-97 Graduate Project (3-0)**

Individual research, design, or analysis under the supervision of a member of the graduate faculty demonstrating the application of industrial engineering technique to a problem of major scope. A written report is required of students selecting the report option in lieu of thesis. *Prerequisite:* Permission of graduate advisor.

**3598-99 Thesis Course for Master's Degree**

## METALLURGICAL ENGINEERING

201 Engineering Science Complex  
(915)747-5468

CHAIRMAN: Walter W. Fisher

PROFESSOR EMERITUS: Joseph C. Rintelen, Jr.

PROFESSORS: Abernethy, Guard

ASSOCIATE PROFESSORS: Fisher, Roser, Stafford

For Undergraduates

*General Prerequisite:* Junior standing for all 300 or 400 level courses.

**3101 Introduction to Metallurgy I**

An elementary course in the extraction of metal from ores, and the industrial application of metals and alloys. Open to all students.

**3203 Materials Selection (3-0)**

A solid state study concerned with the physical and mechanical properties of metals, plastics, and ceramics. *Prerequisite:* Sophomore standing.

**1203 Materials Selection Laboratory (0-3)**

Practical experience in materials selection problems including failure analysis and laboratory techniques for materials evaluation. *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, Chemistry 3106, and Computer Science 3120 or concurrent.

**3206 Rate Processes in Metallurgical Engineering (3-0)**

A study of rate laws, order of reactions, steady state, catalysis, rate determining steps, and the energetics and kinetics of metallurgical processes. *Prerequisites:* Metallurgy 3101 and Mathematics 3212.

**3208 Applied Thermodynamics (3-0)**

A continuation of the study of thermodynamics applied to metallurgical and chemical systems. Topics include entropy, thermodynamic functions, phase and chemical equilibria, and application of the third law. *Prerequisite:* MET 3205.

**3302 Mineral Engineering (3-0)**

A discussion of the principles of mineral economics, mineral processing, ore testing, mill and flow sheet design and the applications to the processing of ore minerals. *Prerequisites:* Metallurgy 3205 and Metallurgy 3206.

**3310 Thermodynamics of Solids (3-0)**

Application of the principles of statistical and classical thermodynamics to solids.

**4304 Process Metallurgy I (3-3)**

Basic engineering principles involved in the production of ferrous metals from ores and concentrates or other raw materials. Typical topics are blast furnace operations, refractories, and furnace design, and melting practices in steel making operations. *Prerequisites:* Metallurgy 3205, 3206 or permission of instructor.

**4305 Process Metallurgy II (3-3)**

Physical and chemical principles in the extraction and production of non-ferrous metals. Topics to include mineral beneficiation, leaching, pyrometallurgical and electrometallurgical production methods. *Prerequisites:* Metallurgy 3205, 3206 or permission of instructor.

**4306 Physical Metallurgy I (3-3)**

Application of the basic concepts and methods of metallurgical engineering to physical metallurgy. Topics will include crystallography; dislocation theory; diffusion in metals and alloys; recovery, recrystallization, and grain growth and equilibrium in alloys. *Prerequisite:* MET 3206. *Laboratory Fee:* \$6.

**4307 Physical Metallurgy II (3-3)**

Application of the concepts and methods of metallurgical engineering to physical metallurgy. Topics will include solidification, TTT and Pearlitic transformations, precipitation hardening, martensitic reactions, gas-solid, solid-solid reactions and dispersion hardening. *Prerequisite:* MET 3206. *Laboratory Fee:* \$6.

**4403 Hydrometallurgy (3-3)**

The principles of hydrometallurgy and electrometallurgy are introduced from the unit operations standpoint with emphasis being placed on the underlying physical and chemical principles. Illustrative examples are chosen to provide a general knowledge of current commercial processes. *Prerequisites:* Metallurgy 4304-05.

**3409 Corrosion (3-0)**

A study of corrosion, passivity, and protection of metals and alloys. *Prerequisite:* MET 3206.

**4411 Process Design and Control (3-3)**

A study of metallurgical and chemical processes using kinetics, thermodynamic and economic principles. The dynamic behavior of processes and reactors and principles of process control will be examined. *Prerequisites:* Mechanical Engineering 3305 and senior standing.

**3412 Microscopy (2-3)**

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

**3413 X-Ray (2-3)**

An introduction to X-ray diffraction, spectroscopy analysis, and interpretation of results obtained will be stressed. *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 metalmaking, non-destructive testing techniques and related subjects. *Prerequisite:* MET 3203. *Laboratory Fee:* \$6.

**3416 Failure Analysis (2-3)**

The mechanisms of materials failure, failure analysis techniques and non-destructive testing methods will be studied. *Prerequisites:* MET 3203 and CE 3234.

**1471-3471 Special 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. *Prerequisites:* Senior standing and consent of the head of the department. May be repeated for credit up to 6 hours.

**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.

**For Graduate Students Only**

**Departmental Requirements for Master of Science Degree**

Plan 1 requires twenty-four hours of course work plus a six-hour thesis. Plan 2 requires thirty-six hours of course work without a thesis. An undesignated degree is offered that covers the areas of Civil, Electrical, Mechanical, and Metallurgical Engineering. All but nine hours of the courses must be done in 500-level (Graduate) courses.

*Prerequisite:* Twelve semester hours of advanced courses in Engineering and a Bachelor's Degree.

**3541 Metallurgical Analytical Procedures (2-3)**

A survey and application of the principal concepts and techniques used to analyze metallurgical variables using tools such as the TGA, the Potentiostat, the SEM, the microprobe and computer processed data. *Laboratory Fee:* \$6. Offered Fall semesters.

**3542 Advanced Topics In Process Metallurgy (3-0)**

An in-depth study concerning selected topics such as electro-winning and refining, electroplating, corrosion, and oxidation, hydrometallurgy and pyrometallurgy. Offered Spring semesters.

**3543 Utilization of Materials (3-0)**

Contemporary topics in the utilization of materials. Special applications of new materials and an in-depth study of certain of the theoretical concepts will be made. May be repeated twice for credit when the topic varies. Offered Spring semesters.

**3544 Concepts of Process Simulation (3-0)**

Advanced programming techniques, statistics, design of experiments, process simulation and data analysis on topics of current interest. Offered Summer sessions.

**3545 Advanced Topics In Fabrication Procedures (3-0)**

Topics may include welding, power metallurgy, casting, forming, heat treatment, high energy rate forming, composite materials and the effects that fabrication have on mechanical and physical properties. May be repeated twice for credit when topic varies. Offered Fall semesters.

**1595-3595 Graduate Seminar**

Conferences, discussions and/or research, individual or collective, on advanced phases of engineering problems conducted under the direct supervision of a faculty member. Variable credit, and may be repeated for credit to total 6 credits. *Prerequisite:* Permission of instructor.

**3598-3599 Thesis Course for the Master's Degree**

**COMPUTER SCIENCE**

There are three options that lead to the Bachelor of Science in Computer Science degree at U. T. El Paso; they are referred to as the Business, the Computation, and the Computer Systems options. All three options are designed to present the principles underlying the design and operation of computer systems, the theory and design of software systems, and the application of computers to practical problems. Each option places an emphasis on different applications of the computer. To support the education of students in computer science, the University maintains excellent computer facilities. Information about the program may be obtained from the Electrical Engineering Department.

**MATHEMATICS AND ENGLISH PREPARATION**

No courses in mathematics that are considered by the University to be preparatory to the first mathematics course listed in the degree plan for the student's chosen option may be counted toward this degree. English 3110 may not be counted toward a degree in any of the options.

**TRANSFER STUDENTS**

The general University regulations governing the acceptability of transfer credits apply to all three Computer Science options. In addition, credit for an upper division course will be

**The Business Option**

The Business option includes courses covering programming languages used in data processing; accounting, economics and management principles; the design techniques for developing large computer programs, and specialized techniques for data base management and business information systems.

**Freshman Year**

1st Semester	Hrs.
ENGL 3111 + Freshman English .....	3
HIST 3101 Hist. of U.S. to 1865 .....	3
POSC 3110 Amer. Gov't & Politics.....	3
MATH 3120 + Business Algebra .....	3
Social Science Elective.....	3
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	15

given on the basis of competency examination administered by the appropriate option. Transfer students may be required to take specified courses, as determined by their advisor, in order to establish the quality of their degree.

**CHANGE OF MAJOR**

If a student changes his major to Computer Science, the curriculum of his chosen option will apply and recommendations regarding substitutions are the responsibility of the student's advisor. Approval of these substitutions must be obtained from the Dean of Engineering.

**THE "C" RULE**

Each option has a number of courses in which the student must earn a "C" or better. If a student earns less than a "C" in one of these courses, before a course can be taken having it as a prerequisite, it must be retaken until at least a "C" is earned.

**APPROVED ELECTIVES**

Each option has a number of approved electives that fall into the categories defined in the notes following the option's degree plan. A list of approved electives will be maintained for each of these categories and kept in the Office of the Electrical Engineering Department.

2nd Semester	Hrs.
ENGL 3112 + Freshman English .....	3
HIST 3102 Hist. of U.S. since 1865 .....	3
POSC 3111 Amer. Gov't & Politics.....	3
CS 3125 Intro. to Computers.....	3
MATH 3201 + Calculus .....	3
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	15

**Sophomore Year**

1st Semester	
ACCT 3201 + Prin. of Accounting .....	3
ECON 3202 + Prin. of Economics .....	3
CS 3225 + Intro. to COBOL Programming .....	3
STAT 3201 Fund. of Statistics .....	3
Approved Elective.....	3
	15

2nd Semester	
ACCT 3202 + Prin. of Accounting .....	3
ECON 3204 + Prin. of Economics .....	3
CS 3325 + Advanced COBOL.....	3
CS 3330 + Structured Programming .....	3
STAT 3301 Intermediate Statistics .....	3
Approved Elective.....	3
	18

**Junior Year**

1st Semester	
MGMT 3300 Intro. to Management.....	3
ADMS 3308 Business Communications .....	3
CS 3120 Intro. to Dig. Comp. ....	3
MKT 3300 Prin. of Marketing .....	3
Natural Science Elective.....	3
Approved Elective.....	3
	18

2nd Semester	
MGMT 3310 Organization Behavior.....	3
CS 3332 Assembler Programming .....	3
CS 3345 Systems Analysis/Design.....	3
CS 3340 Data Structures.....	3
Natural Science Elective.....	3
Approved Elective.....	3
	18

**Senior Year**

1st Semester	
FIN 3310 Business Finance .....	3
MGMT 3482 Mgt. Info. System .....	3
EE 4360 Computer Organ. & Design .....	4
CS Elective* .....	3
Business Elective (Upper Division) .....	3
	16

2nd Semester	
CS 3442 Data Base Mgt.....	3
BLAW 3301 Intro to Business Law .....	3
MGMT 3480 DP Management.....	3
Elective* .....	3
Business Elective (Upper Division) .....	3
	15

TOTAL SEMESTER CREDIT HOURS . . . 130

+ Grade of "C" or better required.

\*Approved Upper Division Computer Science elective.

**The Computation Option**

The Computation option concentrates on algorithm design and analysis. This includes both numerical problems and such non-numerical applications as programming language processors; thus, there is an emphasis on mathematics.

**Freshman Year**

1st Semester		Hrs.
MATH 4111 + Calculus .....	4	
POSC 3110 American Gov't.....	3	
ENGL 3111 + Freshman English .....	3	
Approved Electives.....	6	
	16	

2nd Semester		Hrs.
ENGL 3112 + Freshman English .....	3	
POSC 3111 American Gov't.....	3	
MATH 3212 + Calculus .....	3	
CS 3120 + Digital Computation .....	3	
Approved Elective.....	3	
	15	

**Sophomore Year**

1st Semester		Hrs.
PHYS 4216 + Mechanics and Thermodynamics .....	4	
PHYS 1120 + Physics Lab I .....	1	
MATH 3217 + Calculus .....	3	
ENGL 3369 Technical Writing.....	3	
HIST 3101 Hist. of U.S. to 1865 .....	3	
CS 3330 + Programming Languages.....	3	
	17	

2nd Semester		Hrs.
MATH 3323 Linear Algebra .....	3	
MATH 3325 Intro. to Algebra .....	3	
PHYS 4211 + Fields and Waves.....	4	
PHYS 1121 + Physics Laboratory II.....	1	
HIST 3102 Hist. of U.S. since 1865 .....	3	
CS 3332 + Assembler Programming .....	3	
	17	

**Junior Year**

1st Semester		2nd Semester	
MATH 3441 Intro. to Analysis.....	3	EE 3473 Minicomputers.....	3
MATH 3330 Probability.....	3	MATH 3480 Statistics I.....	3
EE 4360 Computer Organization.....	4	CS 3335 Systems Programming.....	3
Technical Elective#.....	3	CS 3340 Data Structures.....	3
Approved Elective.....	3	Technical Elective#.....	3
	<hr/>		<hr/>
	16		15

**Senior Year**

1st Semester		2nd Semester	
CS 3350 Automata Theory.....	3	CS 3452 Compiler Construction.....	3
MATH 3429 Numerical Methods.....	3	Upper Division CS Elective.....	3
Technical Elective#.....	3	Technical Electives.....	6
Upper Division CS Elective.....	3	Approved Elective.....	3
Approved Elective.....	3		
	<hr/>		<hr/>
	15		15

TOTAL SEMESTER CREDIT HOURS . . . 127

+ Grade of "C" or better required.

#Approved upper division elective from Science, Mathematics, Engineering, or Computer Science.

**The Computer Systems Option**

The Computer Systems option stresses the design and evaluation of the hardware and software needed to accomplish a specified task. It is design-oriented and places an emphasis on science and engineering.

**Freshman Year**

1st Semester	Hrs.	2nd Semester	Hrs.
ENGL 3111 + Freshman English.....	3	ENGL 3112 + Freshman English.....	3
CHEM 3105 General Chemistry.....	3	MATH 3212 + Calculus.....	3
MATH 4111 + Calculus.....	4	CS 3120 + Digital Computation.....	3
Approved Humanities & Social Science Electives.....	6	CHEM 3106 General Chemistry.....	3
	<hr/>	POSC 3110 Amer. Gov't. & Politics.....	3
	16		<hr/>
			15

**Sophomore Year**

1st Semester		2nd Semester	
MATH 3217 + Calculus.....	3	MATH 3326 + Differential Equations.....	3
CS 3330 + Prog. Languages.....	3	CS 3332 + Assembler Programming.....	3
PHYS 4210 + Mechanics and Thermodynamics.....	4	PHYS 4211 + Fields and Waves.....	4
PHYS 1120 + Physics Laboratory I.....	1	PHYS 1121 + Physics Laboratory II.....	1
ENGL 3369 Technical Writing.....	3	HIST 3102 Hist. of U.S. since 1865.....	3
HIST 3101 Hist. of U.S. to 1865.....	3	EE 3251 Networks I.....	3
	<hr/>	EE 1209 Basic Elec. Engr. Lab.....	1
	17		<hr/>
			18

**Junior Year**

1st Semester		2nd Semester	
MATH 3323 Linear Algebra.....	3	MATH 3480 Statistics I.....	3
MATH 3330 Probability.....	3	CS 3340 Data Structures.....	3
EE 4360 Computer Organization.....	4	CS 3335 Systems Programming.....	3
POSC 3111 Amer. Gov't & Politics.....	3	EE 3473 Minicomputers.....	3
Technical Elective#.....	3	Technical Elective#.....	3
	<hr/>		<hr/>
	16		15



**Senior Year**

1st Semester	
MATH 3429 Numerical Methods.....	3
Upper division CS Elective .....	3
Approved Humanities and Social Science Elective.....	3
Technical Electives# .....	6
	<hr/>
	15

2nd Semester	
CS 3442 Data Base Management.....	3
Upper division CS Elective .....	3
Technical Elective# .....	3
Approved Humanities and Social Science Elective.....	3
EE 3474 Operating System Design .....	3
	<hr/>
	15

TOTAL SEMESTER CREDIT HOURS . . .127

+ Grade of "C" or better required.

#Approved Upper Division elective from Science, Mathematics, Engineering, or Computer Science.

**COMPUTER SCIENCE**

301 Engineering Science Complex  
(915) 747-5470

PROGRAM CHAIRMAN: Stephen Riter

For Undergraduates

**1104 Time-Sharing (1-0)**

An introduction to time-sharing computer systems utilizing the time-sharing facilities at UTEP. Includes a study of the BASIC program language. *Prerequisite:* Open to all students.

**2202 Small Business Computing and RPG Programming (2-0)**

An introduction to computer hardware and software concepts and programming techniques using the Report Program Generator (RPG) for business applications. *Prerequisite:* None.

**3100 Computers, Information, the Individual and Society (3-0)**

An introduction to computers and their impact on the individual, business, government and society in general. The basic structure of information systems, their implementation, application and uses, abuses, including computer crime and the threat to privacy, and the needs and implementation of public policy to control abuses in the information industry. May not be counted toward major in Computer Science.

**3110 Introduction to Computer Programming (3-0)**

Introduction to FORTRAN programming, including the development of FORTRAN subroutines. Designed for students not engaged in mathematically-oriented studies. *Prerequisite:* MATH 3109 or equivalent.

**3120 Introduction to Digital Computation (3-3)**

A detailed study of the FORTRAN language with applications to selected numerical methods. Includes an introduction to computers, computer organization, and the BASIC language. Required for all Computer Science majors. *Prerequisite:* MATH 4111 or MATH 3201 concurrently.

**3125 Introduction to Computers (3-0)**

An introduction to computer systems including hardware, software and Management information system concepts and a familiarization of the business data processing environment, problems and opportunities. Includes coverage of the BASIC programming language to attain a reasonable level of computer literacy. *Prerequisite:* None.

**3225 Introduction to Structured COBOL Programming (3-0)**

Introduction to structured COBOL programming with primary emphasis on business applications. *Prerequisite:* CS 3125 or CS 3120.

**3310 Research Techniques with FORTRAN (3-0)**

Includes a detailed study of FORTRAN together with applications involving statistics and numerical methods. Emphasis will be on actual programming with problems being selected from a variety of research areas. *Prerequisite:* Math 3109.

**3325 COBOL Programming (3-0)**

An advanced coverage of the COBOL language including sequential and direct access file concepts, sorting and search techniques, and the report writer feature. Administrative applications in accounting, payroll, personnel, inventory control and purchasing are covered. *Prerequisite:* CS 3125 or CS 3120

**3330 Structured Programming (3-0)**

The concepts of structured programming are presented using the PASCAL programming language. Particular emphasis will be placed on producing readable, modifiable and verifiable codes. Techniques of documentation and error detection will be presented. *Prerequisite:* CS 3120.

**3332 Assembler Language Programming (3-3)**

Computer structure, machine language, instruction execution, and addressing techniques. Symbolic coding and assembly systems. Program segmentation and linkage. *Prerequisite:* CS 3330 or a good understanding of at least one high-level language.

**3335 Systems Programming (3-0)**

Input-Output programming; interrupt handling routines; design of linkers and loaders, assemblers, macro processors and debugging systems. Operating systems and control language. *Prerequisite:* CS 3332.

**3340 Data Structures (3-0)**

Basic representation of data. Linear and linked lists, trees and graphs. Storage allocation and collection. Symbol tables. Sorting and searching techniques. *Prerequisite:* CS 3330.

**3345 Systems Analysis and Design (3-0)**

Development of systems analysis and design techniques for the management of the systems life cycle. Topics include requirements analysis, project planning, system design, and programming specifications. The primary emphasis is on top-down structured design using data flow diagrams and modular decomposition to achieve effective input, output, data base, and processing designs. *Prerequisite:* CS 3325 or CS 3330.

**3350 Automata Theory 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 limitations. *Prerequisites:* MATH 3323 and CS 3330.

**3425 The Application Programming Environment (3-0)**

Coverage of COBOL programming style, standards and debugging techniques, software, quality testing, core dump analysis, maintenance andabend debugging, system utilities, and JCL. *Prerequisite:* CS 3325.

**3430 Design and Implementation of Programming Languages (3-0)**

Concepts to be covered include language definition and structure, data types, control structure, run-time binding characteristics and interpretive languages. Examples will be presented in several languages to emphasize the implementation to the various features of languages. *Prerequisite:* CS 3330.

**3442 Data Base Management (3-0)**

Coverage of hierarchical, network, and relational approaches to data base management. Construction of schemes, dictionaries and queries using a generalized data base management system. Data integrity, security, and availability are emphasized. *Prerequisites:* CS 3340 and CS 3325.

**3445 Advanced Systems Design (3-0)**

Advanced study in systems and program design. Topics include PSL/PSA, SADT, composite design and modular top-down systems design emphasizing factoring and decoupling methodologies and program quality. A term project in designing a system for a major business application is required. *Prerequisites:* CS 3345, MGMT 3482 and senior standing.

**3450 Systems Simulation (3-0)**

Introduction to the topic and techniques of systems simulation. Topics include modeling, continuous-system and discrete system simulation, and the simulation languages GPSS and SIMSCRIPT. *Prerequisites:* CS 3325 or CS 3120 and STAT 3201 or MATH 3280.

**3452 Compiler Construction (3-0)**

The structure of compilers and interpreters. Lexical analysis, syntax analysis and the formal description of programming languages. Semantic analysis, intermediate languages, and optimization. Compiler writing languages and bootstrapping. *Prerequisites:* CS 3330 and CS 3340.

**1471-3471 Computer Science Problems Seminar (1-0, 2-0, 3-0)**

Original investigation of special problems in the student's area of interest. The problem to be selected by the student with the approval of the Director of Computer Science. *Prerequisite:* Senior standing or consent of the Director of Computer Science. May be repeated to a maximum of 6 credit hours.

**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. *Prerequisites:* CS 3335 and CS 3340.

**3495 Special Topics in Computer Science (Theory of Algorithms) (3-0)**

Selected topics of current interest in Computer Science. May be repeated once for credit when topic varies. *Prerequisite:* Senior standing in Computer Science or permission of instructor.

**-01 Theory of Algorithms**

Treatment of subroutines, recursion, co-routines, trace routines, simulators, multiple buffering, computer sorting algorithms.

**-02 Computer Networks**

Functional review of computer systems, interfacing, and multiple processing.

**-03 Advanced Software Design**

Concepts of design and implementation of programs, filters, file maintenance, editors, etc.

**-04 Computer System Evaluation**

Basic characteristics and limitations of computing techniques due to architecture and hardware design, system performance.



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

**Diana S. Natalicio, Dean**  
**Randolph H. Whitworth, Assistant Dean**  
**Kenton J. Clymer, Assistant Dean**

**Liberal Arts Building 350**  
**(915) 747-5666**

**The College of**  
**Liberal Arts**

## LIBERAL ARTS

### INTRODUCTION

The College of Liberal Arts is the largest of the seven colleges and offers a wide variety of programs in Fine Arts, Humanities, and Social and Behavioral Sciences. The Bachelor of Arts degree is designed to provide the student with exposure to many disciplines, as well as intensive coursework in his or her major field and to produce a graduate with a broad, general education as well as specialized training in the major. The student wishing to pursue studies in Fine Arts may major in Art, Music, Drama, or Mass Communications. Degree programs in the Humanities include English, History, Linguistics, Modern Languages, Philosophy, and Speech. The Social and Behavioral Sciences offer degrees in Criminal Justice, Political Science, Psychology, Social Work, Sociology, and Anthropology. In addition, interdisciplinary programs are available in Chicano Studies and Latin American and Border Studies as well as courses in Military Science and Religion.

### BACHELOR OF ARTS

Requirements for the Bachelor of Arts degree are designed to offer students a large measure of freedom in the choice of courses and at the same time to maintain a unifying pattern for the education of all undergraduate Liberal Arts students.

1. Complete a minimum of 123 semester hours, including at least 36 hours at the advanced level (300-400). Twenty-four of the last 30 hours required for the degree must be taken in residence.
2. Complete 30-38 semester hours of *Required Courses*, as follows:
  - 6-8 English Composition 3111 (or 6111)-3112; Linguistics 4112-4113.
  - 6 Any combination from English 3211, 3212 (NOTE: These two courses are *required* of all English majors; they may, however, be taken by non-majors as well), 3213, 3214, 3215, 3216, 3218; History 3201, 3202; French 3301, 3303, German 3301, 3303; Spanish 3301, 3302, 3303, 3304; Russian 3301, 3303. Transferred credit in history or foreign language may not be used to satisfy this requirement.
  - 6 History 3101-3102 or History 3103-3104
  - 6 Political Science 3110-3111.
- 6-14 Complete sophomore year of a modern foreign language offered by the Department of Modern Languages. See paragraph 5, below.

Credit counted under *Required Courses* may not also be used to satisfy *Elective Block* requirements.

Unless English 3110 is completed by advanced placement, the course must be taken each time the student enrolls until it is passed; thereafter, unless English 3111 is completed by advanced placement, the course must be taken each time the student enrolls until it is passed. Thereafter, unless English 3112 is completed by advanced placement, the course must be taken each time the student enrolls until it is passed.

3. Complete a major prescribed by an academic department in the College of Liberal Arts or in the College of Science of at least 24 semester hours, of which at least 12 semester hours must be at the advanced (300-400) level. A major may also be completed in Business Administration (Accounting and Business options), Economics or Finance. Variations from these general requirements are listed under each department's Course Descriptions. Nine of the advanced hours must be completed in residence within three years prior to the date of graduation. One-hour courses may not be counted toward the minimum 24 hours required in the major, with the exception that the Dean of the

College of Liberal Arts may approve certain one-hour courses taught in the College of Science. 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 average of C (2.0) in the major. If a course is repeated, the last grade is used in computing this average.

4. Complete the following *Blocks of Electives*:
  - 6 Block A Fine Arts: Art, Drama, Music
  - 12 Block B Social Sciences: Anthropology, Economics, Political Science, Psychology, Sociology, Social Work
  - 15 Block C Humanities: English, Foreign Languages, History, Philosophy, Speech
  - 12 Block D Natural Sciences and Mathematics: Biology, Chemistry, Geology, Mathematics, Physics

No student may present courses from only one subject matter area to fulfill all requirements of Block B, C, or D. A course taken to meet the requirements of one Block cannot also be counted to satisfy requirements in another Block. With certain exceptions, one-hour courses cannot be used to satisfy *Elective Blocks*.

Upon recommendation by a student's academic advisor and approval by the Dean, certain courses in Linguistics may be counted in Blocks B and C; certain courses in Mass Communication in Blocks A, B, and C; certain Speech Pathology courses in Block B, and certain religion courses in Block C. See departmental course listing for specific suggestions. Geography courses which are chiefly social, cultural, or economic will normally be counted in Block B. Physical geography and geomorphology, taught in the Department of Geological Sciences, will ordinarily be counted in Block D.

Students who have completed at least two high school units in any subject, with superior grades, are encouraged to take appropriate College Entrance Examination Board tests. Credit thus earned may be applied toward completion of *Required Courses*, *Elective Block* requirements, or *Free Electives*. If taken in high school, the CEEB tests are called "Achievement Tests"; if taken at the University Counseling Service, they are called "College Placement Tests." The latter should be completed during the first summer session or semester of enrollment at U.T. El Paso.

5. Complete the sophomore year (language courses numbered 3201-02 or 3203-04) of a foreign language offered in the Department of Modern Language. With the Dean's approval, credit earned by examination for advanced standing may be used to meet this requirement. A student who has for at least two years attended a high school where instruction is not conducted in English, and who has graduated from that school or another in the same foreign country, may petition the Dean of Liberal Arts for exemption from foreign language study.
6. Complete additional courses as prescribed by the department of the major.
7. Complete *Free Electives* as needed to bring the total semester hours of credit to at least 123. Any undergraduate course offered by an academic department in any College of the University may be counted as a Free Elective, provided that the credit cannot also be used in meeting any other requirement. Courses taken in the department of the major which are not needed to meet the requirements of the major may be counted as Free Electives. Free Electives of advanced (300-400) level, with the exception of most one-hour courses, are applied toward satisfaction of the requirement of 36 advanced hours.
8. Not more than 6 hours of credit in one-hour courses, excluding certain laboratory courses in the College of

Science and specific content courses in Music, may be counted toward a degree.

9. Graduate (500 level) courses cannot be used to meet any requirement for the Bachelor of Arts degree; such courses must be reserved for graduate credit and may only be taken by undergraduates with the prior approval of the Dean of the Graduate School.

### TEACHER CERTIFICATION WITH A B.A. DEGREE

The Bachelor of Arts *All-Levels Teaching Program* in Art and the Bachelor of Music *All-Levels Teaching Program* in Music are outlined elsewhere in this section of the catalog. Students who plan to teach other subjects in public high schools, and who wish to earn a Bachelor of Arts degree should confer with the Dean of the College of Liberal Arts concerning degree requirements and the Certification Officer in the College of Education concerning teacher certification requirements. In most cases, completion of the baccalaureate degree satisfies Academic Foundation requirements for teacher certification. If the major subject is one of the Teaching Fields listed under Plan I, College of Education, the B.A. Major normally provides most, if not all, of one field. Plan I also requires a second Teaching Field of 24 semester hours, including 12 hours of 300-400 level courses. This credit may be counted toward satisfaction of the appropriate Elective Blocks or as Free Electives. For some students a Composite Teaching Field in Science, Social Studies, or English, outlined under Plan II, College of Education, is a more appropriate choice. Teacher certification under either plan also requires completion of 18 semester hours of 300-400 level courses in Education, including 3498-3499, Professional Laboratory Experiences. (Application must be filed with the Coordinator of Teacher Education during the spring semester preceding the year when the courses will be taken). Education courses required for teacher certification may be counted as Electives and toward satisfaction of the general requirement of 36 advanced hours. For more comprehensive information concerning certification requirements, students should read the appropriate material in the College of Education section of the catalog.

### 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 school.

While the Association of American Law Schools and the Law School Admissions Council do not prescribe courses or majors for pre-law students, they do advise against taking many law courses at the undergraduate level; however, the particular 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, or one of the designated pre-law advisors listed below.

In addition to seeking advice from the departmental undergraduate advisors, counsel should be sought from the following professors who have special interest and expertise in legal education and who have been designated official "pre-law advisors":

Dr. L. Phillips Blanchard  
119 Bell Hall  
747-5139

Dr. Joseph B. Graves  
Liberal Arts 411  
747-5296

Dr. Yasuhide Kawashima  
Liberal Arts 131  
747-5508

Dr. Melvin P. Straus  
Benedict Hall 202  
747-5227

Dr. Randolph H. Whitworth  
Psychology 107  
747-5531

### PROGRAMS IN ECONOMICS

Both the Bachelor of Arts and Master of Arts degrees are offered in Economics, a department in the College of Business Administration. Full descriptions for these programs are provided under Economics and Finance in the College of Business section.

### SOVIET AND EAST EUROPEAN STUDIES

The Soviet and East European Studies Program is an optional plan available to Political Science or History majors. It is designed to help prepare students for advanced study in Soviet and East European fields at the graduate level or for a career in American business, education and government agencies dealing with the Soviet and East European area. Students in any field for whom emphasis on the Soviet Union or Eastern Europe might be advantageous are encouraged to choose electives from the plan. Specific requirements for all students in the program are Russian 3301 — Nineteenth Century Literature; Russian 3303 — Soviet Literature, or Russian 3320 — Russian Civilization; Political Science 3324 — Soviet and Eastern European Politics; Political Science 3338 — Soviet Foreign Policy; History 3332 — History of Russia to 1801, or History 3333 — History of Russia 1801 to the Present; and History 3369 — Twentieth Century Europe 1900 to the Present, or History 3374 — Modern Germany since 1815; Economics 3395 — The Soviet Economy; Geography 3310 — Cultural Geography; English 3381 — Nineteenth Century Russian Literature in Translation, or English 3382 — Twentieth Century Russian Literature in Translation. Specific departmental requirements for Political Science majors are listed in the Political Science section of this catalog; those for History majors include History 3332, 3333, 3369 and 3374. All students must satisfy the general requirements of the Bachelor of Arts degree. Professor Z. Anthony Kruszewski is the advisor for Soviet and East European Studies.

### THE MASTER OF ARTS IN INTERDISCIPLINARY STUDIES DEGREE

The purpose of the M.A.I.S. program is to meet the needs of students who wish to continue their education beyond the baccalaureate degree but are not served by those specialized graduate programs that are limited to one area of study. Interdisciplinary in character, the M.A.I.S. program recognizes that students who are not pursuing the doctoral degree may benefit from study in more than one discipline. To this end, each student will construct a degree plan composed of courses from a variety of departments and core seminars designed for students in the M.A.I.S. program.

For additional information concerning the M.A.I.S. degree prerequisites, requirements and course offerings, students should read the appropriate material in the Graduate College section of the catalog, p. 181.

#### MAIS 3550 The History of An Idea

This course may be team-taught and cross-listed with a participating department. May be repeated for credit when topic varies.

#### MAIS 3560 Contemporary Issues

The detailed examination of a contemporary social or cultural concern from a multi-disciplinary perspective. This course may be team-taught and cross-listed with a participating department. May be repeated for credit when topic varies.

## PROGRAM IN BLACK STUDIES

The Black Studies program is designed to provide knowledge of the Afro-American's history, culture and heritage, and of his role in politics in the Anglo-American society.

All courses listed in the program are open to any student having the academic prerequisites. Credit earned may be counted (1) toward a departmental major, where appropriate; (2) to complete Blocks of Electives; or (3) as Free Electives.

ANTHROPOLOGY 3302 Comparative Social Systems

ENGLISH 3315 Literature of the Black American

POLITICAL SCIENCE 3320 Political Socialization and Political Culture

POLITICAL SCIENCE 3435 Contemporary Political Thought

SOCIOLOGY 3327 Majority Minority Relations in the U.S.

SOCIOLOGY 3336 Multi-Culture Society, Southwest

SOCIOLOGY 3352 Sociology of Poverty

SOCIAL WORK 3375 Social Welfare as a Social Institution

## WOMEN'S STUDIES PROGRAM

The Women's Studies Program provides a broad, interdisciplinary framework from which students can take coursework to specialize in issues of gender and/or of women. Women's studies courses are designed to provide students with skills for appropriate employment in government and business or for advanced study and research in women's studies or subdiscipline specializations on women.

To obtain recognition of a women's studies concentration on their transcripts, students must complete at least 18 hours, at least 12 of which must be at the upper-division level. Core courses in women's studies include:

English 3360 *Women in Literature (a study of women writers and images of women in literature)*

Political Science 3346 *Women, Power & Politics (a focus on the distribution of power between women and men in society and the political implications of that distribution)*

Sociology 3370 *Sociology of Sex Roles (an evaluation of the emergence of sex roles and relationship between such roles and social status, class, and power)*

From time to time, departments have offered and will offer courses that pertain to women's studies. Examples include Psychology of Women, The Family as a Social Institution, La Chicana, Human Sexuality, and Women's Biography & Autobiography. Students should consult the Women's Studies Coordinator about any special topics or permanent courses which fall within a women's studies concentration.

## INTERDISCIPLINARY HUMANITIES PROGRAM IN BORDER STUDIES

The Interdisciplinary Humanities Program in Border Studies is an informal area of concentration designed to supplement regular programs of study for those students desiring to strengthen their appreciation and knowledge of the multi-cultural context of life in the Southwest of the United States and Northern Mexico. Although the courses in the program are taught in regular departments of the College of Liberal Arts, all are interdisciplinary in character and transcend traditional subject matter distinctions. Particular attention is given to value orientations, the dynamics and consequences of cultures in contact, contemporary life in the El Paso/Cd. Juarez metropolitan area, the effect of the international boundary on regional life, and the fostering of a deeper understanding of each of the contributing cultural traditions, their evolution, transformation, and synthesis. Field experiences, guest lectures, per-

formances in the arts, and the study of community settings are frequently features of Border Studies courses. The program encourages a blending of perspectives from history, literature, philosophy, and the fine arts, as well as qualitative approaches within the social sciences.

The interdisciplinary Humanities Program in Border Studies was made possible by a grant from the National Endowment for the Humanities during the 1974-78 quadrennium.

The following are core courses developed through this program and may be taken for a border studies concentration within several of the Latin American Studies Options.

Art 3310	History of Latin American Art
History 3327	American Attitudes Toward the Indian, Black and Chicano: An Historical Perspective
History 3343	The U.S.-Mexico Border Since 1900
Philosophy 3351	Violence and Nonviolence: Values in the Southwest
Political Science 3345	Southwestern Border Politics
Music 3325	Music of the Border
Spanish 3325	The Confluence of Mexican and Chicano Literature

Philosophy/English Borderlands Humanism: Shifting Cultural Perspectives (taught as Philosophy 3452 — Problems in Philosophy or English 3440 — Advanced Literary Studies)

A drama course inspired by the Border Studies development effort but funded by Department of Drama and Speech resources has been recently added to the program:

Drama 3336	<i>Theatre in Spanish (study and staging of Spanish-language plays, for the public.)</i>
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In addition to the courses listed above, there are many other offerings of the University which relate to the Borderlands region. For more information about these courses, consult the department concerned and/or the Cross-Cultural Southwest Ethnic Study Center.

## BACHELOR OF MUSIC

*Major Areas:* (1) Music Education, Choral and Instrumental (see All-Levels Teacher Program). (2) Performance: Orchestra and Band Instruments, Keyboard Instruments, Voice or Ballet. (3) Theory and Composition.

All music majors must declare a major performing medium. Placement and Proficiency Auditions in piano, voice, and major instruments are required of all music majors. A private interview and a placement test are required in music theory to determine the level of study. Advanced placement is possible.

Music Majors transferring from another institution must pass proficiency tests on their major and secondary instruments, piano, and theory.

For detailed requirements and course sequence for music majors and minors, consult the Music Department Handbook with the Department Chairman.

### General semester hour Requirements for All Majors in Performance and in Theory and Composition

- 12 — ENGLISH
- 12 — MUSIC LITERATURE AND HISTORY (exception: Ballet majors take 3124, 2121, 2122, and History of Ballet 2343 and 2344).
- 3 — SPEECH (not required of Theory-Composition and Keyboard Instrument Majors; Ballet Majors also take Drama 3213).
- 6 — HISTORY 3101, 3102 or 3103-3104.
- 6 — POLITICAL SCIENCE 3110, 3111.

- 8-24 — THEORY 1111, 1112, 3113, 3114; 1211, 1212, 3213, 3214; 2315; 2411 or 2412 (Ballet Majors, 6 semester hours only; Theory-Composition Majors, 17 additional hours; Keyboard Majors, 5 additional hours; Orchestra-Band Instrument and Voice Majors, 2 additional hours.)
- 6 — MUSIC EDUCATION 3331, and 3333 or 3435 (exception: Theory-Composition requires only 3331 or 3333; Ballet Major requires only 3435; Vocal Performance Major requires Vocal Pedagogy 2493 in addition).
- 8 — FOREIGN LANGUAGE 4101, 4102 (required only of Performance Majors in Voice and Ballet; Ballet Majors, French recommended. In addition, 8 hours of Dictation required of Vocal Performance Majors).

### APPLIED MUSIC:

The following options are offered:

- A. — for Theory-Composition Majors: 16 semester hours of major instrument including at least 6 upper-level credit hours; 8 semester hours of class lessons in orchestra and band instruments; Vocal Pedagogy 2493 or Voice Class 2173; minimum proficiency of Piano 2272 must be achieved; final composition project. A total of 34 semester hours.
- B. — for Keyboard Performance Majors: 32 semester hours of the 4191 sequence on the major instrument (including 4 semesters of upper level courses.) 4 semester hours, or equivalent, of Chamber Music and Accompanying; Voice, 4 hours; Piano Pedagogy 2494. A total of 38 semester hours.
- C. — for Orchestra-Band Instrument Performance Majors; 32 semester hours of the 4191 sequence on the major instrument including 4 semesters of upper-level courses; Proficiency of Class Piano 2272 required; 4 semester hours of Chamber Music. (Exception: Not required of Guitar Majors.) A total of 40 semester hours.
- D. — for Vocal Performance Majors; 24 semester hours of the 3191 sequence, including 4 semesters of upper-level courses; 4 semester hours of Music Theater Workshop; 8 semester hours or equivalent, of Piano. A total of 36 semester hours.
- E. — for Ballet Performance Majors; Ballet Technique 3141-42; 3343, 3344, 3241, 3242, 3341, 3342; 3441-42; Choreography 3444; 4 semester hours, or equivalent, of piano. A total of 37 semester hours.

Participation for 8 semesters or each semester in residence in the ensemble of the major instrument (Ballet Majors add 2 semesters of Chorus). For exceptions, petition the Music Faculty in writing.

Qualified bandmen interested in preparing to direct orchestra must meet minimum participation requirements in orchestra, and vice-versa.

Recital participation and/or attendance is required every semester in residence, and is considered laboratory for other music courses. Performance Majors must present a full graduation recital approved by the Music Faculty.

**ELECTIVES:** To make a minimum total of 123 semester hours for Performance Majors, including 30 advanced hours. Ballet Majors take 21 semester hours of electives (Art 3105, 3106 are recommended) to total 126 semester hours.

**NOTE:** Requirements of the Music Education Plan are listed under All-levels Teacher Programs.

## BACHELOR OF FINE ARTS

Fields in which a student may major or minor:

### MAJOR

Area I, Two-dimensional  
Painting  
Printmaking

Area II, Three-dimensional  
Ceramics  
Metals  
Sculpture

### MINOR

Art History  
Painting  
Printmaking

Ceramics  
Art Education  
Sculpture

### Basic Requirements in Liberal Arts Area:

- 6 hrs. Freshman Composition English 3111 (or 6111) and 3112, or Linguistics 4112 and 4113 History 3101 and 3102 or 3103 and 3104 Political Science 3110 and 3111
- 6 hrs.
- 6 hrs.
- 3 hrs. Block A — Fine Arts: Drama 3113 or Music 3113
- 6 hrs. Block B — Social Sciences Anthropology, Economics, Political Science, Psychology, or Sociology\*
- 9 hrs. Block C — Humanities: English, Foreign Languages, History, Philosophy, or Speech\*
- 6 hrs. Block D — Natural Sciences Biology, Chemistry, Geology, Mathematics or Physics\*

\*No student may present courses from only one subject matter area to fulfill all requirements of Blocks B, C, or D.

### 42 hrs. Liberal Arts Area

#### Basic Requirements in Fine Arts — Art Area:

- 12 hrs. Basic Studies: Art 3101 Design I, Art 3102 Drawing I, Art 3103 Design II, Art 3104 Drawing II, Art 3105 Art History Western World I, Art 3106 Art History Western World II, Art 3209 History of Contemporary Art e.g. Painting I through VIII e.g. Printmaking I through VI
- 9 hrs. Art History: Life Drawing I through IV and Adv. Drawing Techniques I and II
- 24 hrs. Major Area: 2 out of 3 in Ceramics, Metals, or Sculpture
- 18 hrs. Minor Area: Art hours outside Major and Minor
- 18 hrs. Drawing Area: Life Drawing I through IV and Adv. Drawing Techniques I and II
- 6 hrs. Opp. Dimensional Areas:
- 6 hrs. Art Electives:

### 93 hrs. Fine Arts Area — Art\*\*

### 42 hrs. Liberal Arts Area

### 135 hrs. Minimum Total for a B.F.A. in Art

\*\*Senior candidates for B.F.A. will be required to have a graduating exhibition. The Art Department reserves the right to require additional art hours if a student shows inadequate progress in his area.

## BACHELOR OF FINE ARTS DEGREE WITH TEACHER CERTIFICATION

Students who seek the Bachelor of Fine Arts Degree with Teacher Certifications are required to fulfill all the requirements for the B.F.A. (see above) and, in addition, complete the 18 semester hours of Professional Development courses under the All-Level Teacher Program (p. 98). These courses include Ed.P. 3301, 3310, Ed.C. 3307, 3311, 3496, 3498. For specific information related to teacher certification, students are encouraged to consult an advisor in The College of Education in addition to their advisor in the Art Department.

## COLLEGE OF LIBERAL ARTS ALL-LEVELS TEACHER PROGRAMS

For additional information consult with the head of the department concerned, the Dean of the College of Liberal Arts, and the certification officer of the College of Education.

### MUSIC

All music majors must declare a major performing medium. Placement and Proficiency Auditions in piano, voice, and major instrument are required of all music majors. A private interview and a placement test are required in music theory to determine the level of study. Advanced Placement is possible.

Music Majors transferring from another institution must pass proficiency tests on their major and secondary instruments, piano, and Theory.

For detailed requirements and course sequence for music majors and minors, consult the Music Department Handbook with the Department Chairman.

### ACADEMIC FOUNDATIONS (62 semester hours)

- 12 — ENGLISH 3111-(or 6111), 3112\* (or Linguistics 4112-4113)\* and 6 semester hours from 3211-3212, 3213-3214, 3215-3216, 3218.
- 6 — HISTORY 3101-3102, or 3103-3104.
- 6 — POLITICAL SCIENCE 3110, 3111
- 12 — Semester hours from at least two of the following: SCIENCE — MATHEMATICS — FOREIGN LANGUAGES.

### Degree Requirements and Electives

- 8 — FOREIGN LANGUAGE DICTION 3190 (Choral Plan only)
- 3 — SPEECH 3101 or 3102\*
- 8 — MUSIC LITERATURE 2121-2122 and 4 hours from 2319, 2320, 2321, 2322, 2323
- 3 — MUSIC THEORY 3113 (acoustics).
- 4-12 — ELECTIVES

### Professional Development (18 semester hours)†

- 12 — Ed.P. 3301 and Ed.P. 3310; Ed.C. 3311, 3450.
- 6 — MUSIC EDUCATION 3496, 3498

### Academic Specialization†

- Plan C — Choral Plan: 55 semester hours
- Plan I — Instrumental Plan: 63 semester hours

Plan C	Plan I	
17	17	THEORY 111,112, 3114; 1211, 1212, 3213, 3214; 2315; 2411 (Choral Plan), or 2412 (Instrumental Plan).
12	12	MUSIC EDUCATION 3331, 3333, 3336, 3433.
—	12	MAJOR INSTRUMENT (Orchestra or Band Majors), including a minimum of 2 upper-level semesters. Students are expected to study every semester in residence
—	6	PIANO
—	8	LOW STRINGS, 1175, HIGH STRINGS 1176, REEDS 1167 and 1177, BRASSES 1168 and 1178, PERCUSSION 2179.
12	—	MAJOR INSTRUMENT (Voice, Guitar, or Keyboard instruments), including a minimum of 2 advanced semesters. Students are expected to study every semester in residence.
8	—	SECONDARY INSTRUMENT (Voice or Piano) Guitar Majors take Piano.
6	—	Additional applied music, including Vocal Pedagogy 2493, (Guitar Majors take 6 hours of Voice in addition to 2493);

- — Participation for 8 semesters or each semester in residence in the ensemble of the major instrument. For exceptions, petition the Music Faculty in writing.
- — Instrument Plan requires one semester of Chorale or Chorus, and four semesters of Chamber Music (Guitar Repertory 1194 in place of Chamber Music).
- — Keyboard Major requires four semesters of Chamber Music and Accompanying.
- 6 Guitar and Keyboard Majors take 3 semesters of secondary applied lessons in an Orchestra or Band instrument for Inst. Plan. Guitar and Keyboard Majors must participate in the major Ensemble of the vocal or instrumental areas for at least 4 semesters.
- — Recital participation and/or attendance is required every semester in residence and is considered laboratory for other music courses. Music Education Majors must present a partial recital.
- — A minimum total semester hours of 135 (Choral or instrumental plan) including 30 advanced hours.

\*A grade point average of not less than a 2.0 is required in both English 3111-12 or Linguistics 4112-4113 and Speech 3101 or 3102. Any student declared deficient in English or Speech by certifying committee or major department may be required to complete or repeat additional English and Speech courses regardless of his grade point average.

†A grade point average of not less than 2.5 is required in both Professional Development and Academic Specialization area.

### ART

#### Academic Foundations (60 semester hours)

#### ARTS & SCIENCES (36 semester hours)

- 12 — ENGLISH 3111-(or 6111), 3112, (or Linguistics 4112-4113)\* and 6 semester hours from 3211-3212, 3213-3214, 3215-3216, 3218
- 6 — HISTORY 3101-3102, or 3103-3104
- 6 — POLITICAL SCIENCE 3110, 3111
- 12 — Twelve semester hours from two of the following: SCIENCE — MATHEMATICS — FOREIGN LANGUAGES

#### Degree Requirements and Electives (24 semester hours)

- 3 — SPEECH\*
- 3 — PHILOSOPHY 3208.
- 3 — ECONOMICS 3203 or SOCIOLOGY 3101.
- 3 — DRAMA 3113 or MUSIC 3124.
- 12 — ELECTIVES.

#### Professional Development +

- 18 — ED.P. 3301, 3310, ED.C. 3302, 3311, 3496, 3498.

#### Academic Specialization†

- 51 — ART 3101, 3102, 3103, 3104, 3201, 3202, 3203, 3204, 3205, 3208, 3209, 3311, 3312, 3321, 3322, plus 6 advanced hours.
- A minimum total of 132 semester hours including 30 advanced hours.

### ART

350 Fox Fine Arts  
(915) 747-5181

CHAIRMAN: Willette Mary Munz  
PROFESSOR: Massey

ASSOCIATE PROFESSORS: Arnold, Bishop, Janzen, Munz

ASSISTANT PROFESSORS: Hogan, Thiewes

INSTRUCTORS: Fichner-Rathus, Simpson, Singer



**B.A. Degree**— Art courses required for a Major in Art are: Art 3101, 3102, 3103, 3104, 3105, 3106, plus three (3) 3200 numbered courses in one area and two (2) 3200 numbered courses in the other area plus additional hours to make a total of eighteen (18) hours, twelve (12) of which must be advanced.

**B.F.A. Degree**— A professional degree in Art; 93 hrs., Arts area; 42 hrs., Liberal Arts. See Bachelor of Fine Arts Degree plan on preceding pages. Senior candidates for the B.F.A. Degree will be required to have a graduating exhibition.

Area I, Two-dimensional Painting I — VIII Printmaking I — VIII Life Drawing I — IV Advanced Drawing I — VIII	Area II, Three-dimensional Sculpture I — VIII Metals I — VIII Ceramics I — VIII Enamels I — VI
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**B.A. or B.F.A. Degree with Teacher Certification** is the All-Levels Teacher Certification Program for art teachers. See immediately preceding pages.

All Art Majors should meet with the Department Advisor or Chairman upon accumulating 60 semester hours to outline their remaining major program.

See Graduate Sections for courses that are approved for credit in the Master's degree programs. All work done in satisfaction of course requirements for the Department of Art becomes the property of the Department, to be returned, destroyed or exhibited at the discretion of the department faculty. An overall grade point average of 2.5 in the arts will be required for graduation.

For Undergraduates

**General prerequisite:** Junior standing for all 3300 or 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.

### ART EDUCATION

#### 3311 Practicum and Theory for the Elementary Self-Contained Classroom Teacher (2-4)

An intensive examination of basic art materials and their application in aiding creative and aesthetic growth in the elementary school child. *Prerequisite or concurrently:* ED.P. 3301.

#### 3312 Methodology and Theory for Secondary School Art Education Specialists (2-4)

A study of the literature, materials and theory of secondary school art education. *Prerequisite:* ED.P. 3310.

#### 3321 Methodology, Materials and Theory for Elementary School Art Education Specialists (2-4)

A survey of materials, methodology and research related to the teaching of elementary school art education. *Prerequisite:* Art 3311, offered every year and summer.

#### 3322 Advanced Theory of American Public Secondary School Art Education (3-0)

An intensive survey of the sociological, psychological, philosophical and historical foundations of American public school art education. *Prerequisite:* Art 3312, offered every year and summer.

#### 3421 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.

#### 3451 Advanced Art Education (0-6)

Emphasis upon individual direction and achievement in advanced topics in Art Education. *Prerequisite:* 12 semester hours in art education or permission of instructor.

#### 3452 Special Problems in Art Education (0-6)

Emphasis upon individual creative research in Art Education. *Prerequisite:* 12 semester hours in Art Education or permission of instructor.

### BASIC STUDIES

#### 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.

#### 3103 Basic Design II (0-6)

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

### CERAMICS

#### 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:* Basic Design I and II, 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:* Ceramics I 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:* Ceramics II 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:* Ceramics II, 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:* Ceramics IV, 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:* Ceramics V 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.

### HISTORY OF ART

#### 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 developments in modern art in Europe and the United States from 1789 to the mid-twentieth century. *Prerequisite:* Art 3106.

**3309 History of American Art (3-0)**

A study of the principle 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.

**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:* Art 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.

**LIFE DRAWING**

**3208 Life Drawing I (0-6)**

Fundamentals of drawing the human figure: academic study of the skeleton and superficial muscles; also learning to draw from the live model with varied perceptual approaches. *Prerequisites:* Basic Design I and Basic Drawing I 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:* Life Drawing I or permission of instructor. Laboratory Fee: \$8.

**3308 Life Drawing III (0-6)**

Drawing the human figure from live model(s). Emphasis upon placing the figure in composition, the use of varied media, and encouragement of individual direction. *Prerequisite:* Life Drawing II or permission of instructor. Laboratory Fee: \$8.

**3318 Life Drawing IV (0-8)**

Study of animal forms (other than human). Emphasis upon learning the differences and similarities among vetabrates. Includes research, precision skeletal renderings and gestural sketches from the live animal. *Prerequisite:* Life Drawing II 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.

**ADVANCED DRAWING****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:* Life Drawing III 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:* Advanced Drawing I or permission of instructor. No Laboratory Fee.

**METALS****3203 Metals I (0-6)**

An examination of several basic metal techniques — sawing, soldering, forming, cold connections, surface finishes. 6 hours in studio per week. Laboratory Fee: \$8. *Prerequisites:* ART 3101 and 3103.

**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:* Metals I. 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:* Metals II. 6 hours in studio per week. Laboratory Fee: \$8.

**3313 Metals IV (0-6)**

Continuation of Metals III with emphasis on die-forming, repousee and chasing. *Prerequisite:* Metals III. 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:* Metals IV. 6 hours in studio per week. Laboratory Fee: \$8.

**3403 Metals VI (0-6)**

Emphasis on advanced metal design with individual investigation. *Prerequisite:* Metals V. 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 silver-smithing. Exploration of design theories and construction of tools and devices for hollow ware and flatware production. *Prerequisites:* Metals VI 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 upon individual direction and achievement in metals. May be repeated when problem varies. *Prerequisite:* 12 semester hours in metals or permission of instructor.

**PAINTING****3201 Painting I (0-6)**

Painting in oil, with concentration upon learning paint characteristics and the handling of painting tools. *Prerequisites:* Art 3101 and 3103. 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:* Painting I. 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:* Painting II. 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:* Painting III. 6 hours in studio per week. Laboratory Fee: \$4.

**3341 Painting V (0-6)**

Investigation upon depth of materials and techniques of painting, to include study of all major areas of painting media and their development. *Prerequisite:* Painting IV. 6 hours in studio per week. Laboratory Fee: \$4.

**3401 Painting VI (0-6)**

Continuation of Painting V. *Prerequisite:* Painting V. 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: \$6.00

**3441 Special Problems in Painting (0-6)**

Emphasis upon 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****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:* Art 3101 and 3103. 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:* Printmaking I. 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:* Printmaking II. 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:* Printmaking III. 6 hours in studio per week. Laboratory Fee: \$4.

**3335 Printmaking V (0-6)**

A continuation of Printmaking IV, with emphasis on lithography. *Prerequisite:* Printmaking IV. 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****3202 Sculpture I (0-6)**

Fundamentals of modern design working with clay, plaster and related materials. 6 hours in studio per week. *Prerequisites:* Art 3101 and 3103. 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:* Sculpture I. 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:* Sculpture II. 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:* Sculpture III. 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:* Sculpture IV. 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:* Sculpture V. 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.

**For Graduate Students Only****3502 Graduate Problems in Art (0-6)**

This course stresses individual direction and achievement in the following areas: art education, art history, ceramics, drawing, metals, painting, printmaking, and sculpture. May be repeated for credit. Fine Arts Fee: \$10, except when problem is in art history or education.

## CHICANO STUDIES/ ESTUDIOS CHICANOS

204 Graham Hall  
(915) 747-5862

**Roberto E. Villarreal, Director**

**PROFESSORS:** Haddox, F. Hernandez, N. Hernandez, Rivera, Stoddard

**ASSOCIATE PROFESSORS:** Barker, Cardon, Lewels, Martinez, Springer

**ASSISTANT PROFESSORS:** Aguilar, Bixler-Marquez, Brewer, Garcia, Melendez-Hayes, Villarreal

Estudios Chicanos / Chicano Studies offers courses through a number of disciplines. These courses are designed to provide knowledge about the Chicano, his origins, history, culture and the language of the Chicano people from which stems Chicano literature and other contributions to American society.

Estudios Chicanos / Chicano Studies is designed to provide individuals with the opportunity to prepare for advanced study in Chicano Studies fields, to provide interested Chicano students and others with the opportunity to prepare for further study in the fields of medicine and law, and to provide students with the opportunity to prepare for careers in community programs and teaching at all levels.

All courses listed in the program are open to any student having the academic prerequisites. Credit may be counted (1) toward a departmental major in another field, where appropriate; (2) toward an interdisciplinary major with a second major field of concentration as specified by an academic department; (3) to complete Blocks of Electives; (4) as Free Electives.

Estudios Chicanos / Chicano Studies is an interdisciplinary program which may be begun in the freshman or sophomore year. Students desiring to pursue this program should consult with the Chicano Studies Director to determine a program most suitable to their interests and future needs.

In addition to meeting the general requirements for a Bachelor of Arts, Bachelor of Science, or Bachelor of Social Work degree, including a departmental specialization, the student majoring in Chicano Studies must earn 27 hours of credit in Core Courses. Prerequisite for Chicano Studies majors is Chicano Studies 3105; Chicano Studies Survey and Analysis. Proven fluency in Spanish as demonstrated by completion of Spanish 4102 or 4104 or by appropriate examination is also required.

The Chicano Studies degree program also requires completion of a departmental major of at least 24 hours. Courses taken in this major, as well as those chosen for completion of Elective Blocks and Free Electives, should include as many of the Recommended Electives as possible. In effect, this plan combines the two majors into a comprehensive program with an extended area of expertise.

### CHICANO STUDIES MAJOR REQUIREMENTS (27 Hours)

1. Complete 27 semester hours of academic Core Courses as follows:
  - 3 Chicano Studies 3105 (Prerequisite for majors).
  - 3 Philosophy 3109.
  - 3 From one of the following: Anthropology 3205, Philosophy 3213, Sociology 3258, 3259.
  - 3 From one of the following: Anthropology/English 3374, Drama 3335.
  - 3 English 3310.
  - 3 History 3309.
  - 3 Political Science 3321.
  - 6 From the following: Curriculum and Instruction 3434, 3333, Educational Psychology and Guidance 3402, History 3327, 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.

### CORE COURSES

(See current Schedule of Classes for course offerings and prerequisites.)

#### ANTHROPOLOGY (Social Science)

**3205 Chicanos and their Culture****3374 Folklore of the Mexican American (Same as English 3374)**

#### CHICANO STUDIES

**3105 Chicano Studies Survey and Analysis (Prerequisite) (3-0)**

Interdisciplinary course designed to survey the history, socio-economic, political, artistic and literary manifestations of the Chicano Movement. It is also meant to study the interdisciplinary nature of Chicano Studies and in so doing, prepare the students 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).

#### DRAMA (Fine Arts)

**3335 Chicano Theatre and Drama**

#### CURRICULUM AND INSTRUCTION

**3434 Teaching Spanish as a Vernacular**

**3333 Education and the Mexican American****EDUCATIONAL PSYCHOLOGY AND GUIDANCE****3402 Bilingual/Bicultural Factors in Learning****ENGLISH (Humanities)****3310 Chicano Literature****3374 Folklore of the Mexican American (Same as Anthropology 3374)****HISTORY (Humanities)****3309 The Chicano****3327 American Attitudes Toward the Indian, Black, and Chicano: An Historical Perspective****3342 The Spanish Borderlands****3343 U.S.-Mexico Border Since 1900****3350 The Mexican Revolution****LINGUISTICS****3472 Contrastive Linguistics, Spanish/English (Same as Spanish 3472)****PHILOSOPHY (Humanities)****3109 Introduction to Chicano Thought****3213 Chicanos and American Thought****3351 Violence and Non-Violence: Values in the Southwest****3452 Problems in Philosophy (When topic is appropriate)****POLITICAL SCIENCE (Social Science)****3321 Chicanos and American Politics****3342 Third World Politics****3345 Southwestern Border Politics****3410 Readings in Political Science (When topic is appropriate)****SOCIOLOGY (Social Science)****3258 Chicanos in the Southwest****3259 Chicanos and American Society****SPANISH (Humanities)****3325 Confluence of Mexican and Chicano Literature****3472 Contrastive Linguistics, Spanish/English (Same as Linguistics 3472)****RECOMMENDED ELECTIVES****ANTHROPOLOGY (Social Science)****3211 Indians of the Southwest****3313 Indians of Mexico****ART (Fine Arts)****3310 History of Latin American Art****ECONOMICS (Social Science)****3368 Economics of Latin America****3368 Economy of Mexico****CURRICULUM AND INSTRUCTION****2207 Multiculture in the Elementary School****2217 Multiculture in the Secondary School****ENGLISH (Humanities)****3371 Life and Literature of the Southwest****HEALTH AND PHYSICAL EDUCATION****1209 Folk and Ethnic Dance****HISTORY (Humanities)****3316 Southwest Frontier****3349 History of Mexico to 1900****LINGUISTICS (Humanities)****3308 Methods of Teaching English as a Foreign Language****3309 The Structure of Spanish (Same as Spanish 3309)****3315 History of the Spanish Language (Same as Spanish 3315)****MUSIC (Fine Arts)****3126 The Music of Mexico****PHILOSOPHY (Humanities)****3312 Latin American Philosophy****POLITICAL SCIENCE (Social Science)****3433 Latin American Political Thought****3444 The Political System of Mexico****SOCIOLOGY (Social Science)****3304 The Community****3327 Majority/Minority Relations in the U.S.****3336 Comparative Cultures****3352 Sociology of Poverty****SPANISH****3309 The Structure of Spanish (Same as Linguistics 3309)****3315 History of the Spanish Language (Same as Linguistics 3315)****CRIMINAL JUSTICE**

411 Liberal Arts  
(915) 747-5296

CHAIRMAN: Joseph B. Graves, Jr.

PROFESSOR: Graves

ASSISTANT PROFESSORS: Ban, Guinn, Mahan, Murillo

The Criminal Justice Program 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 Degree**

1. Complete a minimum of 131 semester hours, including at least 36 hours at the advanced level (3300-3400).
2. Complete 83 semester hours of academic core courses as follows:
  - 9 English Composition 3111 (or 6111) 3112, 3359
  - 6 History 3101, 3102 or 3103-3104
  - 18 Political Science 3110, 3111, 3250, 3328, 3329, 3429
  - 18 Sociology 3101, 3333, 3348 and three courses (9 semester hours) from Sociology 3102, 3258, 3259, 3327, 3311, 3342, 3349, 3401
  - 9 Psychology 3101, 3212, 3315
  - 3 Speech 3101, 3102, 3104 or 3221
  - 12 Natural Science and/or Mathematics: Mathematics, Physics, Biology, Chemistry, Geology
  - 8 Foreign Language: French, German, Spanish, Russian, Italian, Japanese, Portuguese

3. Complete 15 semester hours of electives approved by the Director of the Criminal Justice Program. At least 3 hours must be at the advanced level.
4. Complete the following required courses in Criminal Justice: 3101, 3200, 3201, 3205, 3302, 3303, 3304, 3420.
5. Complete at least three courses from the following: Criminal Justice 3305, 3306, 3307, 3308, 3309, 3310, 3320, 3350, 3400, 3401, 3410, 3425.
6. Complete additional courses prescribed by the Director of the Criminal Justice Program.

#### For Undergraduates

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

#### 3301 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 Legal Aspects of Law Enforcement (3-0)

History and philosophy of modern criminal law, including the structure, definition and application of statutes and leading case law; the elements of crimes and penalties; general provisions of the Penal Code.

#### 3201 Criminal Investigation (3-0)

Introduction to the fundamentals of criminal investigation, including theory and history, conduct at crime scene, collection and preservation of evidence.

#### 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.

#### 3212 Crime and Violence in Society: A Victimological Analysis (3-0)

An assessment of the direct and indirect impact of crime and violence on the individual in contemporary society. Open to all students. May not be counted toward the Criminal Justice major.

#### 3302 Police Organization and Administration (3-0)

Principles of organization and management as applied to law enforcement agencies, introduction to concepts of organizational behavior.

#### 3303 Police Role in Crime and Delinquency (3-0)

Introduction to deviant behavior and current criminological theories with emphasis on synthesis and police applications; crime prevention and the phenomena of crime.

#### 3304 Police-Community Relations (3-0)

The role of the individual officer in achieving and maintaining public support; human relations, public information, relationships with violators and complainants.

#### 3305 Penology: The American Correctional System (3-0)

Analysis and evaluation of contemporary correctional systems, discussion of recent research concerning the correctional institution and the various field sciences. *Prerequisite:* Sociology 3348 or consent of instructor.

#### 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:* Sociology 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)

The history and philosophy of juvenile law with emphasis on the elements of juvenile offenses.

#### 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 Director of the Criminal Justice Program.

#### 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.

#### 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:* Criminal Justice 3200, 3205, or consent of the instructor.

#### Graduate Students Only

##### *Prerequisite:* Graduate Standing

The Master in Public Administration (MPA) degree in the Department of Political Science is the graduate program for the Criminal Justice Program.

Graduate courses in Criminal Justice are designed for students who want to take courses in Criminal Justice to satisfy the twelve (12) hour elective requirement in the MPA degree.

#### 3500 Seminar in Criminal Justice Administration (3-0)

Research, writing and discussion.

#### 3508 Seminar in Juvenile Justice (3-0)

Research, writing and discussion.

#### 3510 Seminar in Law Enforcement (3-0)

Research, writing and discussion.

#### 3520 Seminar in Corrections (3-0)

Research, writing and discussion.

#### 3540 Seminar in Selected Topics (3-0)

Research, writing and discussion.

## DRAMA & SPEECH

371 Fox Fine Arts  
(915) 747-5146

CHAIRMAN: J. A. Perozzi

PROFESSORS: Leech, Wingate

ASSOCIATE PROFESSORS: Etheridge, Miculka, Perozzi,  
Wood

ASSISTANT PROFESSORS: Brand, Gentry, Hageman,  
Middleton, Ronke, Tucker

INSTRUCTORS: Floto, Harris

For Undergraduates

**B.A. Degree:** Majors in Drama must take the following courses:

- (1) Speech 3103 and 1103.
- (2) Drama 3110, 3113, 3210, 4213, 3221, and 3325; Drama 3332 or 3342; six hours selected from Drama 3340, 3357, and 3358; six hours of advanced Drama courses selected in consultation with advisor.

**NOTE:** Liberal Arts students majoring in Drama who are seeking teacher certification should consult the section titled "Teacher Certification with B.A. Degree" of the catalog for information on fulfilling certification requirements.

**B.A. Degree in Speech.** Majors must choose a speech program with one of the following emphases:

1. Organizational Communication. Recommended for students interested in careers in public relations, industrial training, or personnel development. Required courses are Speech 3102, 3221 or 3222, 3206, 3307, 3308, 3393, 3430, plus 6 advanced speech hours recommended by advisor. Recommended electives are English 3362, Speech/Drama 3491, 6 hours of Business Management/Marketing, Psychology 3202 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 Speech 3101, 3220, 3221, 3222, 1221, 1222, 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 Speech 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 described in the section titled "Teacher Certification with B.A. Degree." Required courses are Speech 3101, 3103 and 1103, 1221, 1222, 3205, 3206 or 3220, 3221 or 3222, 3290, 3307, 3333, and 6 advanced speech hours recommended by advisor.
5. Interdisciplinary Film Studies. Recommended for students interested in film as an art or communication form. Required courses are Drama/Speech 3290 and 3491, Speech 3101 or 3102, 3220, 3222, 3393, 3414 or 3430, 3494, Broadcasting 3293, 3301, 3302, 3402, 3404, English 3369.

**B.A. Degree in Speech, Hearing, and Language Disorders.**

**PLAN I. Non-State Certification in Speech and Hearing Therapy**

- (1) SHLD 1110, 3110, 3210, 3312, 3313, 3314, 3315, 3316, 3409, 3410 and 3441
- (2) Eighteen semester hours of advanced electives (3300-3400)
- (3) A minimum of 100 hours of supervised clinical practicum

**PLAN II. Texas All-Levels Certification in Speech and Hearing Therapy**

- (1) SHLD 1110, 3110, 3210, 3312, 3313, 3314, 3315, 3316, 3409, 3410, and 3441.
- (2) Educational Curriculum and Instruction 3307, and 9 semester hours in advanced Education Courses (3300-3400) selected in consultation with advisor.
- (3) Six semester hours of directed teaching in the field of speech and hearing therapy. *Prerequisite:* 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.
- (4) 200 clock hours of supervised clinical practicum, 100 of which may be completed in conjunction with directed teaching in the field of speech and hearing therapy.

**PLAN III. Texas All-Levels Certification in Deaf and/or Severely Hard of Hearing**

- (1) SHLD 1110, 3110, 3210, 3312, 3315, 3409, 3410, 3411, 3413, 3414, 3416, and 3441
- (2) Educational Psychology and Guidance 3321, Educational Curriculum and Instruction 3303, 3304, 3307, and 3405, and 6 additional semester hours of upper division Education Courses (3300-3400) selected in consultation with advisor.
- (3) Six semester hours of directed teaching of classes for deaf children. *Prerequisite:* 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.
- (4) One semester of pre-student teaching experience either at the UTEP Speech, Hearing, and Language Center or in a school setting for deaf children or in a combination of the two settings. To be taken in conjunction with SHLD 3441.

## DRAMA

### 1111 Basic Theatre Practice (0-4)

Practical laboratory experience in all phases of production of major plays for public presentation. May be taken four semesters for credit.

### 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 Drama 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 theater 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:* Drama 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, décor, perspective sketching and rendering in watercolor. *Prerequisite:* Drama 3221.

**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 times to the present and its use on the stage. Practical experience in designing and executing costumes for actual 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.

**4350 Creative Drama (6-0)**

Methods of developing original dramatizations with children and creating plays from children's literature.

**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 Independent Study in Drama and Theatre (3-0)**

Independent research and production projects under the supervision of a faculty member.

**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.

**SPEECH****1103 Voice and Articulation Laboratory (0-2)**

This laboratory is required for students enrolled in Speech 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.

**1104 Diverse Cultures Speech Laboratory (0-3)**

Practice in speaking English through small group instruction. Special attention is given to individual problems. Use of audio and video equipment. May be taken twice for credit. Laboratory Fee: \$2.

**1221 Practicum in Forensic Debate (0-5)**

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 presentations. Includes participation in on-campus public debate program which may also include topics of local/current interest. May be repeated once as topics vary.

**1222 Practicum in Forensic Individual Events (0-5)**

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 once as content varies.

**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 Speech 1103. Credit will not be given for 3103 unless 1103 is taken and passed at the same time.

**3104 Speech for Students from Diverse Cultures (3-0)**

For students from foreign countries or homes where English is spoken as a second language. Speech communication with emphasis on pronunciation, vocabulary building, and auditory comprehension. The required laboratory is Speech 1104.

**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. Use of the class as a laboratory experience.

**3308 Organizational & 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, and structuring and judging interscholastic tournaments. *Prerequisite:* 9 hours of lower division speech courses.

**3393 Creative Film Production (3-0)**

Development of skills in use of film to express personal and dramatic ideas. Emphasis is on creative use of elements and artistic options in the medium. Primarily concerned with fictional and experimental films. Most student production will be in super-8mm. format. *Prerequisite:* Drama/Speech 3290, or Broadcasting 3290, or permission of the instructor.

**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 Individual Instruction**

Instruction of students individually or in small 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.

**3494 Production of Persuasive Films.**

Study of theory and methods for the design and production of persuasive films. Application to class, group, and individual production projects. *Prerequisite:* Drama/Speech 3491 or Speech 3393.

**SPEECH, HEARING, AND LANGUAGE DISORDERS**

**1110 American English Phonetics (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 American English Phonetics (3-0)**

An introductory course dealing with the fundamental principles of production and recognition of American English sounds. Application to regional dialects, foreign dialects, acting, broadcasting and speech correction. Practice in the use of IPA symbols. Not open to students who enrolled in or have received credit for Linguistics 3210. 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)**

A study of the anatomical and physiological bases of speech. Emphasis is placed upon the neurological aspects of speech, as well as upon the speech mechanism.

**3313 Speech Therapy (3-0)**

Discussion of therapeutic techniques related to disorders of articulation, voice, and rhythm. *Prerequisite:* SHLD 3210.

**3314 Language Therapy (3-0)**

Discussion of therapy techniques related to disorders of language. *Prerequisite:* SHLD 3210.

**3315 Language Development (3-0)**

Theory and chronology of speech and language acquisition. Psycholinguistic considerations. Distinction between linguistic difference and linguistic defects.

**3316 Diagnostic Procedures (3-0)**

Study of the diagnostic techniques and specific tests utilized in the evaluation of disorders of communications.

**3317 Instrumentation and Materials (3-0)**

Utilization of the instruments and materials common to the habilitation or rehabilitation of disorders of communication.

**3409 Audiology (3-0)**

Basic orientation to audiology. Physics of sound, anatomy of the hearing mechanisms, pathology of hearing disorders. Pure tone audiometry; air and bone conduction.

**3410 Auditory and Visual Communication (3-0)**

A study of the methods and techniques utilized in the aural rehabilitation or habilitation of the acoustically handicapped.

**3411 Speech for the Deaf (3-0)**

Study of the methods and techniques utilized in helping the pre-school deaf child develop speech.

**3413 Language for the Deaf I (3-0)**

Study of the methods and techniques utilized in helping the pre-school deaf child develop language.

**3414 Language for the Deaf II (3-0)**

Study of the methods and techniques utilized in language development on the primary and advanced level. *Prerequisite:* SHLD 3413.

**3416 Dactylogy (3-0)**

The use of sign language and finger spelling in teaching, counseling, and communicating with the deaf manually.

**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.

**3441 Clinical Practicum in Speech Pathology and Audiology (0-12)**

May be taken three times for credit. *Prerequisites:* 1. An overall grade point average of at least 2.0. 2. A grade point average of at least 2.5 in all SHLD courses. 3. (A) For students enrolled under PLAN I, Cluster (a) or PLAN II: Completion of SHLD 3110, 3210, 3312, 3313, 3314, 3315, and 3316. (B) For students enrolled under PLAN III: Completion of SHLD 3110, 3210, 3312, 3315, 3410, and 3411. The maximum semester course load for students enrolled in SHLD 3441 is SHLD 3441 plus three other courses for a total load of not more than thirteen semester hours.

**3465 Advanced Audiometrics (3-0)**

Measurement of hearing acuity with emphasis on speech audiometry, hearing aid evaluation, and calibration of instruments. *Prerequisites:* SHLD 3409 and permission of instructor.

**3467 Hearing Conservation (3-0)**

A study of the methods utilized in industry in hearing conservation and measurement of sound levels. *Prerequisites:* SHLD 3409 and permission of instructor.

**3496 Professional Laboratory Experience in the Elementary School****3497 Professional Laboratory Experience in the Elementary School****3498 Professional Laboratory Experience in the Secondary School****3499 Professional Laboratory Experience in the Secondary School****SPEECH/ENGLISH****6111 Communication Skills (6-0)**

Instruction and guided practice in the preparation of both oral and written compositions, and in study techniques. Taught jointly by the Department of English and the Department of Drama and Speech. To be taken in place of Speech 3101 and English 3111.

**For Graduate Students Only****M.A. Degree Prerequisites:**

- Drama: twelve advanced semester hours (3300, 3400) of undergraduate credit in Drama.
- Speech: twelve advanced semester hours (3300, 3400) of undergraduate credit in Speech.
- Drama and Speech: six advanced semester hours (3300, 3400) of undergraduate credit in Drama and six advanced semester hours (3300, 3400) of undergraduate credit in Speech.
- Speech Pathology and Audiology: minimum of eighteen advanced semester hours (3300, 3400) of undergraduate credit in disorders of communication.

**M.A. Degree Requirements:**

- Each candidate for the M.A. degree will be required to make a satisfactory score on a comprehensive examination; at the discretion of the department chairman, a portion of the examination may be a drama and speech performance, or a laboratory demonstration in speech pathology.
- For majors in Speech or in Drama:
  - Majors in Speech must take a minimum of eighteen semester hours in Speech. For majors in Speech electing to do a thesis, six hours of credit (Speech 3598-99: Thesis) may be counted

toward a required minimum of thirty hours of total course work, of which at least twenty-one hours must be in courses numbered 3500-3599. Majors in Speech electing a non-thesis option must take a minimum of thirty-six hours of total course work, of which at least twenty-seven hours must be in courses numbered 3500-3599.

- Majors in Drama must take a minimum of eighteen semester hours in Drama included in a total of thirty semester hours, of which at least twenty-one hours must be in courses numbered 3500-3599. Students in Drama must do either a research or a production thesis, for which they will receive six hours credit (Drama 3598-99: Thesis) toward these minimum requirements.
- Majors in combined Drama and Speech must take a minimum of nine semester hours in Speech and nine semester hours in Drama, plus Drama/Speech 3598-99: Thesis. They must take a minimum of thirty semester hours of total course work, of which at least twenty-one hours are in courses numbered 3500-3599.
- For majors in Speech Pathology and Audiology, 36 semester hours credit or 30 hours with thesis option, a minimum of 24 semester hours of graduate courses in Speech Pathology and Audiology, and a maximum of 12 hours of graduate credit in other fields selected in consultation with a departmental advisor. Moreover, each student will complete a clinical internship under the supervision of a faculty member who holds the American Speech and Hearing Association Certificate of Clinical Competence in Speech Pathology or Audiology. The internship will involve a minimum of one hundred and fifty (150) clock hours of supervised clinical practice.

**DRAMA/SPEECH****3598-99 Thesis****DRAMA****3500 Theatrical Production — Theatre Management (3-0)**

Individualized instruction in theatre management.

**3500 Theatrical Production — Costume Design and Construction (3-0)**

Individualized instruction in costume design and construction.

**3500 Theatrical Production — Make-up Procedures (3-0)**

Individualized instruction in make-up procedures.

**3500 Theatrical Production — Set Design and Shop Management (3-0)**

Individualized instruction in set design and shop management.

**3500 Theatrical Production — Lighting and Sound Control (3-0)**

Individualized instruction in lighting and sound control.

**3500 Theatrical Production — Directing and Rehearsal Methods (3-0)**

Individualized instruction in directing and rehearsal methods.

**3500 Theatrical Production — Teaching of Acting (3-0)**

Individualized instruction in teaching of acting.

**3500 Theatrical Production — Organizing Spanish-Language Theatre Programs (3-0)**

Individualized instruction in organizing Spanish-language theatre programs.

**3518 Bibliography and Scholarly Methods of Drama and Theatre**

Designed to equip the student with effective technique for scholarly research and writing in the field of theatre and drama.

**3520 Contemporary Production****3522 Seminar in Design**

A course for the general drama student relating design concepts to the

needs of the playwright and director. Period set design, theatre design, and contemporary design trends are studied.

**3523 Theatre and Drama in Human Affairs (3-0)**

Drama and theatre as reflections of the history of Western thought.

**3525 Problems in Creative Dramatics and Children's Theatre**

**3527 Seminar in Performance**

(May be taken more than once with a change in area of emphasis).

**3529 Seminar in Playwriting**

Those taking the course will be expected to make substantial progress toward the completion of a three-act play. May be taken more than once with a change in area of emphasis.

**3531 Seminar in the Classical Rhetorical Tradition**

Study of both theory and practice of persuasion and verbal communication during the classical Greek and Roman periods. May be taken more than once with a change in area of emphasis.

**3532 Seminar in Contemporary Rhetoric**

Study of the contributions to understanding of persuasion and communication by modern, humanistic theorists, such as Kenneth Burke, I.A. Richards, and Marshall McLuhan. Application of such theory to a variety of contemporary communication events. May be taken more than once with a change in area of emphasis.

**3541 Seminar in Speech Education**

Develops a perspective on aims and methods for teaching a variety of courses in communication and public speaking at the high school and lower college division levels. May be repeated for credit when the content varies.

**3543 Communication Theory**

Study of recent non-traditional contributions to theories of human communication. Investigates the application of models, the implications of recent developments in social psychology, and the results of experimental research.

**3550 Directed Study**

Investigation of a significant area in rhetoric, communication, public address, or filmic communication by individual students or small groups. May include individual research projects or field study. May be repeated for credit when content varies.

**3560 Communication Analysis**

Study of methods of measurement, analysis, and assessment of communication as applied to small group, organizational, and mass arenas. Emphasis on analysis of communication networks and systems, information flow and dissemination.

**3562 Organizational Communication**

Philosophy, methods, and designs for studying the communication systems and practices in a complex organization.

**4564 Human Communication Systems**

Study of communication from the perceptive of human speech, perception, and motivational systems.

**3590 Critical Analysis of Motion Pictures**

Various functions of the motion picture medium, such as artistic expression, mass entertainment, and communication to differing limited target audiences. Elements, syntax, and creative options in the medium. Standards for evaluation and analysis of motion pictures.

**3591 Film as a Medium for Social Influence**

Use of films for mass persuasion and reinforcement in differing societies. Use of films as specific persuasive messages adapted to distinct target audiences. Application of rhetorical and psychological theory, communication models, and film theory in analysis of specific techniques used in filmic persuasion. Detailed analysis of significant persuasive films. *Prerequisite:* Speech/Drama 3491 or Speech 3590 or permission of instructor.

**SPEECH PATHOLOGY/AUDIOLOGY**

**3558 Cleft Palate**

Diagnosis and management of articulation and resonance disorders related to cleft palate and other congenital cranial-facial abnormalities.

**3559 Fluency Disorders**

Etiology, diagnosis and treatment of childhood and adult stuttering and other disfluencies.

**3560 Aphasia**

Etiology, diagnosis and treatment of communication disorders related to adult aphasia.

**3561 Seminar in Speech Pathology**

Discussion of research methods. Investigation of various topics related to normal and/or deviant aspects of speech and language. May be taken more than one time with a change in area of emphasis.

**3562 Disorders of Language**

Standardization, reliability, and validity of language tests. Advanced techniques in diagnosis and remediation of language disorders of children.

**3563 Disorders of Voice**

Diagnosis and management of organic and hyperfunctional voice disorders.

**3564 Neurological Disorders of Communication**

Etiology, diagnosis, and treatment of communication disorders related to cerebral palsy, mental retardation and other manifestations of brain-injured children.

**3565 Advanced Audiology**

Assessment of auditory function by utilizing speech audiometry and other special techniques necessary for the difficult to test; for example, young children and malingers.

**3566 Medical Audiology**

Differential diagnosis as related to the site of lesion and medical implications.

**3567 Conservation of Hearing**

Preventive public school and industrial hearing conservation problems.

**3568 Seminar in Audiology**

Group discussion study of selected areas in clinical or industrial audiology or audio prosthology. May be taken more than once with a change in area of emphasis.

**3569 Advanced Clinical Practicum in Speech Pathology**

Supervised clinical practicum in providing services for the speech and language impaired.

**3570 Clinical Management**

Organization and administration of facilities rendering clinical services to the speech, hearing and language impaired.

**3571 Audioprosthology**

The study of hearing aids including but not limited to their design, evaluation, selection, fitting, and follow up of clients.

**3572 Problems and Projects in Speech Pathology and Audiology**

(May be taken more than once with a change in area of emphasis).

**3573 Advanced Clinical Practicum in Audiology**

Supervised clinical practicum in providing audiological services.

**3574 Problems and Projects in Audiology (3-0)**

Special projects under faculty supervision dealing with specific problems or projects. (May be taken more than once with a change of emphasis).

**3598 Thesis**

**3599 Thesis**

**ENGLISH**

111 Hudspeth Hall  
(915) 747-5731

CHAIRMAN: Lawrence J. Johnson

ASSISTANT TO THE CHAIRMAN: F. Alan Ehmann

PROFESSORS EMERITI: Lurline H. Coltharp, Charles Leland

Sonnichsen, Lillian Collingwood, Francis Fugate

ASSOCIATE PROFESSOR EMERITUS: Joseph James

ASSOCIATORS: Burlingame, Day, Hernandez, Leach,

Olander, Small, Stafford, Taylor, West

**ASSOCIATE PROFESSORS:** Antone, Bledsoe, Esch, Gallagher, Gladstein, Johnson, Mortensen, Quarm, Standiford, Ullman

**ASSISTANT PROFESSORS:** Boley, Corn, Crumley, Dick, Ehmann, Etheridge, Gingerich, Justice, Kiska, Lacey, Mansfield-Kelley, Marchino, Melendez-Hayes, Mortimer, Potts, Schwalm, Shurgot, C. Walker, R. 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.

**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, 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 Freshman 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.

**Undergraduate Degree Options (Students are expected to counsel 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 Option:** 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 as two of the *Required Courses* listed under the Bachelor of Arts Degree on p. 94 of the catalog. 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 (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 to 1900), 3417 (American Fiction to 1900), 3418 (Early Twentieth-Century American Fiction), 3419 (American Fiction Since 1945), 3422 (American Drama).
6. 3450 (Major American Author).
7. 6 hours of advanced literature courses, with 3414 (Literary Criticism) strongly recommended.

**B.A. Degree — Creative Writing Option:** 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 as two of the *Required Courses* listed under the Bachelor of Arts Degree on p. 94 of the catalog. They then take 30 hours in advanced-level English courses as follows:

15 hours from among English 3361 (Creative Writing), 3362 (Creative Writing: Contemporary Non-fiction Writing and Editing), 3365 (Advanced Composition), 3367 (Creative Writing: Fiction Techniques), 3368 (Creative Writing: Commercial Fiction), 3369 (Creative Writing: Television and Screenplay Writing), 3370 (Creative Writing: Poetry Techniques), 3414 (Literary Criticism), and 3440 (when the topic is creative writing), 3420 (Workshop in Creative Writing, offered in the Spring semester *only*), and 12 hours from the following: 3319, 3320, 3321, 3323, 3330, 3333, 3337, 3343, 3344, 3408, 3409, 3415, 3416, 3417, 3418, 3419, 3422, 3425, 3447, 3448, 3449, 3450.

**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

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.

#### 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. (Linguistics 4111 may be substituted by foreign 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. (Linguistics 4112 may be substituted by foreign non-native English speakers.) *Prerequisite:* English 3110 or placement by examination.
- 6111 Written and Oral Communication (6-0)**  
Practice in written and oral communication; practice in organizing expository prose; practice in arranging and presenting ideas orally; practice in reading techniques and other study skills. Counts for both English 3111 and Speech 3101. *Prerequisite:* English 3110 or placement by examination.
- 3112 Research and Critical Writing**  
Study and practice in the use of library facilities and research and documentation techniques; emphasis on research papers and on critical essays. (Linguistics 4113 may be substituted by foreign non-native English speakers.) *Prerequisite:* English 3111 or 6111.
- 3211 English Literature (3-0)**  
English literature from the beginning to Samuel Johnson. Required of all English majors. *Prerequisite:* English 3112.
- 3212 English Literature (3-0)**  
English literature from Samuel Johnson to the present. Required of all English majors. *Prerequisite:* English 3211.
- 3213 Introduction to Fiction (3-0)**  
Attention to contemporary works as well as to the historical development of the genres. *Prerequisite:* English 3112.
- 3214 Introduction to Drama (3-0)**  
Study of the nature and variety of drama through examination of the contemporary theatre and its historical development. *Prerequisite:* English 3112.
- 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. *Prerequisite:* English 3112.
- 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. *Prerequisite:* English 3112.
- 3218 Introduction to Poetry (3-0)**  
Study of the nature and forms of poetry through examination of modern poetry and its historical antecedents. *Prerequisite:* English 3112.  
The following symbols indicate when an upper level course is taught: I: Even Fall; II: Odd Spring; III: Odd Summer; IV: Odd Fall; V: Even Spring; VI: Even Summer; +: Every Other Odd Summer; \*: Every Other Even Summer.
- 1301/3301 Literary Studies (3-0) (I, II, III, IV, V, VI)**  
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.
- 3310 Chicano Literature (3-0) (I, IV, VI\*)**  
Study of the Mexican-American culture in the United States as reflected in literature.
- 3311 American Literature to 1860 (3-0) (I, II, III, IV, V, VI)**  
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) (I, II, III, IV, V, VI)**  
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) (II, III, V, VI)**  
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) (II, V)**  
Study of the Black American in the United States as reflected in literature.
- 3317 Film Criticism (3-0) (II, V)**  
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) (I, III#)**  
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) (I, II, III, IV, V, VI)**  
Detailed study of the major plays, including *Hamlet*, *Othello*, *Lear*, *Macbeth*, *The Tempest* and others.
- 3321 Representative Shakespearean Works (3-0) (I, II, III, IV, V, VI)**  
Detailed study of Shakespeare's other well-known plays, such as *Romeo and Juliet*, *The Taming of the Shrew*, *Twelfth Night*, *Troilus and Cressida*, as well as non-dramatic works such as the *Sonnets*.
- 3323 Seventeenth-Century Prose and Poetry (3-0) (II, VI\*)**  
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) (IV, VI\*)**  
Neo-classical literature in the period 1660-1784.
- 3333 Romantic Literature (3-0) (I, III +)**  
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) (III +, V)**  
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) (I, III +)**  
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) (II, III)**  
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.
- 3359 Technical Writing (3-0) (I, II, IV, V)**  
Written and oral reports; assembling material, organizing, writing and revising. *Prerequisite:* English 3112.
- 3360 Women in Literature (3-0) (II, VI\*)**  
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) (I, II, III, IV, V, VI)**  
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) (I, IV)**  
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 English 3211 or 3212 for Creative Writing Option majors.
- 3365 Advanced Composition (3-0) (I, IV, VI)**  
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:* English 3112. Open to freshmen exempted from English 3112.

**3367 Creative Writing: Fiction Techniques (3-0) (I, II, IV, V, VI)**

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:* English 3361.

**3368 Creative Writing: Commercial Fiction (3-0) (II, III, V)**

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:* English 3367 or permission of the instructor.

**3369 Creative Writing: Television and Screenplay Writing (3-0) (II, V, VI)**

Basic techniques for conceiving and writing the contemporary television and screen play with assignments devoted to resolving specific problems. *Prerequisite:* English 3361.

**3370 Creative Writing: Poetry Techniques (3-0) (I, III, IV)**

Study and practice in writing traditional and contemporary forms of poetry, with attention to basic elements such as imagery and symbolism. *Prerequisite:* English 3361.

**3371 Life and Literature of the Southwest (3-0) (IV)**

The social background of the Southwest and its reflection in literature. *Prerequisite:* Six hours sophomore English or junior standing.

**3372 Folklore (3-0) (I, IV, VI)**

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) (II)**

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) (II, III, V)**

Study of the Mexican American culture in the United States as reflected in folklore.

**3375 Nineteenth Century Russian Literature in Translation (3-0) (I, IV)**

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) (II, V)**

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) (I, II, IV, V)**

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) (I, III, +, IV)**

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. The literature will be read in translation.

**3409 Milton (3-0) (IV, VI\*)**

An introduction to the works of John Milton, with emphasis on *Paradise Lost*, *Paradise Regained*, and *Samson Agonistes*.

**3414 Literary Criticism (3-0) (II, IV, VI)**

The theory and practice of the major critical approaches to literature.

**3415 The Development of English Drama (3-0) (III +, V)**

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) (II, VI\*)**

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) (III +, V)**

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) (I, III +)**

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) (IV, VI\*)**

A study of representative works of contemporary American writers with emphasis upon Wright, Ellison, Heller, Barth, O'Connor, Bellow, and Oates.

**3420 Workshop in Creative Writing (3-0) (II, V)**

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 varies. *Prerequisite:* English 3367 or 3368 or 3370.

**3422 American Drama (3-0) (I, III +)**

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) (IV, VI\*)**

Historical study of dramatic theory and practice in England in the modern era, through reading of representative plays.

**3440 Advanced Literary Studies (3-0) (I, II, III, IV, V, VI)**

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. *Prerequisite:* English 3367 or 3368 or 3370.

**3447 The English Novel Through the Eighteenth Century (3-0) (I, III +)**

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) (II, VI\*)**

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) (IV, VI\*)**

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) (II, III +, V)**

Close study of the work, life, and critical reputation of a major American author, chosen from such persons as Emily Dickinson, T. S. Eliot, Ralph Waldo Emerson, William Faulkner, Nathaniel Hawthorne, Henry James, Herman Melville, Mark Twain, and Walt Whitman.

**3455 Teaching Composition (3-0) (I, III, IV)**

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 English or as Curriculum and Instruction 3455. Laboratory and/or field experience may be required.)

**3456 Teaching Literature (3-0) (II, V, VI)**

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 English or as Curriculum and Instruction 3456. Laboratory and/or field experiences may be required.)

**3490 Directed Study (3-0) (I, II, III, IV, V, VI)**

Individual directed study on an approved topic; to be taught at the consent of the professor and with the approval of the Departmental Chairman. For English majors only. May not be used for graduate credit.

The following linguistic courses may be taken for English credit (see advisor for special prerequisites)

**3220 Introduction to Linguistics (3-0) (I, II, III, IV, V, VI)**

Introduction to modern language studies with emphasis on contemporary as opposed to historical linguistics.

**3307 The Structure of the English Language (3-0) (I, II, III, IV, V, VI)**

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) (I, II, III, IV, V, VI)**

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) (I, II, III, IV, V, VI)**

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) (I, II, V)**

A contrastive study of the phonological, morphological and syntactical systems of Spanish and English.

For Graduate Students Only

**M.A. Degree Requirements — English and American Literature Option:** Prerequisites include eighteen semester hours of advanced courses in English and a Bachelor's degree. Foreign students must supply a satisfactory grade in a special proficiency test in the English language before being allowed to register (write Director of Graduate Studies, Department of English, for details.) Requirements are:

1. (A) Thirty-six semester hours of course work and Research Option A, and an oral examination; or
- (B) Thirty semester hours of course work and Research Option B, and an oral examination.

2. The required hours of course work must include English 3500, and four courses from among English 3501-3506, and four courses from among English 3551-3556.

3. Research Options

- (A) English 1597 (Non-thesis): The student submits a research paper from among the papers composed in English course numbers 3500 and 3551-3556. The paper is to be reviewed by a committee composed of two professors chosen by the student and one professor appointed by the Director of Graduate Studies. The paper must be revised to the satisfaction of the committee.

- (B) English 3598-99 (Thesis): The student submits a thesis proposal and the names of a selected thesis director and first reader to the Graduate Studies Committee; a second reader will be appointed by the Director of Graduate Studies.

4. Oral Examination

A defense of the revised research paper (Research Option A), or of the thesis (Research Option B), made before the Research Option Committee and one examiner appointed from outside the English Department. In all cases a majority vote will constitute acceptance of the revised seminar paper or of the thesis.

**Electives:** English 3550 (which may be repeated when the topic varies); additional period course; additional seminars (which may be repeated when the topic varies); graduate courses in other fields, as approved by the Director of Graduate Studies.

**Undergraduate Credit Hours:** Generally, undergraduate credit hours may not be used to satisfy graduate requirements. Exceptions must be properly approved by the Director of Graduate Studies and in no case are to exceed six hours.

**M.A. Degree Requirements — Creative Writing Option:**

Candidates will present an undergraduate major in creative writing or its equivalent as approved by the Creative Writing Committee. Requirements are:

1. Thirty semester hours of course work and English 3598-99, and an oral examination.
2. The thirty hours of course work must include English 3500 or 3513; two courses from among English 3566-68; two courses from among English 3501-3506; two courses from among English 3551-3556; one additional course in literature; and six elective hours (see below).
3. English 3598-99 (thesis): The creative writing option requires the completion of an original imaginative work. The student submits a thesis proposal and the names of a selected thesis director and first reader (ordinarily both members of the creative writing committee) to the Graduate Studies Committee; a second reader will be appointed by the Director of Graduate Studies.
4. Oral Examination

A defense of the document prepared in the Writing Practicum (English 3597) made before the Practicum Committee and one examiner appointed from outside the English Department by the Graduate Dean. In all cases a majority vote will constitute acceptance of the creative work.

**Electives:** Additional creative writing work in 3568 when topic varies; English 3550 (may be repeated when topic varies); additional period courses; additional seminar courses graduate courses in English or other fields, as approved by the Director of Graduate Studies.

**Undergraduate Credit Hours:** Generally, undergraduate credit hours may not be used to satisfy graduate requirements. Exceptions must be approved by the Director of Graduate Studies and in no case are to exceed six hours.

**M.A. Degree Requirements — Professional Writing and Rhetoric Option:**

Prerequisites include a bachelor's degree and 18 semester hours of advanced courses in the College of Liberal Arts, 9 hours of which must be completed in English which must include 3365, Advanced Composition; (may be waived with consent of the Director of Graduate Studies upon evidence of advanced writing skill.) Requirements are:

1. Thirty-six semester hours of course work.
2. Twenty-four of the 36 semester hours must include: Linguistics 3509 or 3519; Speech 3531 or 3532; English 3500 or 3513; one course from among English 3501, 3504; English 3505 or 3506; English 3510, English 3511, 3512, 3566, 3567 or 3568; English 3597.
3. English 3597 (Professional Writing and Rhetoric Writing Practicum): The professional writing and rhetoric option requires the completion of supervised experience in addressing, responding to, and resolving an academic or commercial communication problem through the preparation and perfection of an appropriate written document. The student submits a practicum proposal and the names of a selected practicum director and first reader to the Graduate Studies Committee; a second reader will be appointed by the Director of Graduate Studies.
4. Oral examination. A defense of the document prepared in the Writing Practicum (English 3597) made before the Practicum Committee and one examiner appointed from outside the English Department by the Graduate Dean. In all cases a majority vote will constitute acceptance of the creative work.

**Electives:** Twelve of the 36 semester hours may include any course listed in 2 above that is not being



counted as part of the 24 hour requirement; other approved electives include Linguistics 3508, 3570, 3572; Speech 3491, 3541, 3543, 3550, 3590; Ed. C. 3408; or any graduate seminar in literature.

**Undergraduate credit hours:** Generally, undergraduate credit hours may not be used to satisfy graduate requirements. Exceptions must be properly approved by the Director of Graduate Studies and in no case are to exceed 6 hours.

## GENERAL COURSES

**3500 Critical Approaches, Scholarly Methods, and Bibliography**

**3513 Literature in College: History, Criticism, Stylistics, Analysis**

**1530 Topics in Composition (0-1)**

Working from the base of discourse theory, this course addresses problems surfacing in the teaching of English composition and the application of strategies in the self-contained classroom and other instructional formats. Students may enroll for a maximum of three repetitions of this course; the grading will be pass/fail. *Prerequisite:* English 3510 or consent of the Director of Graduate Studies.

**2530 Topics in Composition (0-2)**

Working from the base of discourse theory, this course addresses problems surfacing in the teaching of English composition and the application of strategies in the self-contained classroom and other instructional formats. Students may enroll for a maximum of three repetitions of this course; the grading will be pass/fail. *Prerequisite:* English 3510 or consent of the Director of Graduate Studies.

**3530 Topics in Composition (3-0)**

Working from the base of discourse theory, this course addresses problems surfacing in the teaching of English composition and the application of strategies in the self-contained classroom and other instructional formats. Students may enroll for a maximum of three repetitions of this course; the grading will be pass/fail. *Prerequisite:* English 3510 or consent of the Director of Graduate Studies.

**3597 Writing Practicum**

**1597 Master of Arts Research Paper (Research Option A)**

**3598-99 Master of Arts Thesis (Research Option B)**

## LITERATURE

**3501 English Literature to 1485**

**3502 English Literature 1485-1860**

**3503 English Literature 1660-1832**

**3504 English Literature 1832-Present**

**3505 American Literature to 1860**

**3506 American Literature since 1860**

**3550 Seminar: Special Topics**

**3551 Seminar: Studies in English Literature to 1485**

**3552 Seminar: Studies in English Literature 1485-1660**

**3553 Seminar: Studies in English Literature 1660-1832**

**3554 Seminar: Studies in English Literature 1832-Present**

**3555 Seminar: Studies in American Literature to 1860**

**3556 Seminar: Studies in American Literature since 1860**

## CREATIVE WRITING

**1550 Summer Writer's Conference (1-0) (III, VI)**

One week intensive writing seminar, directed by visiting distinguished writers from such genres as poetry, fiction, and screenplay writing. (Special arrangements may be made for undergraduates who wish to take the Summer Writer's Conference for undergraduate credit as English 1301, Literary Studies. Interested students should consult with the Director of Creative Writing)

**3566 Advanced Fiction Writing (3-0)**

Intensive study and practice in the various forms and approaches of the genre.

**3567 Advanced Poetry Writing (3-0)**

Intensive study and practice in the various forms and approaches within the genre.

**3568 Creative Writing Seminar (3-0)**

Intensive practice and study of one or more of the techniques of imaginative writing. *Prerequisite:* English 3566 or 3567.

## PROFESSIONAL WRITING AND RHETORIC

**3510 Rhetorical Composition in College (3-0) (I, IV)**

Theory and analysis of contemporary discourse

**3511 Applied Composition in College**

A writing course focusing upon logical argumentation, problem-solving, informative writing, and persuasion.

**3512 Technical Writing Proseminar**

A writing course focusing upon rhetorical techniques for technical writing, graphics, and editing.

## HISTORY

**334 Liberal Arts  
(915) 747-5506**

**CHAIRMAN:** Carl T. Jackson

**PROFESSORS EMERITI:** Rex Wallace Strickland, Wilbert Helde Timmons

**PROFESSORS:** Bailey, Fuller, Jackson, Kawashima, Knight, McNeely, Shover

**ASSOCIATE PROFESSORS:** Clymer, Creighton, Martinez, Schalk

**ASSISTANT PROFESSORS:** Broaddus, Hackett, Hayes, Kuzirian, Martin

For Undergraduates

**B.A. Degree** — Specific course requirements for History majors are: History 3101-3102, or 3103-3104, 3201-3202, and twenty-one advanced hours, which must be distributed among the four fields so that no more than 12 hours fall in any one field of History. The four fields are: Field I, The United States. Field II, Asia and Russia. Field III, Hispanic America. Field IV, Europe, except Russia.

**Honors Courses** — Qualified students interested in honors courses should consult the chairman of the department. Honors courses which have been offered include: History 3101, 3102, 3201, 3202.

**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.

For Undergraduates and Graduates

*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 a world power, foreign policies, domestic problems, the Progressive Era, World War I, the Twenties, the Great Depression.

**3308 Contemporary America, 1933 to Present (3-0)**

Emphasizes 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 The Chicano (3-0)**

A survey of Mexican-Americans in the southwestern U.S. since the Treaty of Guadalupe Hidalgo, with emphasis on interactions between Mexican and Anglo-American cultures.

**3310 American Legal History (3-0)**

A 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)**

A study of American foreign relations from the American Revolution to World War I.

**3312 History of American Foreign Relations since 1914 (3-0)**

A study of American foreign relations from World War I to the present.

**3314 American Thought: From Puritan to Pragmatist (3-0)**

Analysis of main trends in pre-twentieth century American thought with emphasis on Puritanism, the Enlightenment, Transcendentalism, and the impact of Darwin.

**3315 Twentieth Century American Thought (3-0)**

Major figures and movements dominating the American intellectual scene since the 1890's. Emphasis on philosophical, religious, scientific and social thought.

**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 America enveloped the continent in building a nation.

**3325 History of Mass Media in America (3-0)**

Development and role of newspapers, books, radio, television, magazines, and movies in American life, with particular emphasis on the communications revolution of the twentieth century.

**3327 American Attitudes toward the Indian, Black, and Chicano: An Historical Perspective (3-0)**

A comparative and historical survey of the dominant racial theories, stereotypes and popular attitudes focused upon the Native American, Black, and Chicano during the course of American history.

**FIELD II: 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.

**3332 History of Russia to 1801 (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 History of Russia, 1801 to the Present (3-0)**

A history of the USSR, the course presents the background to the Great Russian Revolution, the first decade of revolutionary experimentation in the 1920s, the age of Stalin, and finally, an overview of Soviet life today.

**FIELD III: HISPANIC 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 Ameri-

can 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.

**3347 South America since 1810 (3-0)**

The politics, economy, culture, and international relations of the ABC 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 The English Revolution (3-0)**

The causes, events, and consequences of one of the first modern revolutions from the late Elizabethan age to 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.

**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**

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**

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 1820's, 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 Weimar 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.

**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 Western historical thought from the ancient Greeks to the present. Includes an analysis of major theoretical issues confronted in the study of history, with treatment of such figures as Herodotus, St. Augustine, Machiavelli, Voltaire, Hegel, Marx, Freud, and Toynbee. Lectures plus organized discussions. Note: History majors may count this course in any of the four fields.

**For Graduate Students Only**

**GRADUATE SCHOOL REQUIREMENTS:** Graduate Students in history should be familiar with the graduate school requirements listed in the present catalog.

**DEPARTMENTAL REQUIREMENTS FOR THE M.A. DEGREE:** Students working toward the Master of Arts degree in history may follow either of two plans:

Plan I requires the completion of 30 hours, including an acceptable thesis. A Plan I student must complete History 3581 and 6 additional hours of graduate seminars in history, 9 hours of graduate studies courses in history, and History 3598—3599. It is recommended that History 3581 be taken before enrolling in another seminar.

The remaining 6 hours may be selected, in any combination, from among graduate studies courses, graduate seminars, and upper division undergraduate courses taken for graduate credit.

As part of the total 30 hours, a student may choose a Minor in a related field, provided the department's graduate advisor approves. The Minor requires 6 hours, of which at least 3 must be at the 3500 level.

Plan II requires the completion of 36 hours, including the submission of *two acceptable seminar papers in lieu of a thesis*. A Plan II student must complete 12 hours of graduate studies courses in history, 6 hours of graduate seminars in history, and, in the final semester of work, History 3593. A Plan II student must complete either History 3581 or History 3540. History 3540 is recommended for teachers or prospective teachers. History 3581 and History 3540 may be counted as a part, respectively, of the minimum requirements for seminars and studies courses.

The remaining 15 hours may be selected from among graduate studies courses, graduate seminars, and upper division undergraduate courses taken for graduate credit. In keeping with graduate school regulations, no more than 9 hours of undergraduate courses may be counted for graduate credit and only 6 of these hours may be taken in history; 3 additional hours may be included in a Minor field, if a Minor field is selected and approved.

Plan II students must submit the two seminar papers to the departmental committee which conducts the final examination for the M.A. degree, as prescribed by the Graduate School. The two seminar papers must be written under the direction of different professors.

As a part of the total 36 hours, a student may choose a Minor in a related field, provided the department's graduate advisor approves. The Minor requires 6 hours, of which at least 3 must be at the 3500 level.

Graduate Course Offerings

*Prerequisite:* Graduate Standing

### A. STUDIES COURSES

Graduate Studies courses are designed to provide a flexible approach to the study of history in various general areas. The specific topic studied will vary from semester to semester; each semester a brief description will be found in the published time schedule. Generally, studies courses involve reading, discussion, and writing, but depending on the nature of the topic, lectures or other approaches may be employed.

- 3505 Studies in United States History (3-0) +
- 3509 Studies in Latin American History (3-0)\*
- 3516 Studies in European History (3-0)\*
- 3521 Studies in East Asian History (3-0)\*
- 3540 Teaching History in Secondary and Elementary Schools (3-0)
- 3545 Independent Reading (3-0)

### B. SEMINAR COURSES

Graduate seminars will place primary emphasis on research in original sources.

- 3581 Historical Method and Historiography (3-0)
- 3582 Studies in European History (3-0) +
- 3583 Twentieth Century Borderlands (3-0) +
- 3584 Colonial and Revolutionary America (3-0) +
- 3585 History of American Foreign Relations (3-0) +
- 3586 American Intellectual History (3-0) +
- 3587 Modern America (3-0) +
- 3588 American South (3-0) +
- 3589 Civil War and Reconstruction (3-0) +
- 3590 Texas History (3-0) +
- 3591 History of Mexico (3-0) + #
- 3592 American West (3-0) +

## C. THESIS AND INDEPENDENT RESEARCH

### 3593 Independent Research

(Open only to Plan II graduate students in history in the final semester of work.)

### 3598-99 Thesis Courses for the Master's Degree

\*May be repeated for credit but not under the same professor.

+ May be repeated for credit when topic varies.

#A reading knowledge of Spanish is required.

## LATIN AMERICAN STUDIES

208 Miners Hall  
(915) 747-5196

Aaron Lee Segal, Director

### B.A. IN LATIN AMERICAN STUDIES

The Latin American Studies degree is an interdisciplinary major consisting of seven 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 Inter-American and Border Studies Institute 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 from 30 to 36 hours of credit toward the major. In order to provide flexibility and relevancy in the program, the student may choose among four options. In fulfilling the options, no single course may be used to satisfy more than one course requirement.

Fluency in Spanish (or English in the case of native Spanish-speakers), rather than a given number of credit hours, is the desired language objective for both Latin American Studies majors and for those seeking to complete the requirements for the concentration in Latin America. However, Latin American Studies majors who are native speakers of English must complete either Spanish 3320 or Spanish 3355. Students who elect the concentration in Latin America must complete one or the other of these courses or an advanced Spanish course from among those which may be presented in fulfillment of the requirements for the concentration (Spanish 3304, 3424, 3460 or 3463).

### Business-Economics Option

Accounting —	6 hours
Business —	Finance 3310: "Business Finance" Management 3300: "Introduction to Management" Marketing 3300: "Principles of Marketing." 9 additional hours of Business electives, of which 6 must be at the advanced, 3300-3400, level.
Economics —	Economics 3366: "Economics of Latin America" 3 hours of other Economics courses relevant to Latin America. 6 hours of other advanced (3300-3400 level) courses from the Behavioral Sciences Option (See Below)

Total Hours for Major = 36

### Behavioral Science Option

Political Science —	15 hours of 3300—3400 level courses in Latin American politics
OR	
Economics —	15 hours of 3300—3400 level courses relevant to understanding of Latin America

- Sociology — Sociology 3360: "Institutions and Cultures of Latin America"  
Sociology 3311: "Methods of Research"  
OR  
Sociology 3312: "Measurement and Inference in Social Research"
- Business — Computer Science 3125: "Introduction to Computers"
- Geography — Geography 3312: "Geography of Latin America"  
6 additional hours at the 3300-3400 level of courses from either the Humanities or Spanish-Linguistics Options

Total Hours for Major = 33

### Humanities Option

- Modern Languages and/or English — 9 hours of 3300-3400 level courses in Latin American Literature
- History — 9 hours of 3300-3400 level courses in Latin American content courses
- Philosophy — Philosophy 3212: "Latin American Philosophy"
- Art — Art 3310: "History of Latin American Art"
- Music — Music 3126: "The Music of Mexico." 6 hours of 3300-3400 level courses from either the Behavioral Science or Spanish-Linguistics Options

Total Hours for Major = 33

### Spanish-Linguistics Option

- Spanish — 15 hours of 3300-3400 level courses in Latin American content courses
- Linguistics — 6 hours in the linguistics of Spanish  
9 additional hours of 3300-3400 level courses from either the Humanities or Behavioral Science Options

Total Hours for Major = 30

### CONCENTRATION IN LATIN AMERICAN STUDIES

A student may pursue the Concentration in Latin American Studies in conjunction with any other major. A graduate or undergraduate completing the concentration will have this noted on the academic record as a special credential. A student who holds a degree from any accredited university may fulfill the requirements for the concentration and have this noted on the U.T. El Paso academic record.

#### REQUIREMENTS FOR THE CONCENTRATION IN LATIN AMERICAN STUDIES

*Prerequisite:* Geology 3312, Geography of Latin America

- Core Courses: History 3345 — Latin America — Reform & Revolution  
Economics 3366 — Economics of Latin America  
Sociology 3360 — Institutions & Cultures of Latin America  
Political Science 3333 — Problems of Latin American Government  
or  
Political Science 3433 — Latin American Political Thought

One of the following:

- Political Science 3444 — Political System of Mexico  
Philosophy 3213 — Latin American Philosophy  
Anthropology 3305 — Mexican Archeology  
History 3347 — South America Since 1810  
History 3349 — Mexico to 1900  
History 3350 — Mexican Revolution

- Anthropology 3313 — Indians of Mexico  
Spanish 3304 — Spanish American Literature Since Modernism  
Spanish 3424 — Literature of Mexico  
Spanish 3460 — Spanish American Novel  
Spanish 3463 — Spanish American Poetry

Any special topics course from History, Political Science, Sociology, and Anthropology, Philosophy, English, Modern Languages, or Economics which covers a Latin American subject, with approval of the advisor and the Dean of Liberal Arts.

TOTAL HOURS FOR CONCENTRATION: 18

### LINGUISTICS

136 Liberal Arts  
(915) 747-5767

CHAIRMAN: Ray Past

PROFESSORS EMERITI: Lurline Coltharp, Jacob Ornstein-Galicia

PROFESSORS: Blansitt, D. Natalicio, Past, Sharp

ASSOCIATE PROFESSORS: Cotton, Elerick

ASSISTANT PROFESSORS: Amastae, Springstead

**B.A. Degree** — Specific course requirements for the linguistics major in addition to the requirements for the B.A. degree, are Linguistics 3210, 3220, and 3354, plus twenty-one hours of advanced linguistics courses.

The following symbols indicate the *planned* schedule of courses: I = even fall; II = odd spring; III = odd summer; IV = odd fall; V = even spring; and VI = even summer. (Schedule subject to change — especially additions.)

#### For Undergraduates

#### 4103-04 Intensive Language Study (4103 — IV; 4104 — V) (5-3)

An intensive course designed to enable the student to master the fundamentals of a major non-Indo-European language. Oral drill. Basic structure, reading of elementary texts, laboratory. Repeatable for credit as the language varies. Counts toward Block C, Liberal Arts degree plan.

#### 1110-1113 Language Laboratory (0-3) (I, II, IV, V)

These laboratories accompany the corresponding numbered 41-courses and are required. Laboratory Fee: \$2.

#### 4110 English for Speakers of Other Languages (4-0) (I, II, IV, V)

Introduction to and practice with the basic systems of English, including the phonological, morphological and syntactic, both orally and in writing. *Prerequisite:* Departmental test of English language ability.

#### 4111 English for Speakers of Other Languages (4-0) (I, II, IV, V)

Practice with the basic structures of English, including their expansion into more complex structures, toward the end of making their use automatic; attention given to vocabulary development; all work to be both oral and written. *Prerequisite:* Departmental test of English language ability.

#### 4112 English for Speakers of Other Languages (4-0) (I, II, IV, V)

Fundamentals of composition; training in analytical reading of adult English prose; particular attention given to vocabulary development. *Prerequisite:* Departmental test of English language ability.

#### 4113 English for Speakers of Other Languages (4-0) (I, II, IV, V)

Further practice in composition and in reading comprehension; emphasis on writing a research paper and on research techniques; further vocabulary development. Note: the final examination in this course will be evaluated by a panel of readers. *Prerequisite:* Departmental test of English language ability. (May not be counted in addition to English 3112.)

#### 3180 Bilingualism and the Bilingual (3-0) (I, II, III, IV, V, VI)

A non-technical introduction to bilingualism designed to enable the English/Spanish bilingual student to understand better his linguistic situation and how being bilingual may affect language performance. Counts toward Block B in Liberal Arts degree plans.

#### 3210 Phonetics and Phonemics (3-0) (I)

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 the phonemics of English speech. Counts toward Block B in Liberal Arts degree plan. Required of all linguistics majors.

**3220 An Introduction to Linguistics (3-0) (I, II, III, IV, V, VI)**

Introduction to basic concepts and techniques of modern linguistics. Counts toward Block B in Liberal Arts degree plan. (May be taken as English 3220 or Anthropology 3220).

**3222 The Latin and Greek Elements in English (3-0) (I, II, III, IV, V, VI)**

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. Counts toward Block C in Liberal Arts degree plan.

**3307 The Structure of English (3-0) (I, II, III, IV, V, VI)**

Investigation of Modern English; a study of modern analyses of the language. *Recommended background:* Ling. 3210 or Ling. 3220. (May be taken as English 3307.) Counts toward Block B in Liberal Arts degree plan.

**3308 Methods of Teaching English as a Foreign Language (3-0) (I, II, III, IV, V, VI)**

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 Ling. 3307. (May be taken as English 3308.) Counts Toward Block B in Liberal Arts degree plan.

**3309 The Structure of Spanish (3-0) (II, IV, VI)**

Linguistic analysis of Spanish, including phonology, morphology, and syntax. Same as Spanish 3309. *Prerequisite:* Spanish 3202 or equivalent. Counts toward Block B in Liberal Arts degree plan.

**3313 English Historical Linguistics (3-0) (II, V)**

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 English or Ling. 3220. Counts toward Block C in Liberal Arts degree plan.

**3315 History of the Spanish Language (3-0) (I)**

A survey of the development of the Spanish language from Vulgar Latin to modern Spanish. *Prerequisite:* Spanish 3202 or 3204 or equivalent. (May be taken as Spanish 3315.)

**3344 Making and Using Language Tests (3-0) (II)**

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) (I)**

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. *Prerequisite:* Linguistics (or Anthropology) 3220. Counts toward Block B in Liberal Arts degree plan.

**3357 Sociolinguistics (3-0) (I)**

Language variables and sociological correlates, a review of current research, theories and applications. *Recommended background:* Linguistics 3220. Counts toward Block B in Liberal Arts degree plan. (May be taken as Sociology 3357.)

**For Undergraduates and Graduates**

**3401 Methods of Foreign Language Instruction (3-0) (II, IV, VI)**

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 Spanish 3401.) *Prerequisite:* Completion of course 3202 or the equivalent in a foreign language.

**3440 Child Language Acquisition and Development (3-0) (I)**

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. Counts toward Block B in Liberal Arts degree plan.

**3448 Analyses of Second Language Acquisition (3-0) (I)**

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) (IV)**

A study of the psychological factors in language behavior, including attention to theories of language learning. *Prerequisite:* Permission of department chairman or instructor. Counts toward Block B in Liberal Arts degree plan.

**3471 Studies in Linguistics (3-0) (I, II, III, IV, V, VI)**

Topic 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 departmental chairman. Counts toward Block B in Liberal Arts degree plan.

**3472 Contrastive Linguistics: Spanish/English (3-0) (I, III, V)**

A contrastive study of the systems of the two languages, the phonology, the morphology, the syntax. Conducted in both languages. Same as Spanish 3472. *Prerequisite:* Spanish 3202 or equivalent. *Recommended background:* Ling. 3220 or Ling. (Spanish) 3309.

**3473 The Spanish Language in the Americas (3-0) (V)**

The historical development of American Spanish, including contemporary dialects of Latin America and the United States. *Prerequisite:* Six hours of advanced Spanish or linguistics courses conducted in Spanish. Same as Spanish 3473.

**3480 Language Universals (3-0) (II)**

A study of universal and quasi-universal features of linguistic structures. *Prerequisite:* Six hours of 3300-3400 linguistics courses or permission of the department chairman. Counts toward Block B in Liberal Arts degree plan.

**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.

**For Graduate Students Only**

**M.A. Degree in Applied English Linguistics**

**Admission to Program:** BA degree with major in Linguistics, English, or Modern Languages, or BS in Education with a teaching field in English, Modern Languages, or Bilingual Education; or approval of the chairman of the Department of Linguistics.

**M.A. Degree Requirements:** Thirty semester hours including the thesis (3598-3599), of which a maximum of six hours may be 3400-level courses. A minor of six hours (not to exceed nine hours) may be approved by the chairman, but is usually not recommended. A comprehensive examination is required of all candidates and must be taken before 3598.

**3508 Second Language Teaching — English (3-0) (II, VI)**

A study of the principles underlying modern second-language teaching, and their application, with particular reference to English as a second language. Includes use of audio-visual equipment.

**3509 English Linguistics (3-0) (I, III)**

The structure of modern English from the viewpoint of a number of recent grammatical models.

**3519 English Historical Linguistics (3-0) (V)**

A study of the changes in English. The focus is on the language, not the literature.

**3540 Child Language Acquisition and Development (3-0) (IV)**

Investigation of recent research on the acquisition and development of first and second languages by the child.

**3541 Psycholinguistics and Reading (3-0) (II, III, V, VI)**

An inquiry into the fundamental aspects of the reading process — linguistic, psychological, and physiological.

**3570 Study in Language (3-0)**

Topic to be discussed will be selected. May be repeated for credit when topic varies.

**3573 Dialectology (3-0) (V)**

The phonology, vocabulary, and syntax of the dialects of English, with particular emphasis given to American English.

**3574 Language Testing (3-0) (I, IV)**

A study of the principles of effective language testing, with special attention to second-language testing.

**3578 Language Universals (3-0) (II)**

A study of recent research in language typology and universals.

**3585 History of the Spanish Language (3-0) (IV)**

The development of the language from Vulgar Latin to modern Spanish, with selected readings from different periods.

**3588 Bilingualism (3-0) (I, III)**

Study of social and linguistic aspects of bilingualism.

**3589 Problems in Language Instruction (3-0) (VI)**

A course designed for language teachers involving study of psychological, linguistic and methodological aspects of language instruction and testing, especially with reference to English. May be repeated for credit when topic varies. (Same as Spanish 3589.)

**3598-99 Master of Arts Thesis****MASS COMMUNICATION**

205 Cotton Memorial  
(915) 747-5129

**CHAIRMAN:** Wilma H. Wirt

**PROFESSOR EMERITUS:** Virgil C. Hicks

**ASSOCIATE PROFESSORS:** Lewels, Whitehouse

**ASSISTANT PROFESSORS:** Berman, Rugg, Wirt

**INSTRUCTOR:** Berg

Mass Communication students may pursue the Bachelor of Arts degree in one of two majors: Journalism or Broadcasting.

**B.A. in Journalism** degree students may select one of the following three sequences:

**News/Editorial**, for which course requirements are: Mass Communication 3102, 3201, 3207 and 3355; Journalism 3202, 3204, 3303 and 3305; Plus 6 additional advanced hours.

**Photojournalism**, for which course requirements are Mass Communication 3101, 3201, 3207 and 3355; Journalism 3204, 3303, 3308 and 3354; Plus 6 additional advanced hours.

**Advertising/Public Relations**, for which course requirements are Mass Communication 3102, 3201 and 3207; Journalism 3202, 3204, 3350, 3351 and 3352; Plus 6 additional advanced hours.

**B.A. in Broadcasting** degree students may select one of the following two sequences:

**Broadcast Production**, for which course requirements are Mass Communication 3102 and 3402; Broadcasting 3103, 3106, 3214, 3307, 3320 and 3321; Plus 6 additional advanced hours.

**Broadcast Journalism**, for which course requirements are Mass Communication 3102, 3201, 3355 and 3402; Broadcasting 3214, 3306, 3308 and 3405; Plus 6 additional advanced hours.

Secondary education majors desiring a teaching certificate in Journalism must complete the following courses: Mass Communication 3102, 3201, 3207 and 3355; Journalism 3202, 3204 and 3305; Plus 6 additional advanced hours in journalism.

**NOTE:** The following courses may be taken by non-majors to fulfill Liberal Arts requirements in Blocks A, B and C:

**Block A — Fine Arts:** Mass Communication 3207, 3208; Journalism 3204, 3308; Broadcasting 3302.

**Block B — Social Sciences:** Mass Communication 3102.

**Block C — Humanities:** Mass Communication 3101, 3200, 3201; Journalism 3202, 3303, 3305, 3312, 3406; Broadcasting 3106.

**MASS COMMUNICATION**

For Undergraduates

**3101 History and Principles of Mass Communication (3-0)**

History of American journalism and its role in society. Includes journalism as practiced in both print and electronic media.

**3102 Mass Media and Society (3-0)**

A study of the nature and function of mass communication and an appraisal of the performance of the mass media in society in general with emphasis on the United States.

**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:* Completion of English 3111 and 3112, ability to type 30 words per minute.

**3201 News Gathering and Reporting (3-4)**

Emphasis on gathering information, personal and telephone interviews, covering beats, speeches and other events. Provides realistic experiences in gathering and reporting news for publication in student newspaper. *Prerequisites:* Sophomore standing, English 3111-12, and MC 3200 or passing score on placement test.

**3207 Elementary Photography (3-3)**

Introduction and practice in the processes of news photography. Discussion of lenses and cameras, along with the actual photographic process. Capabilities of the press camera; exposure and development of film; printing and finding news pictures. *Prerequisite:* Sophomore standing.

**3208 Advanced Photography (3-3)**

A continuation of Elementary Photography. Permits students to go beyond basic skills and refine photo skills learned in basic course. *Prerequisite:* Mass Communication 3207.

**3330 Photographic Communication (3-0)**

A survey of photographic communication. Includes the historical, technical, social, political and professional development of photography. *Prerequisite:* Mass Communication 3207.

**3355 Communication Law (3-0)**

A consideration of the legal philosophy bearing on the mass media, tracing the development of press freedom as well as legal restrictions on the media today. *Prerequisite:* Junior standing.

**3402 Studies in Mass Communication (3-0)**

Subject(s) to be selected by professor in charge of special work in advanced fields.

**JOURNALISM**

For Undergraduates

**3202 Advanced News Gathering and Reporting (3-4)**

Emphasis on developing and writing news stories of substance and depth. Study of the investigative reporter's techniques for gathering public intelligence. Practice in learning to deal systematically with quantities of information. Evaluation of conflict in points of view. *Prerequisite:* Grade of C or better in Mass Communication 3201.

**3204 Graphics of Journalism (3-3)**

Development and uses of engraving and printing; type design; copy fitting and layout and color reproduction.

**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. *Prerequisite:* Mass Communication 3201.

**3305 News Editing (3-3)**

Instruction and practice in newspaper deskwork. Preparation of local copy, wire service copy, headlines and make-up. Work on a newspaper

copy desk. Emphasis on news judgment and social responsibility. *Prerequisite:* Grade of C or better in Mass Communication 3201.

**3308 Fields of Photography (3-3)**

A continuation of Elementary Photography with special emphasis on press photography. A survey of the various fields of photography including a practical working knowledge of cameras and their most effective uses. *Prerequisite:* Mass Communication 3207 or permission of the instructor, based on applicant's previous experience with camera and darkroom.

**3312 The Opinion Function (3-0)**

Instruction and practice in writing newspaper editorials and page columns. Early emphasis on structure and style, make-up, and policies. Practice in writing the signed column. *Prerequisites:* Junior standing and Mass Communication 3201.

**3350 Fundamentals of Advertising (3-0)**

Survey of advertising principles used in all media of communications. Role of advertising in small and large business enterprises. *Prerequisite:* Junior standing or consent of the department.

**3351 Advertising Layout and Copy (3-0)**

Basic course in production and handling of advertisements. Step by step production of typical ad; stresses creativity, mechanical makeup, final reproduction and evaluation. Agency and trade terms used to specify methods and desired results. *Prerequisite:* MC 3204.

**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. *Prerequisite:* MC 3201.

**3353 Magazine — Publications Production (3-3)**

Production of small magazines through offset reproduction. Stresses basics of organization, layout, design, and copy fitting. Basics of color runs and color separation. Includes working with art and photos and business side of publications. *Prerequisite:* MC 3204.

**3354 Photo-Journalism and Professional Practice (3-3)**

Developing the photo story and editing to obtain professional type magazine or newspaper layout. Stresses creative viewpoint and use of equipment to obtain desired result. Problems in "available" and tungsten lighting. Special use of flash bulb and electronic lighting. Use of 35mm, press type, and view cameras. *Prerequisites:* Junior standing and Mass Communication 3308.

**3357 Advertising/Public Relations Intern Program (0-20)**

Advanced work in public relations or advertising field. Student selected for this program gains practical experience by working for pay in local advertising or public relations agencies or departments. *Prerequisites:* MC 3201, 3204 and Jour. 3350.

**3406 Reporting Public Affairs (3-3)**

An indepth reporting course permitting students to report on issues and problems in society through direct coverage of city and county offices. *Prerequisites:* Mass Communication 3201 and Journalism 3202.

**UNIVERSITY PUBLICATIONS**

**For Undergraduates**

**1104 and 1204 Publications (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-adviser supervision. May be repeated for credit to the extent of six hours toward graduation. No senior student may take the 1104 course for credit toward graduation.

**2204 Intern Program (0-6)**

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

**BROADCASTING**

**For Undergraduates**

**3103 Basic Radio Operations (3-3)**

An introduction to the various aspects of audio equipment, techniques,

terminology, logging and FCC regulations. Preparation for FCC. Third Class Permit with Broadcast Endorsement. *Prerequisite:* Broadcasting 3106.

**3106 Broadcasting Systems (3-0)**

A survey of the various institutions that comprise the broadcasting industry with particular attention to organization, structure and management problems encountered in the profession. Compares different types of systems found around the world. Recommended for students contemplating becoming broadcasting majors.

**3214 Radio-Television Announcing (3-2)**

A study of the announcer-newscaster's responsibilities as a communicator. Analysis of announcer skills. Drills in radio and television announcing and the development of an effective on-the-air personality.

**3315 Commercial Copy Writing for Radio and Television (3-0)**

Writing commercials for radio and television. Creating, writing and producing effective commercial continuity. Preparation of documentary scripts. *Prerequisite:* MC 3201.

**3293 Basic Movie Making (3-2)**

Fundamentals of making movies for purposes of self-expression and communication. Basic theory and practice in planning, shooting, and editing films. Most work is with super-8mm film stock. Students must supply their own film equipment, raw film stock and processing charges. The department will provide editing equipment and specialized equipment.

**3301 Analysis of Motion Picture Production Techniques (3-0)**

A survey of motion picture production methods with particular attention to pictorial composition, movement, sound and lighting techniques, aspects of editing and special effects.

**3302 TV Film Techniques (3-2)**

A basic course in 16 mm film techniques for television use. Includes selection and use of lenses, lighting, meters and cameras in the production of news and feature films. Standards and methods in shooting, editing, and projecting films, as well as script preparation. (Students must provide their own film and processing.) *Prerequisite:* Permission of instructor.

**3306 Radio-TV News (3-2)**

News reporting and writing for radio and television. Processing wire copy, using skills of the radio-television news announcer. *Prerequisite:* MC 3201.

**3307 Advanced Radio Practices (2-7)**

Practical experience in radio production and operations, using KTEP-FM and KVOF facilities. Students produce programs for broadcast on KTEP-FM or local commercial stations. *Prerequisites:* Broadcasting 3103 and junior standing.

**3308 Advanced Radio Reporting (3-4)**

Advanced work in news gathering and reporting with the campus radio stations. Students participate in production of daily newscasts. *Prerequisite:* Broadcasting 3306.

**3320 TV Production (3-4)**

An introduction to the equipment and production facilities of television. Beginning problems in television production. Includes all production duties except producing and directing. *Prerequisite:* Broadcasting 3103.

**3321 Advanced TV Production (3-4)**

A continuation of Television Production. Advanced problems in television production. The skills of the television producer-director. *Prerequisite:* Broadcasting 3320.

**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 TV Station KCOS or other professional media. *Prerequisite:* Grade of C or better in Broadcasting 3320 or consent of department.

**3402 Advanced Film Techniques (3-3)**

Advanced film production practices cover A-B roll editing, sync sound recording, color film and filters; the feature film and its production stages. (Students must provide their own film and processing.) *Prerequisite:* Broadcasting 3302 or consent of instructor.

**3404 Cinematography (3-3)**

The use of 16mm professional motion picture cameras to produce feature



and documentary films for television use. Includes advanced filming, splicing, editing, and scripting techniques. (Students must provide their own film and processing costs.) *Prerequisite:* Broadcasting 3302 or consent of instructor.

#### 3405 Advanced TV Reporting (3-4)

Students gain experiences as TV news reporters in a professional setting either at Public TV Station KCOS or other professional media. *Prerequisite:* Broadcasting 3306.

### BROADCAST PRACTICUMS

#### For Undergraduates

##### 1105 Radio Station KVOF (0-3)

Experience on the staff of Radio Station KVOF. *Prerequisite:* Broadcasting 3103.

##### 1205 Radio Station KVOF (0-3)

Work on the staff of Radio Station KVOF. *Prerequisite:* Broadcasting 1105 and consent of department chairman.

##### 1305 Radio Internship (0-3)

Experience on staff of KTEP or other professional radio station. *Prerequisites:* Grade of C or better in Broadcasting 3103, 1105, 3214; FCC 3rd Class Permit with Broadcast Endorsement and successful audition.

##### 2305 Radio Internship (0-6)

Experience on the staff of KTEP or other professional radio station. *Prerequisites:* Grade of C or better in Broadcasting 3103, 1105, and 3214. FCC 3rd Class Permit with Broadcast Endorsement and successful audition.

##### 1405 Radio Station KTEP (0-3)

Work on Radio Station KTEP with increased responsibility. *Prerequisites:* Broadcasting 3103 and FCC 3rd Class Permit with Broadcast Endorsement.

##### 1406 TV Internship (0-3)

Experience on the staff of a professional TV station. *Prerequisite:* Grade of C or better in Broadcasting 3320.

##### 2406 TV Internship (0-6)

Experience on the staff of a professional TV station. *Prerequisite:* Grade of C or better in Broadcasting 3320.

## MILITARY SCIENCE

Military Science Building  
(915) 747-5621

CHAIRMAN: Major John Rackovan, Jr.

PROFESSOR: Rackovan

ASSISTANT PROFESSORS: Caswell, Deaton, Montes, Vance, Westholm

INSTRUCTORS: Franz, Grigsby, London, Porter

**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 considered suitable for continued development as an officer in the United States Army or in a civilian career. Army ROTC courses provide opportunities for leadership training and experience which are not duplicated in other college courses. Instruction facilitates the development of self-assurance, personal discipline, physical stamina, acceptance of responsibility, 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, such as Military Physical Conditioning, Survival/Backpacking/Camping, Introduction to Military Science Skills, Mountaineering/Rappelling, Marksmanship, Land Navigation and Military Skills (Effective Listening), and are usually taken during the freshman and sophomore years. The last two years (MS III and MS IV) form the advanced course and are normally taken during the student's junior and senior years. Military Science (ROTC) is an elective.

**ELIGIBILITY: Basic Course.** To enroll in ROTC, a student must be a full-time student of U.T. 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.

**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 Basic Summer Training 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 two years remaining prior to completion of a baccalaureate or advanced degree.

**Advanced Course.** Admission requires selection by the PMS, medical fitness and ability to qualify for a degree. *Prerequisite* is completion of six credit hours from basic course offerings which must include MS 2101 and MS 2102, or Basic Summer Training, or credit for the basic course because of military service or high school ROTC. 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 1200 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.** U.T. El Paso is allocated one or more three-year Army ROTC scholarships, whereas others are available on a nationally competitive basis at the beginning of the spring semester. Freshman cadets enrolled in military science may apply through the Military Science Department. Non-enrolled students may also apply.

**Two-year Scholarships.** U.T. El Paso is allocated one or more two-year Army ROTC scholarships, and others are available on a nationally competitive basis. Sophomores enrolled and non-enrolled in ROTC 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 camp. Application is made at basic camp.

**One-year Scholarships.** Students who have completed MS III may apply in May through the Military Science Department.

**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 18½¢ 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 \$500.

**PARACHUTE/RANGER/AIR ASSAULT TRAINING:** Qualified advanced course cadets may attend either the three-week Airborne Course, the nine-week Ranger Course, or the one-week Air Assault Course. 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, will be designated as Distinguished Military Graduates of U.T. El Paso. Distinguished Military Graduates may apply for a Regular Army commission — identical to those awarded at the United States Military Academy at West Point. Since U.T. 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 branch and then completes his tour of active duty through challenging assignments overseas and in the United States. 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.

## BASIC COURSES

### 1111 Introduction to Military Skills (1-1)

A study of basic military skills essential for the development of the novice military leader. May be repeated for credit when topics vary.

### 1112 Mountaineering/Rappelling (1-1)

An extensive skill course that includes an introduction to rappelling equipment, knot tying, various rappelling techniques, mountain walking and climbing, and techniques of rigging ropes for rappelling.

### 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.

### 1114 Drill and Ceremony (1-1)

An intensive offering in basic individual drill movements, precision marching, manual of arms with weapons and sabers, and ceremonies to include color guard, parades and reviews.

### 1115 Drill and Ceremony (Advanced) (1-0)

An intensive course offering advanced drill movements, precision marching, manual of arms with weapons and sabers. Includes participation in drill meetings and other public appearances. *Prerequisites:* MS 1114 and approval of instructor. May be repeated for credit.

### 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 approval of instructor. May be repeated for credit.

### 1117 Orienteering (Advanced) (1-0)

A detailed study of advanced orienteering skills. Includes extensive application in varied environments. *Prerequisite:* MS 2101 and approval of instructor. May be repeated for credit.

### 2101 Land Navigation (Map and Compass, Orienteering) (2-1)

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.

### 2102 Military Skills (Effective Listening) (2-0)

An interdisciplinary approach to the development of individualized listening and intergroup communications. Emphasis is placed on listening skills which are required in both managerial and leadership positions.

## ADVANCED COURSES

### 3301-02 Military Science III (3-1)

This offering addresses Leadership, Principles of War, the Role of the U.S. Army, Branches of the Army, the Soviet Army, Small Unit Tactics, Weaponry and Communications, and Leadership Laboratory. *Prerequisites:* Junior standing, basic course or equivalent military training, and selection of Professor of Military Science. Academic credit: Three hours per semester.

### 3401-02 Military Science IV (3-1)

This offering includes Military History, Operations, Logistics, Army Ad-

ministration, Military Justice, Military Ethics and Professionalism, Command and Staff Functions, Leadership, Military Training and Teaching Principles. *Prerequisites:* MS 3301/3302. Academic credit: Three hours per semester.

## AEROSPACE STUDIES

207 Graham Hall  
(915) 747-5232

CHAIRMAN: Lieutenant Colonel Willis K. Whichard

PROFESSOR: Whichard

ASSISTANT PROFESSORS: Brady, Harris, Stone

The aerospace studies curriculum comprises the Air Force ROTC education program which leads to a commission as a second lieutenant in the United States Air Force. 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 his capacities 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).

**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. Credit for all or part of the basic courses may be granted for participation in high school ROTC or for active military service. Scholarships are available for qualified students.

**PROFESSIONAL OFFICER COURSE (POC):** The last two years (AS 3301-3302 and 3401-3402) form the advanced course known as the POC. The POC requires two academic years to complete. The two academic years can be a combination of junior-senior, senior-graduate or all graduate years. Students must be physically and mentally qualified for POC entry and have a desire to be commissioned in the Air Force. Completion of the GMC is *not* a prerequisite for the POC. 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. 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.

## BASIC COURSES

### 1121-1122 The Air Force Today (1-0)

Introduction to U.S. Military practices and policies and to USAF customs and courtesies; doctrine; mission; and total force structure of the Air Force; U.S. Strategic Offensive Forces, U.S. Strategic Defensive Forces and General Purpose Forces; USAF Aerospace Support Forces.

### 1221-1222 The Development of Air Power (1-0)

The beginnings of manned flight; from Kitty Hawk to Versailles; the Interwar Years; air power during World War II; the Berlin airlift; the Korean War; technological advances in the 1950's; the Cuban Missile Crisis of 1962; air power in Southeast Asia; contemporary air power as an instrument of national policy.

## ADVANCED COURSES

### 3301-3302 Air Force Management and Leadership (3-0)

An integrated management course emphasizing the individual as a man-

ager in an Air Force milieu. The individual motivational and behavioral processes, leadership, communication and group dynamics are covered to provide a foundation for the development of the junior officer's professional skills as an Air Force officer. The basic managerial processes involving decision-making, utilization of analytic aids in planning, organizing and controlling in a changing environment are emphasized as necessary professional concepts. Organizational and personal values, management of forces in change, organizational power, politics and managerial strategy and tactics are discussed within the context of the military organization. Actual Air Force cases are used to enhance the learning and communication processes.

#### **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 and organization considerations.

#### **3403 Flight Instruction (3-0)**

Ground School: Preparation for FAA written examination. Flying instruction in civilian aircraft — 25 hours. Normally leads to FAA private pilot's certificate. Open only to qualified seniors in the Air Force ROTC programs.

## **MODERN LANGUAGES**

226 Liberal Arts  
(915) 747-5281

CHAIRMAN: Joan H. Manley

PROFESSORS EMERITI: Jacob Ornstein-Galicia, Edgar T.

Ruff, Joseph R. Smiley

PROFESSORS: D. Natalicio, Russell, Sharp

ASSOCIATE PROFESSORS: Bagby, Ewton, Manley, Perez, Tappan

ASSISTANT PROFESSORS: Aguilar, Aldana, Armengol, Astiazaran, J.A. Bailey, J.S. Bailey, Beyer, Brewer, Ford, Garcia, Irwin, Kluck, Navar, Nelson, Rodriguez, Scruggs, Teschner

### **STUDENTS NEW TO UTEP**

**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 UTEP Course Schedule.

### **EXAMINATIONS FOR PLACEMENT**

All students with a knowledge of French, German, 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 Course Schedule. 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 sections below.

Four credits plus advanced placement will be awarded for appropriate scores on the placement tests.

1. Credit will be given for appropriate scores on the CEEB Achievement test taken on or before May 4, 1974. After this date, the CEEB was replaced by a local placement test. Credit will be given for appropriate scores on this placement test.
2. Students who have completed one year or more of a foreign language in high school and who wish to con-

tinue in the same language should take the placement test, or register for 4101.

3. Native speakers should take the placement test.

### **BEGINNING AND INTERMEDIATE SPANISH: NATIVE-SPEAKER CLASSES, NON-NATIVE SPEAKER CLASSES**

For students who have learned to speak Spanish at home, 4103, 4104, 3203 and 3204 are the beginning/intermediate courses to take. Designed for students who do not speak Spanish are beginning/intermediate courses 4101, 4102, 3201 and 3202. If you are not sure whether you qualify as a native speaker, the Spanish Placement Exam will tell you.

### **General Foreign Language Requirement for all B.A. Degrees**

All programs leading to the B.A. degree require completion of course 3202 or 3204 in a foreign language. The requirement is not a fixed number of semester hours, but a level of achievement. The 4101-02, 3201-02 or 4103-04, 3203-04 course sequence can be reduced by successful examinations (see above). The requirement may be completed in French, German, Italian, Latin, Portuguese, Russian or Spanish. Some departments require that their majors take a certain foreign language.

### **Major Requirements in Modern Languages: Definition of Advanced Hours**

Requirements for majors in French, German and Spanish are set forth below in terms of advanced hours (semester hours earned in courses numbered 3300 or above). Completion of course 3202 or 3204 is the prerequisite for all 3300 courses.

### **B.A. Degree in French, German or Spanish (without teacher certification)**

Twenty-one semester hours of advanced courses in the major including at least nine hours of 3400-level courses. Spanish majors may count either Portuguese 3301 or 3321 as three of the required hours. Courses 3201-02 or 3203-04 in a second foreign language.

### **B.A. Degree in French, German or Spanish (with teacher certification)**

Specific course requirements in each language are listed below. For other requirements concerning teacher certification including a second teaching field and the required sequences of Education courses, the student should consult with the College of Education.

#### **FRENCH:**

21 semester hours of advanced courses in French including: 3301, 3303, 3357, 3401 (2205 recommended for students who are not native French speakers).

#### **GERMAN:**

21 semester hours of advanced courses in German including: 3301, 3303, 3357, 3401.

#### **SPANISH:**

21 semester hours of advanced courses in Spanish including: 3301, or 3303, 3302 or 3304, 3309, 3320, 3357, 3401, 3472; (3355 recommended for students who are not native Spanish speakers) Linguistics majors, or Spanish majors interested in Linguistics: Note that the following courses may be taken for credit either in Spanish or Linguistics: Spanish (or Linguistics) 3309, 3315, 3401, 3472, 3473. The following symbols are used to indicate the planned schedule of courses, but are subject to change: I = even fall, II = odd spring, III = odd summer, IV = odd fall, V = even spring, VI = even summer.

**FRENCH****For Undergraduates****4101 French One (3-2) (I, II, III, IV, V, VI)**

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) (I, II, III, IV, V, VI)**

A continuation of French 4101, with the introduction of more complex elements of grammar; additional practice in the four basic skills. *Prerequisite:* French 4101 or the departmental placement test. Laboratory Fee: \$2.

**3201 French Three (3-0) (I, II, III, IV, V, VI)**

Oral and written work in French; grammar review; reading from modern French authors. *Prerequisite:* French 4102.

**3202 French Four (3-0) (I, II, III, IV, V, VI)**

Grammar review; reading from modern French authors. *Prerequisite:* French 3201.

**2205 French Phonetics (2-0) (II, V)**

Systematic classroom pronunciation practice based on a theoretical understanding of the sound system of the French language. *Prerequisite:* French 3201.

**3301 French Literature (3-0) (II, V)**

Introduction to French literature through the Seventeenth Century. *Prerequisite:* French 3202.

**3303 French Literature (3-0) (I, IV)**

Introduction to French literature from 1715 to the present. Main literary trends and principal writers from the Romantic Period to the present. *Prerequisite:* French 3202.

**3320 French Civilization (3-0) (II, V)**

A survey of the political, social, intellectual and artistic history of France. *Prerequisite:* French 3202.

**3350 French Literature In Translation (3-0) (I)**

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) (I,IV)**

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 French courses. *Prerequisite:* French 3202.

**3357 Advanced Composition (3-0) (I,III,IV)**

*Prerequisite:* French 3202.

**For Undergraduates and Graduates****3401 Methods of Foreign Language Instruction (3-0) (II,IV,VI)**

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 German 3401, Spanish 3401, or Linguistics 3401.

**3487 Poetry (3-0) (II)**

May be repeated once for credit when the topic varies. *Prerequisite:* 6 hours of advanced French courses.

**3488 Prose (3-0) (I)**

May be repeated once for credit when the topic varies. *Prerequisite:* 6 hours of advanced French courses.

**3489 Theater (3-0) (IV)**

May be repeated once for credit when the topic varies. *Prerequisite:* 6 hours of advanced French courses.

**3490 Topics In French (3-0) (V)**

*Prerequisites:* 6 hours of advanced French and consent of instructor. May be repeated for credit when topics vary.

**For Graduate Students Only**

*Prerequisites:* Twelve hours of advanced courses in French, and a Bachelor's degree.

**3590 Topics In French (3-0)**

May be repeated when topics vary.

**GERMAN****For Undergraduates****4101 German One (3-2) (I,II,III,IV,V,VI)**

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) (I,II,III,IV,V,VI)**

A continuation of German 4101, with the introduction of more complex elements of grammar; additional practice in the four basic skills. *Prerequisite:* German 4101 or the departmental placement test. Laboratory Fee: \$2.

**3201 German Three (3-0) (I,II,III,IV,V,VI)**

Oral and written work in German, with some more advanced grammar and an introduction to the writing of compositions. Reading from contemporary authors. *Prerequisite:* German 4102.

**3202 German Four (3-0) (I,II,III,IV,V,VI)**

Grammar review, compositions, reading from contemporary authors. *Prerequisite:* German 3201.

**3301 German Literature before 1750 (3-0) (V)**

Main literary trends and principal writers from the beginnings through the Enlightenment. *Prerequisite:* German 3202.

**3303 German Literature since 1750 (3-0) (I)**

Main literary trends and principal writers from the birth of Goethe to the present. *Prerequisite:* German 3202.

**3320 German Civilization (3-0) (II)**

A survey of the political, social, intellectual and artistic history of Germany. *Prerequisite:* German 3202.

**3350 German Literature in Translation (3-0) (II)**

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) (I,IV)**

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:* German 3202.

**3357 Advanced Composition (3-0) (IV)**

*Prerequisite:* German 3202.

**For Undergraduates and Graduates****3401 Methods of Foreign Language Instruction (3-0) (II, IV, VI)**

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 French 3401, Spanish 3401 or Linguistics 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 when topics vary. *Prerequisites:* 6 hours of advanced German and consent of instructor.

**For Graduate Students Only**

*Prerequisites:* Twelve hours of advanced courses in German and a Bachelor's degree.

**3590 Topics in German (3-0)**

May be repeated when topics vary.

**ITALIAN****4101 Beginning Italian (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 Beginning Italian (3-2)**

A continuation of Italian 4101, with the introduction of more complex elements of grammar; additional practice in the four basic skills. *Prerequisite:* Italian 4101 or the departmental placement test. Laboratory Fee: \$2.

**3201 Intermediate Italian (3-0)**

Oral and written work in Italian; grammar review; reading from Italian literature. *Prerequisite:* Italian 4102.

**3202 Intermediate Italian (3-0)**

Grammar review; reading from Italian literature. *Prerequisite:* Italian 3201.

**LATIN****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:* Latin 4101. Laboratory Fee: \$2.

**3201 Latin Three (3-0)**

Continuing study of Latin grammar and vocabulary. Reading of significant prose texts. *Prerequisite:* Latin 4102.

**3202 Latin Four (3-0)**

Readings from the works of Catullus, Ovid, Horace, and Virgil. *Prerequisite:* Latin 3201.

**PORTUGUESE****3201 Intensive Portuguese One (3-0) (I,IV)**

An introductory intensive course in pronunciation and grammar of Brazilian Portuguese; practice in speaking, understanding, reading and writing. *Prerequisites:* Spanish 4102, 4104.

**3202 Intensive Portuguese Two (3-0) (II,V)**

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:* Portuguese 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.

**3490 Topics in Portuguese (3-0)**

May be repeated when topics vary. *Prerequisites:* 6 hours of advanced Portuguese and consent of instructor.

**RUSSIAN****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:* Russian 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:* Russian 4102.

**3202 Russian Four (3-0)**

Grammar review, compositions, and reading from Russian literature. *Prerequisite:* Russian 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:* Russian 3202 or consent of instructor.

**3303 Soviet Literature (3-0)**

Major developments in Russian literature since 1917. May be repeated when topics vary. *Prerequisite:* Russian 3202 or consent of instructor.

**3320 Russian Civilization (3-0)**

A survey of the political, social, intellectual, and artistic history of Russia. *Prerequisite:* Russian 3202 or consent of instructor.

**3350 Russian Literature in Translation (3-0) (V)**

Readings in English translation from various periods and genres of Russian literature. Taught in English. *Prerequisite:* 6 hours of sophomore literature.

**SPANISH****For Undergraduates****4101 Spanish One for Non-Natives (3-2) (I,II,III,IV,V,VI)**

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) (I,II,III,IV,V,VI)**

A continuation of Spanish 4101, with the introduction of more complex elements of grammar; additional practice in the four basic skills. *Prerequisite:* Spanish 4101 or the departmental placement test. Laboratory Fee: \$2.

**4103 Spanish One for Native Speakers (3-2) (I,II,III,IV,V,VI)**

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) (I,II,III,IV,V,VI)**

A continuation of Spanish 4103 with the introduction of more advanced elements of grammar. *Prerequisite:* Spanish 4103 or the departmental placement test. Laboratory Fee: \$2.

**3201 Spanish Three for Non-Natives (3-0) (I,II,III,IV,V,VI)**

Emphasis on speaking, understanding, reading, and writing modern Spanish. Completion of grammar study begun in 4101 and 4102. Readings from the contemporary period. *Prerequisite:* Spanish 4102

**3202 Spanish Four for Non-Natives (3-0) (I,II,III,IV,V,VI)**

A continuation of Spanish 3201, with some grammar review and more extensive readings from the contemporary period. *Prerequisite:* Spanish 3201.

**3203 Spanish Three for Native Speakers (3-0) (I,II,III,IV,V,VI)**

Introduction to Spanish and Spanish American literature. Development of reading and writing skills, vocabulary building and oral expression. *Prerequisite:* Spanish 4104.

**3204 Spanish Four for Native Speakers (3-0) (I,II,III,IV,V,VI)**

A continuation of Spanish 3203, with more extensive readings from modern authors. *Prerequisite:* Spanish 3203.

**3301 Spanish Literature before 1700 (3-0) (I,III,V)**

Main literary trends and principal writers from the Middle Ages through the Golden Age. *Prerequisite:* Spanish 3202 or 3204.

**3302 Spanish American Literature to Modernism (3-0) (II,IV,VI)**  
Main literary trends and principal writers in Spanish America from the sixteenth century through Modernism. *Prerequisite:* Spanish 3202 or 3204 or the equivalent.

**3303 Spanish Literature since 1700 (3-0) (II,IV,VI)**  
Main literary trends and principal writers from the Eighteenth Century to the Contemporary period. *Prerequisite:* Spanish 3202 or 3204.

**3304 Spanish American Literature since Modernism (3-0) (I,III,V)**  
Main literary trends and principal writers in Spanish America from the Modernist Period to the present. *Prerequisite:* Spanish 3202 or 3204 or the equivalent.

**3308 Business Spanish (3-0) (II)**  
Supervised practice in the composition of business letters, memos, and reports in Spanish. *Prerequisite:* Spanish 3202 or 3204 or consent of instructor.

**3309 The Structure of Spanish (3-0) (II,IV,VI)**  
Linguistic analysis of Spanish, including phonology, morphology, and syntax. Same as Linguistics 3309. *Prerequisite:* Spanish 3202 or 3204 or equivalent.

**3315 History of the Spanish Language (3-0) (I)**  
A survey of the development of the Spanish language from Vulgar Latin to modern Spanish. Same as Linguistics 3315. *Prerequisite:* Spanish 3202 or 3204.

**3320 Hispanic Civilization (3-0) (I,III,V)**  
A survey of the cultural traditions of Spanish-speaking populations, including Spain, Spanish America and Spanish-speaking groups in the U.S. *Prerequisite:* Spanish 3202 or 3204.

**3325 The Confluence of Mexican and Chicano Literature (3-0) (IV)**  
Comparative study of representative works in both Mexican and Chicano literature, stressing differences and correlations between the two. *Prerequisite:* Spanish 3202 or 3204.

**3350 Hispanic Literature in Translation (3-0) (IV)**  
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) (I,II,III,IV,V,VI)**  
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:* Spanish 3202.

**3357 Advanced Composition (3-0) (I,II,III,IV,V,VI)**  
*Prerequisite:* Spanish 3202 or 3204.

**For Undergraduates and Graduates**

**3401 Methods of Foreign Language Instruction (3-0) (II,IV,VI)**  
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 French 3401, German 3401 or Linguistics 3401. Spanish 3401 and 3402 may not both be counted.

**3402 Spanish for Teachers (3-0) (I,III,V)**  
An overview of the principal features of Southwest Spanish as it might occur in a school setting and of Spanish vocabulary required to teach in Spanish the basic areas of the school curriculum. *Prerequisite:* 6 hours of advanced Spanish.

**3424 The Literature of Mexico (3-0) (IV)**  
Principal genres and major works of Mexican literature. *Prerequisite:* 6 hours of advanced Spanish.

**3428 Golden Age Drama (3-0) (V)**  
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) (I)**  
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) (IV)**  
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) (III)**  
Shorter fictional forms in Spain and Spanish America from Juan Manuel to the present. *Prerequisite:* 6 hours of advanced Spanish.

**3441 Modern Drama (3-0) (I)**  
Readings from representative modern Spanish American and Spanish dramatists. *Prerequisite:* 6 hours of advanced Spanish.

**3458 Twentieth Century Spanish Literature (3-0) (VI)**  
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) (IV)**  
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) (II)**  
Readings from the principal Spanish-American novelists. *Prerequisite:* 6 hours of advanced Spanish.

**3461 Don Quixote (3-0) (V)**  
The literary value and influence of the Quijote Traditional and modern interpretations. The life and times of Cervantes. *Prerequisite:* 6 hours of advanced Spanish.

**3463 Spanish American Poetry (3-0) (VI)**  
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) (II)**  
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) (I,III,V)**  
A contrastive study of the systems of the two languages: the phonology the morphology, the syntax. Same as Linguistics 3472. *Prerequisite:* 6 hours of advanced Spanish, preferably including Spanish 3309.

**3473 The Spanish Language in the Americas (3-0) (V)**  
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) (II)**  
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.

**M.A. Degree in Spanish**

Departmental Requirements for admission to the M.A. program in Spanish are:

1. Fulfillment of general admission requirements for graduate study.
2. A satisfactory score on the Advanced Spanish Test of the Graduate Record Examination.

Students seeking conditional admission with deficiencies will be required to complete advanced level undergraduate courses as directed by the Graduate Advisor. Such courses will not count toward the M.A. degree.

*Program for the M.A. in Spanish:*

**PLAN I (NON-THESIS OPTION)**

Requirements:

1. Complete 36 credit hours of work, including the appropriate options chosen from "Required Courses and Subject Areas" listed below. With the approval of the Committee on Graduate Studies, a student may present a *minor consisting of 6 to 12 hours in a related field*. Of the 36 hours required in any individual's degree program, at least 27 hours must be at the 3500-level; students not offering a minor must present at least 30 hours of 3500-level courses in Spanish.
2. Submit two graduate seminar research papers, suitably bound, as required by the Graduate School. A prospectus outlining each proposed paper must be approved by the Committee on Graduate Studies. The papers will be defended orally.
3. Complete course 3202 (fourth semester) in a second foreign language with a grade of at least B, or demonstrate equivalent proficiency.

**PLAN II (THESIS OPTION)****Requirements:**

1. Complete 36 credit hours of work. The thesis (Spanish 3598-3599) counts for six hours. The remaining 30 hours must include (a) at least 21 hours of 3500-level courses in Spanish (24 hours if no minor is offered), and (b) the appropriate options chosen from "Required Courses and Subject Areas" listed below. With the approval of the Committee on Graduate Studies, a minor in a related field may be offered.
2. Complete Spanish 3598-99, Thesis. A prospectus outlining the proposed thesis must be approved by the Committee on Graduate Studies. The thesis will be defended orally.
3. Complete course 3202 (fourth semester) in a second foreign language with a grade of at least B, or demonstrate equivalent proficiency.

**Required Courses and Subject Areas:**

In order to ensure a balanced course of study, all students must complete 21 credit hours distributed as follows:

- I. Required course: Spanish 3501
- II. Required subject areas:
  - (A) Spanish peninsular literature:
    1. One course in Golden Age (Spanish 3553, 3555, 3556, or 3557)
    2. One course in Twentieth Century (Spanish 3565, 3568, 3570, or 3572)
  - (B) Spanish-American literature:
    1. One course in Prose Fiction (Spanish 3519 or 3521)
    2. One course in Poetry (Spanish 3515 or 3517)
  - (C) Hispanic linguistics:
    1. One course. Students who have not taken Spanish/Linguistics 3309 (or the equivalent) prior to undertaking M.A. course work will be required to take this course, which will count for credit toward the M.A. Those who have completed 3309 before entering the master's program will be required to complete one of the following: 3472, 3585, or 3588.
  - (D) One course selected from among the following:
    1. Spanish 3523
    2. Spanish 3557
    3. A second course in Hispanic linguistics

**Prerequisite for Graduate Courses:** Twelve semester hours of advanced courses in Spanish and a bachelor's degree.

**General Courses****3501 Research Methods and Bibliography (3-0) (I,IV)**

The basic course for graduate work in Spanish. Designed to equip the student with effective techniques for preparing the master's paper, the M.A. thesis, and other forms of scholarly research and writing.

**3502 Independent Study (3-0) (I,II,III,IV,V,VI)**

Subject to be determined in consultation with the Graduate Advisor.

**3503 Topics in Hispanic Literature (3-0) (II)**

Examination of a particular area or period in Spanish or Spanish-American literature. May be repeated once for credit as topics change.

**3598-99 Master of Arts Thesis (I,II,III,IV,V,VI)**

To be taken only by those who have been approved by the graduate committee to write a six hour thesis.

**Spanish American Literature****3511 Indigenous and Colonial Literature of Spanish America (3-0) (V)**

Readings in Spanish translations of important works of the Mayan, Nahuatl and Incan cultures. Selected works of Hispanic discoverers, conquistadors, and literati from 1442 through the eighteenth century.

**3514 Nineteenth Century Spanish-American Literature (3-0) (III)**

Study of major Spanish-American works of the nineteenth century exclusive of Modernism; notably, Neoclassic and Romantic poetry, the Romantic and realist narrative, and Gauchesque poetry.

**3515 Premodernist and Modernist Poetry (3-0) (II)**

Readings in the works of major Spanish poets of the nineteenth and early twentieth century, with special attention placed upon Ruben Dario and his school.

**3517 Postmodernist and Contemporary Poetry (3-0) (VI)**

Readings in the works of major Spanish American poets from approximately 1910 to the present.

**3519 Spanish American Short Story (3-0) (VI)**

Development of the short story form in Spanish America from its origin in the nineteenth century to the present.

**3521 Twentieth Century Spanish American Novel (3-0) (IV)**

Readings from selected works of contemporary Spanish American novelists.

**3523 The Hispanic Essay (3-0) (II)**

The development and influence of the essay in the Hispanic world. Included in the readings are both Peninsular and Latin American writers.

**3525 Spanish American Theatre (3-0) (V)**

Spanish American theatre from its beginnings to the present, with particular emphasis on the contemporary drama.

**Spanish Literature****3551 Medieval Spanish Literature (3-0) (III)**

Study of the literature of the Spanish Middle Ages, with selections from works such as the Jarchas, Poema del Cid, Milagros of Berceo, the Libro de Buen Amor, etc.

**3553 Golden Age Drama (3-0) (II)**

Readings in major works of Spain's classical theater, by authors such as Lope de Vega, Tirso de Molina, Pedro Calderon de la Barca.

**3555 Golden Age Prose (3-0) (IV)**

The evolution of the prose genre in Spain in the sixteenth and seventeenth centuries. Emphasis will be on the novel, with possible reference to didactic, philosophic, or historical works.

**3558 Golden Age Poetry (3-0) (V)**

Representative readings from Spain's major poets of the sixteenth and seventeenth centuries: Garcilaso de la Vega, Fray Luis de Leon, Gongora Quevedo and others.

**3557 Don Quixote (3-0) (I)**

Careful reading and study of Cervantes' masterpiece, and examination of critical opinion regarding it.

**3561 Nineteenth Century Spanish Poetry and Drama (3-0) (IV)**

Representative works of poetry and the theater with special emphasis on the Romantic movement.

**3563 Nineteenth Century Spanish Novel (3-0) (II)**

Regionalism, realism, and naturalism in the novel as typified by the works of such authors as Perez Galdos, Pereda, Valera, and Balsco Ibanez.

**3565 The Generation of 1898 (3-0) (V)**

Selections from the writings of important members of this literary generation, including Unamuno, Azorin, Ortega y Gasset, Baroja, and Antonio Machado.

**3568 Twentieth Century Spanish Drama (3-0) (VI)**

Study of the major twentieth century Spanish playwrights and their work.

**3570 Twentieth Century Spanish Novel (3-0) (I)**

Readings from the contemporary Spanish novel, with emphasis on works written after the Generation of '98.

**3572 Twentieth Century Spanish Poetry (3-0) (III)**

Readings in the works of modern Spanish poets, from Juan Ramon Jimenez and Federico Garcia Lorca to the present.

**Languages and Linguistics****3585 History of the Spanish Language (3-0) (IV)**

The development of the language from Vulgar Latin to modern Spanish, with selected readings from different periods.

**3586 Spanish Dialect Studies (3-0) (II)**

Study of regional and social dialects in Spain and Spanish America. May be repeated once for credit when the topic varies.

**3587 Applied Spanish Linguistics: Research Methods (3-0) (V)**

Methods, techniques, and designs of linguistic research including execution of simple research projects.

**3588 Studies in Bilingualism (3-0) (I, III)**

Study of social and linguistic aspects of bilingualism. May be repeated once for credit when topics vary.

**3589 Problems in Language Instruction (3-0) (VI)**

A course designed for language teachers involving study of psychological, linguistic and methodological aspects of language instruction and testing. Same as Linguistic 3589. May be repeated once for credit when topics vary.

**MUSIC**

301 M Fox Fine Arts  
(915) 747-5606

CHAIRMAN: Richard E. Henderson

PROFESSOR EMERITUS: Engbret A. Thormodsgaard

PROFESSORS: Chavez, Eidbo, Henderson, Paul  
Troszczewski (Tross)

ASSOCIATE PROFESSORS: Cardon, Fountain, L. Gibson,  
Stanley

ASSISTANT PROFESSORS: Baca, Evers, Heuser, Hufstader,  
King, Kress, Lewis, Mutnick, Pennington

INSTRUCTORS: Allen, Walshe, Wicks, Woodul

LECTURERS: G. Gibson, Harper, Lanham, Warren, White

**THEORY****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 3113, 3114 required. *Prerequisite:* Music 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 1111, 1112 required. *Prerequisite:* 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 processing 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:* Music 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:* Music 2217 or permission of instructor.

**1211, 1212 Sight Singing and Dictation (2-0)**

Continuation of Music 1112. Concurrent registration with 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 chords, keyboard practice. *Prerequisite:* Music 3113-14. Concurrent registration with 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:* Music 3213, 3214.

**2313, 2314 Seminar: Composition (2-0)**

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:* Music 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:* Music 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:* Music 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:* Music 3213, 3214 and four semester hours, or equivalent, of class instruments.

**2413, 2414 Advanced Composition**

A continuation of Music 2313, 2314 with emphasis upon modern music and larger forms. *Prerequisites:* Music 2313, 2314.

**2415 Pedagogy of Music Theory**

A study of philosophies of music theory in modern thought as exemplified in published texts, and a development of a pedagogical framework. *Prerequisites:* Music 2315 and permission of the Department Chairman.



**LITERATURE AND HISTORY****For Undergraduates****1141 Band Literature (3-0)**

A study of selected works in the field of band literature. Concurrent registration with band is required. May be repeated for credit. *Prerequisite:* Placement.

**1151 Choral Literature (3-0)**

A study of selected works in the field of choral literature. Concurrent registration with choir or chorus is required. May be repeated for credit. *Prerequisite:* Placement.

**1161 String Orchestra Literature (3-0)**

A study of selected works in the fields of orchestra literature. Concurrent registration with orchestra is required. May be repeated for credit. *Prerequisite:* Placement.

**1165 Chamber Music and Accompanying (3-0)**

Reading of music and the study of selected works characteristic to the performing group. May be repeated for credit. *Prerequisite:* Placement.

**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. Music Majors, Non-majors by permission of instructor.

**3124 Our Fascinating World of Music (3-0)**

A course for all students who wish to derive understanding and enjoyment from musical experiences. Guided listening to live and recorded music of a wide variety. Basic introduction to notation. No musical background is assumed.

**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.

**3128 Broadway Music (3-0)**

The influence of tin-pan-alley, vaudeville, burlesque, musical revues, and musical trends throughout the world, both classical and popular. Guest lectures, films, recordings, and live performances utilized. Open to all.

**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 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 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 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 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 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.

**2343-44 History of Ballet (2-0)**

The evolution of Ballet, choreographic styles and traditions, significant artists and their contributions, and contemporary ballet. *Prerequisite:* Music 3242.

**MUSIC EDUCATION****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:* 3214 and junior standing.

**3333 Advanced Conducting Techniques (3-0)**

Continued study of conducting and methods begun in Music 3331. Special attention is given to techniques and methods used in teaching public school music. *Prerequisite:* 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.

**3338 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 Music 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 Music 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:* Music 2412 or senior standing.

**3435 Selected Problems in Music Education**

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.

**3444 Choreography (3-0)**

Principles of development, rehearsal, and execution of ballet choreography. *Prerequisite:* Music 3342.

**3496 Professional Laboratory Experience in the Elementary Grades (1-10)**

A minimum of ten hours per week for one semester of laboratory observation and teaching experience in the elementary school music classes. For all-level teacher certification. *Prerequisites:* Six hours of Education, six hours of upper level Music Education, senior standing and written approval of Music Faculty Teacher Education Committee.

**3498 Professional Laboratory Experience in Junior and Senior High Schools (1-10)**

A minimum of 10 hours per week for one semester of laboratory observation and teaching experience in junior and senior high school classes. For all-levels teacher certification. *Prerequisites:* Six hours of education, six hours of upper level music education, senior standing and written approval of Music Faculty Teacher Education Committee.



## For Graduate Students Only

**3531 Problems in Music Education**

Educational research in the elementary and secondary school fields. Each student may conduct research on a problem of his own selection in his field of major interest. May be taken for credit in supervision, if desired. *Prerequisites:* Twelve semester hours of advanced courses in Music and a bachelor's degree. May be repeated for credit.

**3535 Field Work in Music**

The student works individually on a selected topic with an assigned specialist in that area under supervision of department head. *Prerequisites:* Twelve semester hours of advanced courses in Music and a bachelor's degree. May be repeated for credit.

**APPLIED MUSIC****ENSEMBLES**

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 instructor is required for admission.

**1102 Goldiggers (1-4)**

A course for women in dancing, twirling, pom pom and marching activities, participation in football shows and other public appearances. May be repeated for credit. *Prerequisite:* Admission by try-out only.

**1143 Band (3-0)**

May be repeated for credit. *Prerequisite:* Permission of instructor.

**1144 Orchestra (3-0)**

May be repeated for credit. *Prerequisite:* Permission of instructor.

**1145 University Chorale (Choir) (3-0)**

May be repeated for credit. *Prerequisite:* Permission of instructor.

**1146 Lab Band (3-0)**

*Prerequisite:* Permission of instructor.

**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 and permission of instructor. May be repeated for credit.

**1148 Guitar Ensemble (2-0)**

May be repeated for credit. *Prerequisite:* Permission of instructor.

**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. May be repeated for credit.

**GROUP INSTRUCTION**

Credit granted only when taken as a secondary instrument or elective. Open to all students with permission of instructor.

**2171 Piano Class (1st Semester) (3-0)****2172 Piano Class (2nd Semester) (3-0)****2271 Piano Class (3rd Semester) (3-0)****2272 Functional Piano Class (4th Semester) (3-0)****2173 Voice Class (1st Semester) (2-0)****2174 Voice Class (2nd Semester) (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 Guitar Class (2-0)**

Techniques and materials for the use of guitar as an aid in the classroom at all levels. Chording and accompaniment for vocal and instrumental solos, ensembles, and folk songs. Open to all.

**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, Voice 3391, Diction 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 2392 and permission of instructor.

**BALLET****For Undergraduates****3141-42 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:* Ballet 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:* Music 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. *Prerequisite:* Music 3242 or equivalent, junior standing and permission of the instructor.

**3441-42 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:* Music 3342.

**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 with the Department Chairman.

Consent of the instructor is required for all individual instruction.

Junior and senior courses on the major level may be used for undergraduate and graduate credit and may be repeated for credit on the undergraduate level. 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.

**For Undergraduates and Graduates**

Only *junior* and *senior* courses with "9" as the third digit are acceptable toward a graduate degree.

**For Voice, Keyboard Instruments (Piano, Organ, Harpsichord, Accordion), Orchestra and Band Instruments (Violin, Viola, Violoncello, String Bass, Flute, Oboe, Clarinet, Bassoon, Saxophone, Cornet or Trumpet, French Horn, Trombone, Baritone, Tuba, Percussion, Harp, Guitar, Synthesizer, Piano Tuning).** All Applied Music courses may be repeated for credit.

**FOR NON-MAJORS, as a Secondary Instrument, and for students needing preparatory study. Undergraduate credit only:**

**2181**

One thirty-minute lesson per week. *Prerequisite:* Preceding course or placement. Fee of \$20.

**3181**

Two thirty minute lessons and nine practice hours per week. *Prerequisite:* Preceding course or placement. Fee of \$35.

**FOR MAJORS in Voice, Theory, Music Education, and other qualified students:**

**2191, 2391**

One thirty-minute lesson per week. *Prerequisite:* Preceding course or placement. Fee of \$20.

**3191**

Two thirty-minute lessons per week. *Prerequisite:* Preceding course or placement. Fee of \$35.

**3391**

Two thirty-minute lessons and nine practice hours per week. Recital participation. *Prerequisite:* Preceding course or placement. Fee of \$35.

**FOR MAJORS in Performance:**

**4191**

Two thirty-minute lessons and fifteen practice hours per week. Recital participation. *Prerequisite:* Preceding course or placement. Fee of \$35.

**4391**

Two thirty-minute lessons and fifteen practice hours per week. Recital participation. *Prerequisite:* Preceding course or placement. Fee of \$35.

**REPERTORY CLASS**

Repertory classes offer the student performance experience and added instruction in technique and literature in a two-hour class. This course may be required by the instructor and must be concurrent with the individual (applied) instruction course. The number may be repeated for credit.

**1192 Piano Repertory (2-0)****1193 String Repertory (2-0)****1194 Guitar Repertory (2-0)****PHILOSOPHY**

203 Worrell Hall  
(915) 747-5213

CHAIRMAN: Peter Robinson

PROFESSORS: Romanell (H.Y. Benedict), Haddox, Hall

ASSOCIATE PROFESSORS: Robinson, Springer

LECTURER: Briones

**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, 3317, 3315 or 3318, 3335, 3451 and 3452.

Philosophy 3103 is a prerequisite for all advanced level courses (3300-3400). May be waived by instructor.

**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.

**3207 Search for a Contemporary Conscience (3-0)**

The critical issues of public life treated in this course are medical and environmental ethics; human rights, dignity and law; crime and punishment; government and business; sex and liberation; pacifism and violence. Issues vary each semester.

**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.

**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.

**3212 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, the Stoics and others.

**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.

**3420 Seminar in Professional Ethics (3-0)**

The study and use of ethical decision procedures in such areas as Pre-medical, Pre-law, Business, Engineering and Science.

**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 or stress an examination of historical narrative in order to compare or contrast historical with scientific explanation.

**For Graduate Students Only**

**3503 Seminar in the Philosophy and History of Science (3-0)**

A detailed study of the development of science or of one of the sciences and of scientific methods or of important historical figures such as Galileo, Newton, Darwin, Marx or Freud. The interrelationships among philosophical, theological and scientific theories are emphasized. May be repeated when content varies.

**3551 World Historical Philosophers (3-0)**

A detailed study of the life, writings and influence of one or a few selected philosophers. Usually Plato, Aristotle, Kant, and Hegel are treated in a sequence of offerings of this course. May be repeated when the course content varies.

**3552 Basic Philosophical Issues (3-0)**

Contemporary philosophical theories of perception and cognition, philosophical anthropology, the technological society and new religious sensibilities have been topics.

**3553 Independent Study**

Student research under supervision of the faculty. Permission of instructor required.

## POLITICAL SCIENCE

210 Benedict Hall  
(915) 747-5227

CHAIRMAN: C. Richard Bath

PROFESSORS EMERITI: Samuel Dale Myres, Joseph Malchus Ray

PROFESSORS: Beasley, Graves, Kruszewski, Neighbor, Segal, Straus

ASSOCIATE PROFESSORS: Bath, Lamare, Peterson, Price

ASSISTANT PROFESSORS: Allen, Argyle, Hovel, Staudt, Villarreal, Webking

**B.A. DEGREE** — In addition to the basic American Government and Politics courses 3110 and 3111 required of all students, a major in Political Science will include twenty-seven (27) semester hours in the Department, eighteen of which must be at the advanced (3300-3400) level. At least one course must be completed in four of the following fields:

American Political Processes  
Public Law  
International Relations  
Comparative Politics  
Political Theory and Thought  
Public Administration

Political Science majors are required to complete Political Science 3239, Scope and Methods in Political Science (or its equivalent) and two additional courses (six hours) from among the following five offerings:

- 1) Mathematics 3280, Introduction to Statistics I
- 2) Mathematics 3281, Introduction to Statistics II
- 3) Computer Science 3110, Introduction to Computer Programming
- 4) History 3201, Western Civilization to 1648
- 5) History 3202, Western Civilization since 1648

#### PRE-PUBLIC SERVICE STUDENTS

Political science majors wishing to enter public service, either through government agencies or through large service organizations, are to consult with the departmental undergraduate advisor in selecting courses.

**SOVIET AND EAST EUROPEAN STUDIES:** Specific requirements for all students in the program are: Russian 3301, 3303, or 3320; Political Science 3324, 3338; History 3332 and 3333, Economics 3395; Geography 3110; English 3381 or 3382. The political science major must include Political Science 3231, 3426, 3224, 3335, 3343. Other departmental requirements are three of the following: History 3202, 3369; Sociology 3425, 3455.

#### Courses For Undergraduates:

Political Science 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, and 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.
- 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 pragmatic 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, dictatorship, 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 policy 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 only 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.  
For Graduate Students Only

**Master's Degrees in Political Science****ADMISSION**

The Department of Political Science follows the requirements specified by the Graduate School for admission.

**PROGRAMS**

Departmental requirements permit students working toward a master's degree in Political Science to follow either of three programs:

**Plan I — Master of Arts with Thesis:** A thesis (six semester hours) plus twenty-four semester hours of course work. There must be a minimum of twenty-one hours including the thesis, of graduate courses (those numbered 3500 and above). Only nine hours of 3300 and 3400 courses are permitted in a program. Graduate courses must be in at least three sub-fields of Political Science. However, neither the major nor the minor respectively may include more than six of these hours. The thesis program is recommended for students who wish to study for a Ph.D. in Political Science.

**Plan II — Master of Arts, Non-Thesis:** The Master of Arts degree without thesis is recommended for students not intending to continue graduate work toward the Ph.D. Thirty-six hours of study must be completed of which only nine hours of 3300 and 3400 courses are permitted in a program. Graduate students must take graduate courses (those numbered 3500 and above) in at least three sub-fields of Political Science. A student enrolled under this plan must submit two suitably-bound graduate research papers of more substantial quality than ordinary seminar papers, each of which shall be in a different field. These papers will be submitted to a committee, including the professors under whose guidance they were done, which will judge them and conduct the final examination.

Upon the occasion of petitioning for candidacy, each graduate student shall exercise an option, either for the thesis program or for the non-thesis program. This choice is not to preclude later change to the thesis option, but the inverse is not authorized.

An optional six-hour minor in a related field is permitted in either program. The courses are to be selected in consultation with the Graduate Advisor.

Plan III — Master in Public Administration: The Department offers the professional Master in Public Administration degree (MPA). The minimum requirements for admission as set by the Graduate School will be followed. In addition, in-service applicants may be asked to submit added professional work data and letter of recommendation for evaluation. Students in this program will be required to take at least eighteen (18) hours of required courses in public administration, plus twelve (12) hours of electives and six (6) hours of internship. Students are required to submit two (2) approved internship reports or a single longer report as a part of the internship. Students who wish to enter this program should consult with the Director of the MPA Program with regard to admission, required courses, approved electives, internship, and petition for candidacy.

#### REGISTRATION

No student may be registered as a graduate student majoring in this department without the advice of, and signed approval of his program by, the Graduate Advisor. This applies not only to the initial registration, but also for each subsequent course registered for.

ALL SEMINARS may be repeated for credit.

*Prerequisite:* Graduate Standing

#### 3500 Seminar in Public Personnel Administration (3-0)

A study of organization practices and principles of public personnel administration.

#### 3501 Seminar in Advanced Research Methods in Political Science (3-0)

Required of all graduate Political Science majors. Normally, the seminar will be taken during the first semester of graduate study.

#### 1501 Political Science Laboratory (1-0)

Computer applications of political science data procurement and analysis techniques taught in Political Science 3501.

#### 3502 Seminar in Public Fiscal and Budgeting Administration (3-0)

Research, writing and discussion.

#### 3504 Seminar in Public Policy Analysis (3-0)

Research, writing and discussion.

#### 3505 Seminar in Program Implementation and Evaluation (3-0)

A study of methodologies for selecting alternatives and evaluating impacts of public policies and programs. Examples will be drawn from a wide variety of policy areas such as law enforcement, education, welfare, urban service delivery, etc.

#### 3510 Seminar in American Government (3-0)

Research, writing and discussion.

#### 3515 Comparative Analysis of the American and Mexican Political Developments (3-0)

#### 3520 Seminar in American Government and the Military (3-0)

Research, writing and discussion.

#### 3521 Seminar in the Methodology of Comparative Politics (3-0)

Advanced paradigms, methods and theoretical applications in comparative politics.

#### 3522 Seminar in the Politics of Modernizing Nations (3-0)

Research, writing, and discussion.

#### 3523 Seminar in Communist Politics (3-0)

Research, writing, and discussion.

#### 3524 Seminar in Comparative Political Cultures (3-0)

Research, writing, and discussion.

#### 3525 Seminar in Latin American Studies (3-0)

Research, writing, and discussion.

#### 3528 Seminar in Political Parties and Politics (3-0)

Research, writing, and discussion.

#### 3527 Seminar in Administrative Law and Regulation (3-0)

Research, writing, and discussion.

#### 3528 Seminar in Public Law (3-0)

#### 3530 Seminar in International Politics (3-0)

Research, writing, and discussion.

#### 3533 Seminar in International Organizations and Law (3-0)

Research, writing, and discussion.

#### 3538 Seminar in Political Theory (3-0)

Research, writing, and discussion.

#### 3538 Seminar in Administrative Theory (3-0)

Research, writing, and discussion.

#### 3540 Seminar in Foreign Policy Decision Making (3-0)

Research, writing, and discussion.

#### 3550 Seminar in Public Administration (3-0)

Research, writing, and discussion.

#### 3551 Seminar in Urban Problems (3-0)

Research, writing, and discussion.

#### 3552 Seminar in Comparative Law and Comparative Judicial Behavior (3-0)

A cross-cultural study of law and judicial decision-making. Focus may be on Canada, Mexico, Latin American countries, Japan, or Australia as compared to the United States. May be repeated for credit when topic varies.

#### 3553 Seminar in Regional and Urban Planning (3-0)

Research, writing, and discussion.

#### 3554 Seminar in Urban Politics (3-0)

Research, writing, and discussion.

#### 3555 Seminar in Urban Administration (3-0)

Research, writing, and discussion.

#### 3580 Selected Problems in Government (3-0)

Research, writing, and discussion.

#### 3591-92 Internship in Public Administration (3-0,3-0)

#### 3598-99 Thesis

## PSYCHOLOGY

212 Psychology Building  
(915) 747-5551

CHAIRMAN: James V. Devine

PROFESSORS: Coleman, Devine, Goggin, Himelstein

ASSOCIATE PROFESSORS: Barrientos, Miller, Moss, Whitworth

ASSISTANT PROFESSORS: Allen, Hosch

*Degree Requirements:*

The Psychology Department offers two programs leading to the Bachelor's Degree:

1. B.S. Degree for students who intend to pursue graduate work in psychology. Required courses are:
  - a) 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.
  - b) Minor: 18 hours (6 advanced) selected from Biological Sciences, Chemistry, Engineering, Mathematics, or Physics.
  - c) Foreign language, while not required, is strongly recommended.

For additional requirements, see Bachelor of Science degree plan.

2. B.A. Degree. Recommended for students who do NOT intend to pursue graduate work in psychology. *Specific requirements are:*
- Major: 30 hours (15 advanced)
  - Required courses: 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 applicants, the number of available faculty, and the competence of an individual student. The accepted honors candidate will enroll in Psychology 3452 during both semesters of the senior year, and will have accumulated a total of 6 hours of 3452 credit on completion of the honors program. Other regulations, procedures, and dates of use by honors candidates are available from the Chairperson, Department of Psychology.

#### For Undergraduate Credit Only

**General Prerequisites:** Psychology 3101 is prerequisite for all psychology courses, with the exceptions of Psychology 3103 and 3204. Junior standing for all 3300 or 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.

#### 2202 Social Psychology (2-0)

The study of the individual in the social context. Consideration of topics such as social cognition, person perception, nonverbal communication, social influence, attitudes, prosocial behavior, aggression, and applied social psychology. Concurrent registration in Psychology 1202 is required.

#### 1202 Laboratory for Social Psychology 2202 (0-2)

#### 1424 Laboratory for Psychobiology 2424 (0-2)

Laboratory Fee: \$3.

#### 3203 Cross-cultural Psychology (3-0)

A review of the methodology and content of research on human behavior across cross 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.

#### 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:* Psychology 3103. Concurrent registration in Psychology 1321 is required.

#### 1321 Laboratory for Experimental Psychology: Learning 2321 (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:* Psychology 3103. Concurrent Registration in Psychology 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:* Psychology 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:* Psychology 2321-1321 recommended.

#### For Undergraduates and Graduates

**General prerequisite:** Six advanced hours in psychology.



**3401 Psychological Testing (2-2)**

Introduction to and training in the administration, scoring, and interpretation of psychological tests. *Prerequisite:* Psychology 3103; Psychology 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:* Psychology 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:* Psychology 3103; Mathematics 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.

**2424 Psychobiology (2-0)**

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. Concurrent registration in psychology 1424 is required.

**1424 Laboratory for Psychology 2424 (0-2)**

Laboratory Fee \$3.

**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:* Psychology 2321-1321.

**3442 Comparative Psychology (3-2)**

A study of animal behavior with emphasis on recent contributions of ethologists and psychologists. *Prerequisite:* Psychology 2321-1321 or 6 hours of biological sciences.

**3452 Independent Research**

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.

**3460 Basic Correctional Methods (3-0)**

Reviews correlation techniques. Pearsonian  $r$ , biserial  $r$ , point-biserial  $r$  and tetrachoric  $r$ , simple and multiple regression techniques and discusses their uses in research. *Prerequisite:* Psychology 3103.

**For Graduate Students Only**

**DEPARTMENTAL REQUIREMENTS FOR M.A. —** Before being admitted to the graduate program, a psychology major must include a course in psychological statistics and in experimental psychology in the undergraduate preparation.

The department offers two programs leading to the M.A. degree: General Experimental Psychology and Clinical Psychology.

For the General Experimental Psychology program, there must be a minimum of twenty-four hours of course work and the thesis. It is the responsibility of the student to make sure that he completes the required core for the M.A. degree in General Experimental Psychology. Information on required courses, which may change from year to year, may be obtained from the Graduate Advisor.

The M.A. in Clinical Psychology requires the completion of forty-five hours, including twenty-one hours of required courses in clinical psychology. A student may, at his option, elect to include six hours of thesis in the total hours, or may elect a non-thesis program.

A student may include in his program only those courses approved by the Departmental Committee on Graduate Studies. *Prerequisite:* Twelve semester hours of advanced courses in Psychology and a bachelor's degree.

**1501-8501 Individual Research (0-3)**

Student, in conference with a member of the staff, will design and perform an original experiment. Results will be prepared for possible publication in a psychological journal. *Prerequisite:* Permission of instructor.

**3502 Advanced Experimental Psychology I (3-0)**

A survey of experimental methods used in the study of sensory processes and learning.

**3503 Advanced Experimental Psychology II (3-0)**

A survey of experimental methods and findings in the study of human learning, memory, and information processing.

**3511 Advanced Statistics: Experimental Design (3-0)**

Consideration of problems of analysis and design commonly encountered in psychological research. *Prerequisite:* Psychology 3417 or equivalent.

**3513 Seminar in Personality Theory (3-0)**

Intensive study of selected aspects of the various theories of personality.

**3514 Seminar in Verbal Learning (3-0)**

Advanced studies of verbal learning in the light of advances in psycholinguistics.

**3515 Seminar in Physiological Psychology (3-0)**

An intensive study of current developments and selected topics in the neuroanatomical and biochemical bases of behavior. *Prerequisite:* Psychology 3411 or permission of instructor.

**3520 Seminar in Learning Theory (3-0)**

Intensive study and analysis of systematic conceptions of the learning process. *Prerequisite:* Psychology 3420 or equivalent.

**3521 Seminar in Personality Assessment (3-0)**

Introduction to methods and issues in the evaluation of personality and to the projective and objective instruments to assess personality. *Prerequisite:* Psychology 3401 or permission of instructor.

**3522 Theories and Methods of Psychotherapy (3-0)**

An analysis of theory, technique and research methods used in various current psychotherapies. *Prerequisite:* Permission of instructor.

**3523 Individual Mental Tests (3-0)**

Supervised practice in the administration, scoring, and interpretation of individual tests of intelligence and other measures of cognitive functions. *Prerequisite:* Permission of instructor. Laboratory Fee \$5.

**3524 Seminar in Developmental Psychology (3-0)**

An examination of issues pertaining to human development across the life span.

**3525 Seminar in Social Psychology (3-0)**

Intensive study of current issues, theories, and methods in social psychology.

**3530 Seminar in Animal Behavior (3-0)**

A study of the recent literature in animal behavior with emphasis on the behavior of nonhuman primates.



**3547 Seminar in Behavior Modification (3-0)**

Advanced study of conditioning techniques in the treatment of behavior disorders and in the control of human behavior. *Prerequisite:* Psychology 3347 or 3420 or the equivalent.

**3550 Seminar in General Psychology (3-0)**

Advanced study of contemporary problems and issues in selected topics in psychology. May be repeated with different instructors.

**3560-9560 Clinical Internship (0-6)**

Supervised experience with clinical techniques. Each 150 clock hours is equivalent to 3 credit hours. May be repeated until 9 hours are accumulated. No more than 9 credit hours will count towards the M.A. in Clinical Psychology. *Prerequisite:* Permission of instructor, Psychology 3521, or Psychology 3523. Psychology majors only.

**3598-99 Thesis****RELIGION**

208B Graham Hall  
(915) 747-5326

**CHAIRMAN:** Howard Hallmark

**INSTRUCTORS:** Affleck, Albin, Arroyo, Fierman, Hallmark, 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 be credited with 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.

Upon recommendation by a student's academic advisor and approval by the dean, certain religion courses may be counted in Block C, Humanities, for the B.A. Degree. They may also count as free electives in other degree programs.

**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.

**3105 Contemporary Religious Studies (3-0)**

An introduction to religious studies in contemporary society; including extensive use of cosmopolitan materials as well as standard religious writings.

**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 Religion 3106. *Prerequisite:* Religion 3106.

**3108 Introduction to Judaism (3-0)**

A discussion of the various lifestyles 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:* Religion 3104 or sophomore standing.

**3202 The Life of Christ (3-0)**

An historical study of the life and teachings of Christ. *Prerequisite:* Religion 3104 or sophomore standing.

**3203 An Introduction to the Psychology of Religion (3-0)**

To introduce students to the creative dialogue between the disciplines of the psychological sciences and theological studies through the writings of psychiatry, psychoanalysis and religion. *Prerequisite:* Religion 3101 or 3104 or sophomore standing.

The following courses are open to both undergraduate and graduate students.

**3303 Archeology of the Old Testament (3-0)**

A study of archeology in Biblical Lands, as related to the Old Testament. *Prerequisite:* 3101 or 2202.

**3304 Christian and Other Traditions (3-0)**

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. *Prerequisite:* Junior standing or permission of instructor.

**3305 Introduction to Christian Ethics (3-0)**

A study of New Testament ethical teachings and their application to contemporary society. *Prerequisite:* Religion 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 Religion 3101 or 3104.

**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.

1. The Pentateuch (Torah, first 5 books of 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).

*Prerequisite:* Senior standing or permission of instructor.

**SOCIAL WORK**

**Director:** Felipe Peralta

**Bachelor of Social Work**

The Social Work Program is an interdisciplinary major related to a professional career in Social Work. Students electing the B.S.W. degree must satisfy the general requirements from the College of Liberal Arts for the B.A. degree. Special requirements for the B.S.W. degree are 30 hours in Social Work, including SW 4101, 3102, 3201, 3203, 3320, 3376, 3377, 4475, and 4476. Unless otherwise noted, Social Work 4101 is a prerequisite for all other courses in Social Work. Exceptions to this must receive permission from the director.

**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:* Social Work 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:* Social Work 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 Social Work 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 level 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:* Social Work 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 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 level standing. Completion of all courses required for field placement, or approval of Program Director.

**4475 Field Experience in Social Work (4-6)**

A laboratory learning experience in selected social welfare agencies with weekly seminars. Students are assigned to specific agencies for the semester. *Prerequisites:* Social Work 3201, 3376 and 3377.

**4476 Field Experience in Social Work (1-6)**

A laboratory learning experience in selected welfare agencies with weekly seminars. Students are assigned to specific agencies for the semester. *Prerequisite:* Social Work 4475.

**SOCIOLOGY AND ANTHROPOLOGY**

102 Old Main  
(915) 747-5740

CHAIRMAN: Howard C. Daudistel

PROFESSORS: Rivera, Stoddard

ASSOCIATE PROFESSORS: Eyde, Gerald, Goodman.

ASSISTANT PROFESSORS: Brown, Daudistel, Foster, Hedderson, Russell, Watley, Young

B.A. Degree — Specific requirements for a Sociology major are: thirty semester hours of Sociology, twenty-four of which must be at the advanced level (3300-3400). Anthropology 3302 may be counted as a Sociology course for this purpose. The following courses are required: Sociology 3101, 3111, and 3401. A minimum of nine credit hours must be selected from the following courses to fulfill the requirements for a Sociology major: Sociology 3312, 3322, 3336 or Anthropology 3302, Sociology 3355, 3380, 3381, 3425, 3447, 3455. For those contemplating graduate work in Sociology the following courses are suggested: Sociology 3312, 3425, and 3447.

The major in Anthropology requires thirty semester hours of Anthropology, eighteen of which must be at the advanced level (3300-3400). Anthropology 3101 and 3102 are required. In addition, the student must take one course from each of the following two groups: 3301, 3303 or 3304, and 3302 or 3480. The following courses are strongly recommended, though not required: Anthropology 3216, 3217 and 3220. No more than six hours of field work will be counted toward the fulfillment of the major. Linguistics 3354 may be counted as an anthropology course.

**SOCIOLOGY****For Undergraduates Only**

Unless otherwise noted, Sociology 3101 is a prerequisite for all other courses in Sociology. Exceptions to this must receive permission from the Department Chairman or Undergraduate Advisor.

**3101 Principles of 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.

**1102 Laboratory in Social Problems (0-3)**

A laboratory course for students enrolled in Soc 3102 (Social Problems) who desire more exposure to and knowledge about existing social problems. Class meets once a week. Audio-visual materials, field trips, field work and participant observation will be utilized.

**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 except sophomore standing.

**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, regionalism, 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**

**General prerequisite:** Junior standing for all 3300 and 3400 level courses.

**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.

**3304 The Community (3-0)**

A comparative study of community types; methods of studying the community, analysis of underlying social processes and institutions; trends and problems of community change.

**3311 Methods of Research (3-0)**

Basic procedure and methodology of sociology as applied by the profession to various areas of social investigation.

**3312 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.

**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 gang; factors contributing to apprehension, conviction, detention and parole; assessment of present and potential prevention programs.*

**3336 Multi-Cultural Society in the Southwest**

A comparison of values, institution 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: La Chicana (3-0)**

The course will examine the role of the Chicana in the family and the

community as well as *Chicanas' participation in the labor force and liberation movements.*

**3341 Special Undergraduate Topics: Women in Society (3-0)**

Course will focus on 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. *Prerequisite:* Anthropology or Linguistics 3220 (Same as Linguistics 3357).

**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:* Sociology 3101, 3201, and nine hours of advanced sociology.

**3404 Socio-cultural Conditions in Urban Planning (3-0)**

Review of social theories and significant research reports on cultural and

socio-economic dynamics of European and American societies affecting the development of city planning.

**3422 Political Sociology**

The study of the state and distribution of power in different societies. Topics to include classical theories of the relationship between the state and society, growth of the state sector in advanced capitalist societies, functions of the state, and empirical studies of distribution of community, national and international power.

**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 course work in sociology and consent of Department Chairman.

**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.

**For Graduate Students Only**

**M.A. DEGREE PREREQUISITES:** Twelve semester hours of advanced courses in Sociology, a bachelor's degree, graduate standing, or consent of the advisor. The units presented should include theory and methods. The advisor may recommend that six semester hours of advanced courses in Anthropology may be substituted for six of the Sociology hours.

**M.A. DEGREE REQUIREMENTS:** There are two options leading to the M.A. degree in Sociology:

The following are the requirements of the 30 unit thesis M.A. degree program: Each candidate must take one course in research methods (3512, 3520, or 3580); Sociology 3525 (Seminar in Sociological Theory), plus eighteen semester hours from the list of courses below. Enroll for at least one semester each in Sociology 3598 and 3599 (Thesis) and successfully defend before a committee the thesis while enrolled in Sociology 3598 and 3599. If the student elects to take a minor in another department or discipline, course work in Sociology will be reduced accordingly.

The following are the requirements of the 36 unit non-thesis M.A. degree program: (1) The student will complete 36 hours of graduate course work; (2) at least 27 of the 36 hours will be in 3500 level courses (that is, only nine hours of 3300 and 3400 work will be allowed for graduate credit); (3) the student will be allowed only one "C" grade in the course work for which he enrolls, being required to maintain a "B" average throughout; (4) the student will be encouraged, but not required, to take six hours course work in some discipline other than Sociology as a minor; (5) the student will have a faculty committee of three chosen by him in consultation with the Graduate Advisor and with the approval of the Graduate Dean; (6) the student will submit a suitably bound graduate research paper, beyond regular semester papers, which will be judged by the student's committee and, if approved, placed on file in the Department and in the Office of the Graduate Dean.

**3504 Seminar in Community Development (3-0)**

A theoretical and empirical analysis of community studies; community planning in comparative and historical perspective emphasizing the United States, Latin America and Europe.

**3510 Seminar in Social Organization (3-0)**

An examination of size and complexity, vertical and horizontal processes, organizational effectiveness and command and communication systems within bureaucratic and non-bureaucratic structures.

**3512 Seminar in Advanced Measurement and Inference (3-0)**

Introduction to techniques of multivariate analysis commonly used in sociology including multiple regression, factor analysis and discriminant function analysis.

**3513 Research Uses of Social Data (3-0)**

Data analysis techniques, statistical analysis and management of large data sets; the use of computer and Statistical Package for the Social Sciences. *Prerequisite:* Sociology 3312 or equivalent.

**3515 Seminar in Sociology of Deviance (3-0)**

Critical analysis of sociological theories, current research and applied approaches relevant to deviance.

**3518 Seminar in Social Differentiation**

Social stratification theory and research; contributions of Marx, Weber, Davis, Bendix, Lipset and others; methods of stratification measurement.

**3520 Seminar in Methodology (3-0)**

The field research process from initial project proposal to the final report including the integration of the planning, execution and analysis phases.

**3525 Seminar in Sociological Theory (3-0)**

The role and utility of theory within the discipline, the processes of theorizing, reconceptualizing and theory testing; theorists and theoretical trends.

**3527 Seminar in Minority Groups (3-0)**

A theoretical investigation of acculturation, accommodation and assimilation in intergroup contact, analysis of social, cultural and institutional factors affecting prejudice and discrimination.

**3533 Seminar in Youth Deviancy and Delinquency (3-0)**

Describing and treating delinquency; behavioral factors associated with deviancy; detection, detention, and prevention programs.

**3540 Seminar in Demography (3-0)**

Causes and consequences of trends in fertility, mortality and migration.

**1541-6541 Special Graduate Topics (3-0)**

A variable credit graduate course organized to investigate special topics and current issues of significance to sociologists. May be repeated for credit when content varies.

**3544 Seminar in Social Anthropology/Ethnology (3-0)**

Important theoretical perspectives in ethnology; including biological evolutionary, ecological, structural-functional, and cognitive viewpoints.

**3545 Seminar in Comparative Institutions (3-0)**

Social, economic, political and ideological institutions in primitive, preindustrial, and industrial societies, emphasizing sociocultural evolutionary processes.

**3547 Seminar in Social Impact Assessment (3-0)**

Conducting social impact assessments in planning as mandated by the National Environmental Policy Act.

**3548 Seminar in Criminology (3-0)**

Social context of criminal law and criminal justice; theories of crime and treatment programs.

**3550 Seminar in Social Change (3-0)**

Planned and unplanned social change as related to population growth, technology, environment, etc.; strategies and tactics applicable to cross-cultural and multi-class social action programs.

**3556 Seminar in the Great Sociological Classics (3-0)**

The idea of such diverse classic sociologists as Comte, Tocqueville, Marx, Weber, Simmel, Durkheim, and Pareto and their relevance to the contemporary scene.

**3560 Seminar in Marriage and the Family (3-0)**

A cross-cultural comparison of marriage and family; historical background of these institutions; changing American family arrangements as affected by social and technological changes.

**1561-6561 Graduate Research and Intern Practicum (3-0)**

A variable credit course designed to give students supervised experience in conducting sociological research as interns in community agencies. (May be repeated for a maximum of six credit hours).

**3562 Seminar in Health Services Delivery (3-0)**

Health and medical occupations and the organization of care, cure and prevention systems; social and cultural factors affecting sick roles and community health policies and practices.

**3563 Seminar on Aging (3-0)**

Social, cultural, institutional and organizational factors affecting health, aging and survivorship.

**3565 Seminar in Sociology of Education (3-0)**

Application of sociological theory and research to American education; present educational problems and possible solutions.

**3570 Seminar in Occupations and Professions**

Work in various societies; non-economic functions of occupations in modern societies; processes in selection, socialization and professionalization in occupations and professions; dimensions of leisure.

**3575 Seminar in Southwestern Cultures**

An anthropological, ethnohistorical and sociological examination of salient Southwestern cultures; Mexican-Americans; Indian societies, Blacks, Orientals, etc.

**3580 Seminar in Evaluation Research (3-0)**

Evaluation and policy related research; research techniques, including experimental, quasi-experimental; descriptive, and cost-benefit analysis; the impact of political issues on the research process.

**3581 Seminar in Social Psychology (3-0)**

Comparison of major theories of social psychology, including symbolic interactionism, exchange theory, and cognitive developmental theory; their assumptions and explanatory power.

**1590-6590 Individual Studies**

**3598-99 Thesis**

**ANTHROPOLOGY**

**For Undergraduates Only**

**3101 The Study of Man: His Body and Technologies (3-0)**

Introduction to the evolution of human behavioral systems with particular attention to the somatic and technological components. The biological development of man, from the 14 million year old ape-man Ramapithecus to modern sapiens man, is discussed and correlated with developments in house types, means of transportation, tool types and other aspects of technology. This course is not a prerequisite to Anthropology 3102.

**3102 The Study of Man: His Societies and Cultures (3-0)**

Introduction to the evolution of human behavioral systems with particular attention to the social and cultural, or ideational components. The variety of types of societies and ideologies is discussed together with the ecological situations to which they are adapted. *Prerequisite:* None.

**3205 Chicanos and Their Culture (3-0)**

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. *Prerequisite:* None.

**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. *Prerequisite:* None.

**3218 World Ethnographic Survey (3-0)**

Human behavioral adaptations to a variety of natural environments and a variety of demographic situations are discussed with reference to spe-

cific ethnic groups, such as Eskimo, Hottentot, New Guinea Enga, Iroquois, Kongo, Zulu, and Trobrianders. *Prerequisite:* Anthropology 3101 or permission of instructor.

**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. *Prerequisite:* Anthropology 3101 or permission of instructor.

**3220 Introduction to Linguistics (3-0)**

(Same as Linguistics 3220). *Prerequisite:* None in Anthropology.

**6247 Archeology Field Work (Summer Field School)**

A five weeks summer course in excavation and laboratory methods and techniques, including the formulation of hypotheses for field test and practical experience in recovering the test data through archeological survey, excavation, and laboratory analysis. One weekend and additional shorter trips will be made to Southwestern sites. A report will be required for each student. Five hours of lecture and 30 hours of field or laboratory work per week. *Prerequisites:* Anthropology 3101, 3102, and permission of instructor. Transportation fee will be charged based on location.

**3248 Archeology Field Techniques (0-5)**

Training in archeology field and laboratory techniques, including the formulation of hypotheses for field testing and practical experience in recovering data through archeological survey, excavation and laboratory analysis. Class will meet for one five-hour session each week for field work or a lecture-lab, depending upon the weather. *Prerequisites:* Anthropology 3101, 3102 and permission of the instructor.

**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. *Prerequisites:* Anthropology 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. *Prerequisite:* Anthropology 3102 or permission of instructor. 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. *Prerequisite:* Anthropology 3102 or permission of instructor.

**3304 Advanced Physical Anthropology (3-0)**

This course will focus on the evolution of the human body. Topics will include human's place in nature variation, and adaptations. *Prerequisite:* Anthropology 3101 or permission of instructor.

**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. *Prerequisites:* Anthropology 3101 and 3102 or permission of instructor.

**3306 Theory and Method in Folklore (3-0)**

A survey of folklore theory and method from the eighteenth century to the present with a focus on the various schools of thought. There will be readings in American and Mexican-American folklore materials and an introduction to fieldwork.

**3307 Folk Religion and Magic (3-0)**

A comparative study of the religions and ideologies of, especially, non-literate peoples, utilizing anthropological perspectives. The topics will be discussed from the standpoints of ecological adaptation, social function, and psychological meaning. *Prerequisite:* Anthropology 3102 or permission of instructor.

**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. *Prerequisite:* Anthropology 3102 or permission of instructor.

**3318 Folk Societies of Eurasia and Africa (3-0)**

A survey of the traditional societies and cultures of Europe, Africa, Asia, and the Pacific. Emphasis will be on culture areas and on particular societies and cultures as the results of differentiation, diffusion, and adaptation. *Prerequisite:* Anthropology 3102 or permission of instructor.

**3319 Indian Societies of the Americas (3-0)**

A survey of the Indian societies and cultures of North, Central, and South America, and the Caribbean. Emphasis will be on culture areas and on particular societies and cultures as the results of differentiation, diffusion, and adaptation. *Prerequisite:* Anthropology 3102 or permission of instructor.

**3322 Mexican Folk Society and Culture (3-0)**

A discussion of the modes of production, economics, social and political structures, values, 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, as in the work of Oscar Lewis, will also be touched upon. *Prerequisite:* Anthropology 3102 or permission of instructor.

**3336 Multi-Cultural Society of the Southwest**

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:* Anthropology 3101 or permission of instructor.

**3354 Field Methods in Linguistics (3-0)**

The procedure employed in the study of languages and language variations not associated with a written tradition. The application of field methods to a particular language variation as announced. (Same as Linguistics 3354) *Prerequisite:* Anthropology or Linguistics 3320.

**3374 Folklore of the Mexican-American (3-0)**

Same as English 3374. *Prerequisite:* None in Anthropology.

**3379 Independent Study**

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.

**3405 Culture and Personality (3-0)**

This course will consist of a discussion of cultural material in the light of anthropological personality theories. The areas of theory known as "culture and personality," "Cognitive anthropology," and "enculturation" will be emphasized.

**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 instructor.

**3485 Museology I (2-3)**

The history, philosophy and functions of museums; accession, decession, registration, cataloging and loan practices; administration, research, publications, ethics, and antiquities; storage, conservation, preservation, security and insurance; training internships and employment; use of museum objects for research, teaching and exhibition. *Prerequisite:* Advance standing or permission of instructor.

**3470 Studies in Anthropology (3-0)**

Topic to be discussed will be announced. May be repeated for credit when topic varies. Among the topics which may be covered are the following: foraging bands, tribes, chiefdoms, states, peasants, plantation communities, the Navajos, the Tarahumaras, cultural resource management, and lithic technology. *Prerequisite:* Permission of instructor.

**3480 Theory in Anthropology (3-0)**

A discussion of the goals of anthropology with a critical review of current theory and methodology. *Prerequisites:* Anthropology 3101 and 3102 or permission of instructor.

**8447 Advanced Archaeological Field Methods (5-3)**

A six week summer field course in advanced excavation, survey, and laboratory methods in archaeology. Forty hours of field work per week including lectures and laboratory work. One weekend trip and additional shorter trips will be made into the Southwestern area. *Prerequisites:* Anthropology 3101, 3102, 6247 and/or permission of instructor. Transportation fee will be charged based on location.



Eileen M. Jacobi, Dean  
Marlene H. Weitzel, Assistant Dean

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# The College of Nursing and Allied Health



## Introduction

The baccalaureate program at El Paso School of Nursing was established in 1970 under the administration of The University of Texas System School of Nursing. The University of Texas System purchased the Hotel Dieu School of Nursing physical facilities, at which time the administration of Hotel Dieu School of Nursing announced the termination of the diploma program, effective 1973. The school had been in existence since 1898. Many of the faculty and personnel became a part of the new baccalaureate program.

On March 26, 1976, by action of the Board of Regents of The University of Texas System, the School of Nursing became an integral part of the University of Texas at El Paso and was reorganized as a College of Nursing. In January 1979 the Allied Health Program was transferred from the College of Science to the College of Nursing. In April 1981 the Coordinating Board approved a change in the name of the College of Nursing to the College of Nursing and Allied Health.

The College offers an undergraduate program leading to the degree of Bachelor of Science in Nursing, as well as a graduate program leading to a Master of Science in Nursing degree. These programs have full accreditation by the National League for Nursing and are approved by the Texas State Board of Nurse Examiners.

The Allied Health Programs offered are an undergraduate program leading to the Bachelor of Science in Medical Technology and an undergraduate program leading to a Bachelor of Science in Allied Health Sciences degree.

### FACILITIES:

The College of Nursing and Allied Health is located approximately one mile from the campus of The University of Texas at El Paso and consists of 200,000 square feet for classrooms, simulation laboratories, branch library, Independent Learning Center, faculty offices, and student and faculty lounges. The Educational Media Center facilitates independent learning through the use of media instruction (audio-visual programs, programmed units, etc.). The Simulation Laboratory provides an opportunity for students to practice nursing skills before patient/client contact.

The Nursing/Medical Library is a branch of The University of Texas at El Paso Library System which affords students in the College access to the rich resources of an academic research library in addition to the more specialized collection of the Nursing/Medical Branch Library. The collection here includes over 15,000 volumes in the areas of nursing and medicine, with a strong emphasis on nursing. Publications from the American Nurses' Association and the National League for Nursing are included among the monographs.

The faculty and students have access to the clinical facilities of the hospitals and other health care agencies, as well as physicians' offices, throughout the El Paso area.

There are 17 hospitals in El Paso, with a total of 3,092 beds, and there are 9 nursing homes with 1,020 beds. A Visiting Nurse Association is available and provides for bedside nursing in the home. The Rehabilitation Center, the Human Development Center, and the Mental Health — Mental Retardation Centers, along with other similar agencies, provide excellent learning opportunities for nursing care of patients/clients with chronic disabling diseases. The City-County Health Department, Region 3 of the Texas Department of Health Resources, and other agencies, such as the American Heart Association, are available for experiences related to early case finding and prevention.

Of particular note is the tricultural border community and its special requirements, providing students with enriched sociocultural experiences.

The tricultural border population of the El Paso community is viewed as an especially important component of the clinical experience for the student (Spanish surnamed, Anglo and other — Indian, Black, Oriental). First-hand experiences with

persons whose health habits and attitudes toward health and health care are heavily influenced by sociocultural mores adds an important learning dimension, requiring the student to utilize such concepts in nursing practice. The health care system for the Indian population is under the jurisdiction of the Texas Indian Commission. As a result, the nurse working with an Indian patient/client must have unique knowledges in order to plan and effectively implement nursing care.

Due to the characteristics of the varied population and frequent travel between Mexico and the United States, there is a fertile field for nursing studies by both faculty and students in such diverse areas as communicable disease control, child-bearing practices of people in different cultures and the use of folklore in the treatment of various diseases and in mental illness.

Interdisciplinary collaboration is possible between members of other disciplines and nurses in the study of the cultures of the Southwest. It is also available in use of such agencies as Pan American Health Organization and the Customs and Immigration officials dealing with the control and prevention of disease.

## GENERAL REQUIREMENTS FOR NURSING STUDENTS

### STUDENT AFFAIRS

It is the responsibility of the student to become familiar with the various regulations of the College of Nursing and Allied Health and to comply with them.

At the time of registration and throughout a student's enrollment in the College, it shall be his responsibility to keep the dean's office informed of his current (1) local address, (2) telephone number or where he may be reached, and (3) home address and phone number. This is absolutely necessary in order that schedules, official and emergency correspondence, and emergency messages will not be delayed or lost. It is the student's responsibility to be informed of general and special notices including examination schedules on the bulletin board in the College of Nursing, and to make arrangements for the completion of all work including make-up examinations and requirements for removal of conditional and incomplete grades.

Regulations and procedures governing student life are available from the Dean of Students, U.T. El Paso, Student Union Building. All students are responsible for knowledge of and compliance with these regulations and the Regents' rules.

### Special Expenses:

Uniforms, Lab coat, cap, shoes, name pin, and identification patch are required dress for clinical practicum, at an approximate cost of \$125. Cost of books and supplies is approximately \$400.

### NURSING STUDENT ORGANIZATIONS

Two student organizations are active within the College of Nursing and Allied Health. All enrolled students are eligible for membership in the Nursing Student Organization, an affiliate of the Texas Nursing Students' Association and the National Student Nurse Association.

The U.T. El Paso chapter has goals consistent with those of the National Student Nurses' Association. Its purpose is to aid in the development of the individual student and to urge development as future health professionals and to be aware of and to contribute to improving the health care of all people.

In addition, students may belong to the Student Body Organization, independent of National Student Nurse Association. Through this organization, nursing students are represented on several campus committees and in campus activities involving the entire U.T. El Paso student body.

Breakthrough to Nursing has been a National Student Nursing Association's minority group recruitment project. It was



funded by a grant from the Division of Nursing, Department of Health, Education, and Welfare. The funding of the project terminated June, 1977. Since the project aimed to increase both the number of ethnic minority men and women in nursing and the number of minority nursing leaders, the student organization is, therefore, continuing this activity.

#### **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 range within the upper one-third of their graduating class. From time to time faculty members may also be invited to membership.

#### **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.

#### **NURSE TRAINING ACT**

This act authorizes funds of various types for assistance to nursing students. While some funds may be available for scholarships, most of the assistance will be in the form of loans.

#### **THE NURSING STUDENT LOAN PROGRAM**

Funds are provided for low-cost loans to nursing students. 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. Loan provisions include cancellation of all or part of the loans for service in nursing under specified circumstances following graduation.

#### **STATE NURSING STIPENDS**

Enacted by the 62nd Legislature, this program provides for scholarships covering all or any part of tuition costs for students in financial need enrolled in State supported baccalaureate nursing programs.

#### **ARMY ROTC**

The Army Nurse Corps (ANC) is interested in the ROTC Program as an exceptionally valuable source for ANC officers who have an appreciation of Nursing's contribution to the defense of the nation. Army ROTC offers a program whereby nursing students may earn a commission in the ANC while they complete their nursing curriculum. Scholarships that provide full tuition, books, and supply fees are available, and all advanced course students receive a monthly stipend of \$100. In addition to financial assistance, the ROTC Program offers leadership/management courses which are valuable assets in a nursing career. The Military Science Department at U.T. El Paso is committed to providing a schedule of classes and a program of instruction specifically designed to accommodate the nursing student. Interested students should contact the Professor of Military Science 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.

#### **Students From Other Institutions**

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.

#### **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. 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 in first-aid and cardiopulmonary resuscitation (CPR) must be completed before enrollment in upper division courses. In addition, evidence of an annual physical examination is required.

#### **Professional Liability Insurance**

All students enrolling in nursing courses will be required, prior to official registration each semester, to show evidence of professional liability insurance coverage of at least a minimum amount of \$200,000 limit each claim and \$600,000 limit 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 minimum grade point average of 2.0 is necessary for progress toward a degree in nursing. A grade of D or F in either theory or practicum constitutes a grade of D or F for the course. The grades used are: A (excellent), B (above average), C (average), D (inferior), F (failure). No grade below C in a nursing course is acceptable for progress towards the degree in nursing.

A student is eligible to repeat a course only upon recommendation of the faculty and the Dean of the College of Nursing and Allied Health. If a student is not recommended to repeat a professional course, he or she is no longer eligible for continuation in the nursing program.

A faculty member may drop a student from a course if the student's nursing practice is deemed to be unsafe.

##### **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.

##### **Petitions and Official Communications**

It is necessary that official communications be in writing as well as requests for release of information to other institutions.

**Change of Address**

A student is responsible for maintaining a current mailing address at the College and at the Office of Admissions and Records.

**Residence Requirement**

To receive the Bachelor of Science Degree in Nursing, a student must complete the last 30 hours of the nursing major at the upper-division level at The University of Texas at El Paso.

**Advanced Standing Examinations**

In keeping with the College's stated philosophy of learning, the faculty recognizes the many potential avenues for acquisition of the knowledge, attitudes, and skills which are deemed appropriate for a practitioner with a Bachelor of Science degree in nursing. Furthermore, the faculty believes that experiences in formal educational endeavors should build on the student's present level of achievement in an effort to maximize "actualization of individual potential." Therefore, the faculty subscribes to the principle of validation of the candidate's competencies and the awarding of credit based upon satisfactory achievement by examinations. The candidate is thus allowed to matriculate into the curricular pattern at a demonstrated level of achievement.

1. To petition for such an examination, an individual must have met all requirements for admission to upper-division courses in the College of Nursing and Allied Health.
2. The candidate should consult the Assistant Dean regarding application policies and scheduling.
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 examination may obtain the course material which would be given to a student enrolling in the course, but will not be permitted to audit or receive tutoring by The University of Texas at El Paso College of Nursing and Allied Health Faculty.
5. A fee of \$25.00 will be assessed for each examination.
6. Credit for approximately one-half of the clinical courses in nursing can be awarded by the successful completion of advanced standing examinations.
7. The challenge examinations in the clinical courses have a theoretical and clinical component. Both the theoretical and clinical portions of the challenge examination must be satisfactorily completed. Failure in one aspect constitutes failure in the examination.
8. A candidate may not retake any advanced standing examination in the College of Nursing and Allied Health.

**Higher Work After Failure**

If a student makes a D or F in a required upper-division nursing course, he may not take the next higher course until the course is repeated and passed.

**Repetition of a Course**

If a student repeats a course which was failed, the official grade is the last one made. The official grade will therefore be used in computing the grade-point average and the failing grade will not be included. Nursing courses may be repeated only one time. A student may not repeat a required upper-division nursing course for credit in which a grade of C or above has been earned.

**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 may be 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.

**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.
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. Prospective graduates are required to take a comprehensive examination at the completion of the program.

## UNDERGRADUATE PROGRAM

### Bachelor of Science in Nursing

**Philosophy**

The philosophy of The University of Texas at El Paso College of Nursing encompasses the belief that excellence in professional nursing is achieved through practice, teaching, research, and public service.

Individuals are unique and complex beings with biological, psychological and sociological needs and varying methods of communications. Their development is determined by the interaction of genetic endowment, their cultural heritage and the total environment. People have inherent dignity and worth and the right and responsibility to actively participate, as they are able, in making decisions which affect their health.

Optimum health care is the right of every individual and is provided through the cooperative efforts of a wide range of disciplines and professions. Nursing evolves its practice in response to societal needs, and is one of the interdependent helping professions committed to care of the sick, prevention of illness, and promotion and maintenance of health.

Professional nursing practice involves assessing health needs and planning, implementing, directing, and evaluating nursing care for individuals and groups in a variety of settings. It is a scientifically based process devoted to helping individuals, families, and groups make maximum use of their resources in meeting their respective health needs. It further incorporates the individualities of nurse and patient/client and is most effective when the thoughts, feelings, and values of both are recognized; therefore, a high degree of communication skill and sensitivity in interpersonal situations is required. The obligation to improve nursing practice encompasses the use of knowledge and skills as well as the systematic study of the effects of this practice on human health.

The faculty believes that learning is a lifelong process which is independent and self-initiated and results in a change or reorganization of behavior. The teaching-learning process includes teacher-student interaction in setting goals, selecting and evaluating learning experiences, and in appraising instructional methods and student progress. Learning experiences are planned to achieve integration of knowledge, skills, and attitudes defined in the educational objective.

The College is dedicated to the proposition of equal educational opportunity for all. The faculty believes that each student has dignity and worth and a background and experiences which are unique. The student shares in the responsibility for creating an educational climate which reflects democratic values, fosters intellectual inquiry and creativity, and encourages the development of each individual's potential.

The curriculum of The University of Texas at El Paso College of Nursing and Allied Health is organized as an integrated process oriented curriculum because the faculty believes that:

1. Nursing is essentially a problem solving process and improving these skills increases the nurse's ability to give better patient/client care.
2. Content is organized around concepts that can be applied in the care of individuals across all age groups and in all clinical settings, and enhances the student's learning capability.

**DEGREE REQUIREMENTS FOR THE BACHELOR OF SCIENCE IN NURSING**

This program consists of two years of lower-division courses taken in a regionally accredited college or university, followed by 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 Bachelor of Science in Nursing degree and are eligible to take the State Board Test Pool Examination for licensure as registered nurses.

**Prescribed Work — Lower Division**

Students must complete the 69 hours of course work listed below at any accredited junior or senior college or university before enrollment in upper-division courses in nursing.

**Natural and Physical Sciences**

*Chemistry 3105, 3106, and 2106 or 4107 and 4108	8
***General Biology 3105 and Lab 1107	4
***General Biology 3106 and Lab 1108	4
*Biology of the Human Body 4211	4
*Exercises in Human Physiology 1212	1
Microorganisms & Disease 3230	3
	—
	24

**Behavioral Sciences**

Psychology 3101, 3103	6
Sociology 3101	3
Psychology 3210	3
	—
	12

**General Courses**

**History 3101-3102 or 3103-3104	6
**Government 3110-3111	6
English 3111-3112	6
Nutrition (H.E. 3202)	3
	—
	21

**Professional Courses**

Conceptual Base for Nursing Practice 3250	3
Nursing: Historical, Contemporary & Future Perspectives 3251	3
Human Pathophysiology 3313	3
	—
	9

**Free Electives**

	3
	—
<b>Total</b>	<b>69</b>



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	Health Assessment	3
Nursing 7302	Theories, Principles & Skills Basic to Nursing	7
Nursing 7303	Nursing in Maintenance & Promotion of Health	7
Nursing 7370	Nursing Care of Individuals & Families Experiencing Major Health Problems	7
Nursing 7371	Nursing Care of the Individual and the Family During the Childbearing Period	7
Nursing 7410	Nursing Care of Individuals & Families Experiencing Major Health Problems	7
Nursing 7411	Nursing of People In Crisis	7
Nursing 7471	Nursing Leadership & Management	7
Nursing 7472	Primary Nursing Care	7
Nursing 3470	Health Care—Nursing Care: Portents & Challenges	3
Electives: 6 hours must be taken in the College of Nursing		6
Total.....		68
Total for Degree .....		137

\*If part of a two semester sequence, both courses are required.  
 \*\*No more than three semester hours of credit by advanced standing examination in government and three in history may be used to satisfy this requirement.  
 \*\*\*Biology 3105, 1107, 3106, 1108 are not required of students who have satisfactorily completed Human Anatomy, Human Physiology and General Microbiology at another accredited institution. Courses substituted for General Biology must be taken in the field of science.

## BACHELOR OF SCIENCE IN NURSING

### Freshman Year

1st Semester	Hrs	2nd Semester	Hrs
BIOL 3105 General Biology .....	3	BIOL 3106 General Biology .....	3
BIOL 1107 Study of Life I .....	1	BIOL 1108 Study of Life II .....	1
ENGL 3111 English Composition .....	3	ENGL 3112 Research & Critical Writing .....	3
PSYC 3101 Intro to Psych .....	3	*CHEM 3106 General Chemistry .....	3
*CHEM 3105 General Chemistry .....	3	*CHEM 2106 Lab for Chemistry .....	2
HIST 3101 U.S. History to 1865 or Hist 3103 America, 1500 to 1815 .....	3	HIST 3102 U.S. History Since 1865 or Hist 3104 America, 1815 to present .....	3
	16		15

### Sophomore Year

1st Semester	Hrs	2nd Semester	Hrs
BIOL 4211 Biology of Human Body .....	4	MICR 3230 Microorganisms & Disease .....	3
BIOL 1212 Human Physiology .....	1	PSYC 3103 Statistical Methods .....	3
PSYC 3210 Developmental Psych .....	3	POSC 3111 American Govt & Politics .....	3
SOCI 3101 Principles of Sociology .....	3	HE 3202 Nutrition Education .....	3
POSC 3110 American Govt & Politics .....	3	NURS 3251 Nursing: Historical, Contemporary & Future Perspectives .....	3
Free Elective .....	3		
	17		15

### Summer Sessions

NURS 3250 Conceptual Base for Nursing Practice .....	3	NURS 3313 Human Pathophysiology .....	3
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### Junior Year

1st Semester	Hrs	2nd Semester	Hrs
NURS 3302 Health Assessment .....	3	NURS 7370 Nursing Care of Individuals & Families Experiencing Major Health Problems .....	7
NURS 7302 Theories, Principles & Skills Basic to Nursing .....	7	NURS 7371 Nursing Care of the Individual & Family During the Childbearing Period .....	7
NURS 7303 Nursing in Maintenance & Promotion of Health .....	7	**Elective in Nursing .....	3
	17		17

### Senior Year

1st Semester	Hrs	2nd Semester	Hrs
NURS 7410 Nursing Care of Individuals & Family Experiencing Major Health Problems .....	7	NURS 7471 Nursing Leadership & Mgmt .....	7
NURS 7411 Nursing of People in Crisis .....	7	NURS 7472 Primary Nursing Care .....	7
**Elective in Nursing .....	3	NURS 3470 Health Care-Nursing Care: Portents and Challenges .....	3
	17		17

\*Chemistry 4107-4108 may be substituted for this sequence.

\*\*Electives may be taken in summer sessions.

### Required Courses

#### 3250 Conceptual Base for Nursing Practice (3-0)

Focuses on integration of the natural and behavioral sciences which form a frame of reference for nursing. *Prerequisites:* Biology 4211, 1212; Chemistry 3105, 3106, or 4107, 4108; Psychology 3103; Sociology 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.

#### 3302 Health Assessment (2-1)

The focus of the course is evaluation of the health status of individuals of varied ages, including obtaining 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:* N3250 and N3251 or concurrent with N3250 and N3251.

#### 3313 Human Pathophysiology (3-0)

This course provides the student with an opportunity to gain in depth knowledge of pathophysiological processes and their impact on the body systems. Study will focus on disease or trauma-induced alteration of regulatory mechanisms within the human organism, thereby strengthening the knowledge base necessary for the nurse to promote adaptation of the individual and/or family. *Prerequisites:* Biology 4211 and 1212.

#### 7302 Theories, Principles and Skills Basic to Nursing (3-8)

Application of problem solving process in nursing care of individuals with emphasis on the communication and health assessment skills. Clinical practicum will be provided in hospitals and a variety of other community health agencies. *Prerequisite:* 3302 or concurrent with 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 hospitals and a variety of other community health agencies. *Prerequisite:* 7302 or concurrent with 7302. Laboratory fee: \$4.

**7370 Nursing Care of Individuals and Families Experiencing Health Problems (3-8)**

Focus is on developing skills in assessing patient health needs and planning for and implementing nursing care of the sick individual. Emphasis is on the care of the client/patient with bone and muscle impairments, renal and cardiac diseases and gastrointestinal and neurological disorders. Clinical practicum is provided in hospitals and other community health agencies. *Prerequisite:* 7303. Laboratory fee: \$4.

**7371 Nursing Care of the Individual and Family During the Childbearing Period (3-8)**

The study of individuals and families during the childbearing period. Focus is on nursing care of the pregnant woman and family dynamics throughout the maternity cycle. Clinical practicum is provided in the labor and delivery suite, post-partum unit, newborn nursery, and in the home. *Prerequisite:* 7370 or concurrent with 7370. Laboratory fee: \$4.

**7410 Nursing Care of Individuals and Families Experiencing Major Health Problems (3-8)**

Application of the nursing process in the care of individuals, families, and groups experiencing major and/or complicated health problems. Emphasis is on factors affecting fluid and electrolyte balance, oxygenation, obstruction, and family roles and relationships as they relate to the continuity of nursing care of the hospitalized patient/client and his family. Research studies are reviewed and used in planning nursing care. Clinical practicum is in the hospital, other community health agencies, and the home. *Prerequisite:* 7371. Laboratory fee: \$4.

**7411 Nursing of People in Crisis (3-8)**

Application of the nursing process to the care of individuals, families, and groups experiencing potential or actual crisis situations. Emphasis is on severe anxiety, cellular dysfunction, and mass disaster as they relate to the nursing care of the patient/client. Research studies are reviewed and used in planning nursing care. Clinical practicum is in the hospital and other community health agencies. *Prerequisite:* 7410 or concurrent with 7410. Laboratory fee: \$4.

**7471 Nursing Leadership and Management (3-8)**

Concepts of management are studied. The role of the nurse as a manager of the nursing care team and as part of the total health care team is explored. Current nursing research studies are critiqued for their value in identifying a foundation for the development of a scientific base for the practice of nursing and in developing a conceptual framework for providing patient/client care. Concepts are utilized in care of individuals and families in hospitals and other community settings. *Prerequisite:* 7411. Laboratory fee: \$4.

**7472 Primary Nursing Care (3-8)**

A culminating experience focusing on meeting the total health needs of the individual, the family and the community. The role assumed by the nurse as a primary care provider is practiced. *Prerequisite:* 7471 or concurrent with 7471. Laboratory fee: \$4.

**7273 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. *Prerequisite:* 7411 or concurrent with 7471-7472.

**Electives****1380, 2380, 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 skills in the care of patients who require surgical intervention. Focus is on the complete cycle of care, preoperative care including health teaching, participant observer in the operating room, and postoperative care. *Prerequisite:* 7370-7371. Laboratory fee: \$4 for 6305.

**3307, 6307 Pharmacodynamics in Nursing (3-0), (3-6)**

This course provides the advanced nursing student with a knowledge

base in 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:* 7302 and 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. *Prerequisites:* 7302, 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 disorders of the genitourinary tract and corollary problems of human sexuality. Emphasis is on the pathological state and the psychosocial impact on the individual, family and society. *Prerequisites:* 7370, 7371. Laboratory fee: \$4 for 6317.

**3318, 6318 Gerontological Nursing (3-0), (3-6)**

This course provides an opportunity for the student to gain increased knowledge and skill in the management of the health and nursing care of the elderly. The focus of study will be on the bio-psycho-social aging processes of individuals and families as a basis for nursing practice. *Prerequisite:* 7303. Laboratory fee: \$4 for 6318.

**3319, 6319 Transcultural Nursing (3-0), (3-6)**

This course is designed to enhance the student's ability to identify, understand and accept cultural, religious and socio-economic customs, values and practices. The emphasis will be placed on relating these factors to health and health care. Laboratory fee: \$4 for 6319.

**3320, 6320 Nursing Care of High Risk Individuals During the Childbearing Period (3-0), (3-6)**

An opportunity to gain further nursing knowledge and skills in the care of high risk mothers and babies during the childbearing process and the psychosocial implications upon the family. Abnormal physiological changes in both mother and/or baby are studied. *Prerequisites:* 7370-7371. Laboratory fee: \$4 for 6320.

**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. The reactions and responses to dying and death of persons of all ages will be discussed through the perspective of the dying person, his family, health care personnel, social worker, clergy and morticians. 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. *Prerequisites:* 7411 or consent of instructor. Laboratory fee: \$4 for 6401.

**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 which may require medical-surgical nursing intervention within the emergency room setting. Clinical practicum provides experience in the assessment, care and evaluation of patients in acute distress and/or life-threatening situations. *Prerequisites:* 7410-7411 or consent of the instructor. Laboratory fee: \$4 for 6405.

**3410, 6410 Therapeutic Nursing Strategies for Mental Health (3-0), (3-6)**

An opportunity to gain further nursing 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. *Prerequisites:* 7410-7411 or consent of the instructor. Laboratory fee: \$4 for 6410.

**6306 Rural Health Nursing (3-6)**

An opportunity to gain further *nursing knowledge and skills 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. *Prerequisites:* 7370-7371. Laboratory fee: \$4.

**3419, 6419 Nursing to Promote Psychosocial Adaptation (3-0), (3-6)**

An indepth study of psychopathological behaviors and their impact on the individual, family and community. The focus is on assessing behaviors and developing therapeutic nursing interventions to assist in development, maintenance and enhancement of socially acceptable adaptive behaviors. *Prerequisite:* 7303. Laboratory fee \$4 for 6419.

**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.

**REGISTRATION AS A PROFESSIONAL NURSE**

All students seeking registration must successfully complete the State Board Test Pool Examination administered by the Board of Nurse Examiners for the State of Texas. The Board of Nurse Examiners may refuse to admit persons to its examinations or may refuse to issue a license or certificate of registration for any of the following reasons:

- (1) the violation, or attempted violation, of any of the provisions of the law regulating the practice of professional nursing;
- (2) conviction of a crime of the grade of felony, or a crime of lesser grade which involves moral turpitude;
- (3) the use of any nursing license, certificate or diploma which has been fraudulently purchased, issued, counterfeited, or materially altered;
- (4) the impersonation of, or the acting as proxy for, another in any examination required by this law to obtain a license as a registered nurse;
- (5) intemperate use of alcohol or drugs which, in the opinion of the Board, endangers patients;
- (6) unprofessional or dishonorable conduct which, in the opinion of the Board, is likely to injure the public.

Application for registration by examination requires submission of a complete application at least one month in advance of the State Board Test Pool Examination. The following procedures will be followed by the College and the applicant:

- (1) Students must obtain the application from the College of Nursing and Allied Health.
- (2) The application is to be completed, notarized, and returned to the State Board of Nurse Examiners as soon as possible with the registration fees.
- (3) The baccalaureate degree must be awarded before the student is eligible to take the State Board Test Pool Examination and obtain a temporary permit.
- (4) Students planning to take the State Board Test Pool Examination in another state must obtain information regarding procedure from the agency responsible for professional nurse registration in that state.

**GRADUATE PROGRAM**

Objectives of the Master of Science in Nursing Program

The Graduate Program in Nursing of The University of Texas at El Paso College of Nursing and Allied Health is designed to permit students to earn a Master of Science degree within an area of clinical nursing practice as the clinical major and a functional nursing minor. The clinical majors include medical-

surgical, psychiatric-mental health nursing and maternal-child nursing.

Functional minors include preparation for teaching in nursing education programs or clinical supervision and administration in nursing.

The master's program focuses on the nursing care of clients/patients who present multiple health problems that are complex. The core of knowledge focuses on developing the interrelationship between theory, practice and research.

The objectives evolve from the philosophy and purpose of the graduate program. The graduate of the Master's Program in Nursing has been provided the basis for:

1. Synthesizing theoretical formulations from nursing and other disciplines and developing specific applications in the care of individuals, families and communities.
2. Evaluating the use of theoretical formulations in direct nursing care and related activities in a selected area of clinical specialization.
3. Critically analyzing health and nursing problems using the scientific method of investigation as a base for resolving their problems.
4. Implementing the nursing process in the support of individuals, families, and communities with multifaceted problems in promotion, attainment, and maintenance of health.
5. Analyzing theoretical and conceptual frameworks from nursing and other disciplines and in their application within the context of practice, teaching, supervision and administration in nursing.
6. Seeking opportunities to continue personal and professional development and also to provide a base for doctoral study.
7. Promoting nursing as a profession by utilizing opportunities for leadership at the local, national and international level.

**PROCEDURES AND REQUIREMENTS FOR ADMISSION**

Applicants for admission apply to the Office of the Dean of the Graduate School. (Forms may be obtained from the College of Nursing and Allied Health Student Office.)

The following documentation must be presented for admission:

1. Completed application form.
2. Evidence of satisfactory completion of an NLN accredited baccalaureate nursing program in the United States or proof of equivalent education at a foreign institution. Two complete official transcripts on which the degree has been posted must be submitted.
3. Evidence of satisfactory grade point average in upper division (junior and senior level) course work, and in any graduate work completed. (A course in statistics is required.)
4. A satisfactory score on the Graduate Record Examination Aptitude Test (GRE).
5. Recommendations by the committee on graduate studies in the College of Nursing and Allied Health.
6. Evidence of a complete and satisfactory physical examination.
7. Current liability insurance in the amount of \$200,000-\$600,000.
8. Current licensure or a temporary permit to practice as a Registered Nurse in one of the states or territories. Students from other countries must be authorized to practice nursing in their own country.
9. Current cardiopulmonary certification.

**Transfer of Credit**

A maximum of 6 semester hours applicable to a graduate degree in nursing may be transferred to another institution. For approval of transfer credit:

1. The Student must be admitted to the Graduate School of The University of Texas at El Paso.
2. The student must submit:
  - a. Title and number of course(s) to be considered.
  - b. Official catalog containing the course title(s), number(s), and course description.
  - c. Rationale for taking course(s).
  - d. Reasons for requesting the waiver.

All courses must have been completed within six (6) years before the degree is awarded. Courses in which a grade of C or less has been earned will not be authorized for transfer. In cases where such transfer is approved, the student must still meet the residence requirements of two full semesters or the equivalent.

For information on reservation of undergraduate credit to be counted as graduate credit, please refer to Graduate School section of this catalog.

**DEGREE REQUIREMENTS FOR THE MASTER OF SCIENCE IN NURSING**

The degree plan calls for a minimum of 36 semester hours, at least 30 hours of which is course work. Twelve semester hours of core courses are required of all students. It is expected that the core courses will be completed before enrollment in clinical or functional courses. Students may choose the thesis or non-thesis option.

If the thesis option is chosen, the research proposal completed as a part of the core research course can be used as the thesis proposal. Each student choosing the thesis option enrolls in the Advanced Research course. The thesis must be approved by the thesis advisor and by two other supervisory committee members. The thesis committee members are selected by the student and approved by the Graduate Advisor and Graduate Dean. During work on the thesis, the student registers for a minimum of six hours of thesis credit. At completion of the thesis the candidate defends the thesis to the satisfaction of the supervisory committee.

Students choosing the non-thesis option complete nine credits of graduate level electives in nursing which have been approved by the academic advisor. A comprehensive examination is required for completion of the degree.

**Student Employment**

Student employment is a personal decision; however, it is up to the student to arrange the work schedule so as not to interfere with classes and clinical practicum requirements.

**DEGREE PLAN FOR MASTER OF SCIENCE IN NURSING****REQUIRED CORE COURSES:**

- 3501 — Issues and Problems in Health Care  
 \*3505 — Community Health: Community Mental Health Nursing  
 \*3510 — Nursing Theories and Processes  
 3570 — Fundamentals on Nursing Research

**FOR THE MEDICAL-SURGICAL MAJOR:**

- 3519 — Advanced Human Physiology  
 \*3520 — Medical-Surgical Nursing I  
 \*3521 — Medical-Surgical Nursing II

**FOR THE PSYCHIATRIC-MENTAL HEALTH MAJOR:**

- \*3525 — Psychiatric Mental Health Nursing I  
 \*3527 — Psychiatric Mental Health Nursing II  
 \*3531 — Psychiatric Mental Health Nursing III

**MATERNAL-CHILD HEALTH:**

- \*3511 — Family Health Care During Pregnancy  
 \*3512 — Maternal Intensive Care  
 \*3513 — Neonatal Intensive Care

**NURSING CARE OF CHILDREN:**

- \*3515 — Child Health in the Family Setting  
 \*3516 — Nursing Care of Ill Children  
 \*3517 — Nursing in School Health

**ADDITIONAL COURSES:**

For Students Planning to Teach:

- \*3545 — Curriculum and Instruction in Nursing Education  
 \*3547 — Roles and Functions of the Teacher in Nursing

For Students Planning for Administrative Positions:

- \*3535 — Nursing Administration  
 \*3541 — Supervision and Administration of Health Care Agencies

**THESIS — OPTION**

- 3571 — Advanced Research in Nursing  
 3598 — Thesis  
 3599 — Thesis

**NON-THESIS — OPTION**

Electives — 9 credits in the College of Nursing and Allied Health

Graduate Course Descriptions

General Prerequisite: Graduate Standing

**3501 Issues and Problems in Health Care**

Assessment of issues and problems in relation to meeting health needs of society and their relevance to nursing and health care.

**3503 Historical and Philosophical Study of Nursing**

Focus is on study of the historical basis of nursing with special emphasis on the development of a philosophical base applied to contemporary nursing practice.

**3505 Community Health: Community Mental Health Nursing**

Analyzes social issues influencing community health and community mental health nursing. Focuses on continuity of health care with emphasis on physiological and psychosocial problems of patients/clients and families. Complex community systems, strategies of primary prevention, social intervention and health maintenance are emphasized. Includes practicum.

**3510 Nursing Theories and Processes**

Focuses on critical analysis of current nursing theories and related nursing process conceptualizations and their application to selected clients/patients and families. Includes practicum.

**3511 Family Health Care During Pregnancy**

Involves an analysis and evaluation of theories and concepts used by nurses to promote a high level of wellness for families during the mother's pregnancy. The relationship of the health status of the family after delivery to the health status of the family prior to and during the pregnancy will be analyzed. *Prerequisite:* Core courses. Includes practicum.

**3512 Maternal Intensive Care**

Focuses on the nursing management of the high risk pregnant woman during pregnancy, delivery, and post-partum. Nursing measures dealing with psychosociological and physiological factors will be analyzed and evaluated. *Prerequisite:* 3511. Includes practicum.

**3513 Neonatal Intensive Care**

Focus is on intensive care of the high risk newborn infant. Involves analysis and evaluation of nursing measures utilized to combat oxygen deprivation, fluid and electrolyte imbalance, and sensory deprivation. *Prerequisite:* Core courses and consent of instructor and advisor. Includes practicum.

\*Course includes a practicum.



**3515 Child Health in the Family Setting**

Nursing management of specific health problems of children in the family and community setting. Focuses on the analysis and evaluation of developmental theories in relation to family health. Collaborative roles and relationships with other health team members and program planning are studied. *Prerequisite:* core courses. Includes practicum.

**3516 Nursing Care of Ill Children**

Nursing management of the acutely or chronically ill child. Research in the areas of factors affecting growth and development and rehabilitation are analyzed and evaluated in terms of their applicability for aiding the child and his family to deal with the illness. *Prerequisite:* 3515. Includes practicum.

**3517 Nursing in School Health**

Evaluation of the nursing process within the scope of the school health program. Current issues and trends in school health, administrative patterns and policies, and the nurse's role in an educational setting are analyzed. *Prerequisite:* 3515. Includes practicum.

**3519 Advanced Human Physiology**

This course provides opportunities to acquire knowledge related to the physiological systems of man. It considers in-depth study of these systems with relationships being made into and inter cellular development.

**3520 Medical-Surgical Nursing I**

Focuses on application of nursing process with selected clients/patients along the age continuum, manifesting deviations from health and requiring admission to the health care system. Consideration is given to physiological, psychological and sociological concepts basic to nursing care. *Prerequisites:* 3519 and core courses. Includes practicum.

**3521 Medical-Surgical Nursing II**

Focuses on provision of continuity of care for selected patients/clients of any age who manifest deviations from health. Peer review is utilized in evaluation of nursing care. *Prerequisite:* 3520. Includes practicum.

**3525 Psychiatric-Mental Health Nursing I**

Systematic study of the theoretical foundations of psychotherapeutic nursing practice. Clinical practicum focuses on individual therapy with patients/clients. Work with members of other disciplines. *Prerequisite:* core courses. Includes practicum.

**3527 Psychiatric-Mental Health Nursing II**

Social systems approach to the study of mental health and mental illness. Emphasis is on the group approach to treatment. *Prerequisite:* 3525. Includes practicum.

**3531 Psychiatric-Mental Health Nursing III**

Concentration is on the multi-problem family in crisis or impending crisis and on the therapeutic interventions required in these situations. The nursing process is used as a framework for planning and evaluating nursing interventions. The seminar focuses on the cultural aspect of family interactions, dynamics of family functioning, and the use of psychodynamic nursing intervention utilized by the students with families in therapy. *Prerequisite:* 3527. Includes practicum.

**3533 Legal and Leadership Responsibilities in Nursing**

Comprehensive study of ethical and legal processes, the role of the nurse, and the role of the professional organization in resolving legal, ethical and moral issues.

**3535 Nursing Administration**

The application of principles of administration and management inherent in situations in which nurses work. Assessment of management tools and methods related to materials and human resources. *Prerequisite:* core courses. Includes practicum.

**3537 Leadership in Educational Programs in Nursing**

Seminar in principles and practices related to administration of educational programs in nursing. Focuses on accreditation process, faculty and student rights and responsibilities, personnel administration and public relations. *Prerequisite:* Consent of instructor. Includes practicum.

**3539 Organizational Approach to Labor-Management Relations**

Focuses on labor-management relationships applicable to nursing administrators. The legislative process of the analysis of the legal interpretation of pertinent cases will be discussed. *Prerequisite:* Consent of instructor.

**3541 Supervision and Administration of Nursing Services in Health Care Agencies**

Analyzes the development of nursing within the health care system. Focuses on supervision, organization and administration of nursing services for patient/client care. *Prerequisite:* 3535. Includes practicum.

**3545 Curriculum and Instruction in Nursing Education**

Principles, issues and problems of design in nursing in higher education. Curriculum patterns, programs and strategies in curriculum design and instruction. *Prerequisite:* core courses. Includes practicum.

**3547 Roles and Functions of the Teacher in Nursing**

Focus is on content delineation, planning, organizing, delivering and evaluating the teaching-learning process in nursing. *Prerequisite:* 3545. Includes practicum.

**3550 Seminar on International Health**

Focuses on major international health programs as they relate to cultural, ecological, and economic factors. The roles of the local, state, national and international agencies in relationship to health are studied. *Prerequisite:* core courses.

**3570 Fundamentals of Nursing Research**

An introduction to the methods of scientific inquiry, research design and techniques of data collection, analysis and presentation of data. *Prerequisite:* course in statistics.

**3571 Advanced Research in Nursing**

In-depth study of methods of scientific inquiry, research design, use of interviews and questionnaires, and sampling techniques. Students will plan and execute a research project centered upon the clinical study of nursing care or other aspects of nursing. *Prerequisite:* 3570. Required of all students selecting thesis option.

**1594-6594 Independent Study**

A course designed by the student to meet an individual learning need. *Prerequisite:* Consent of advisor, instructor and Dean. One to six credit hours.

**3598-3599 Thesis**

A research study devoted to the scientific investigation and resolution of a clinical nursing problem or a problem in nursing.

## 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 responsibility to provide such learning experiences for practicing nurses. This is accomplished by developing, implementing and evaluating a variety of continuing education programs within the locality most accessible to the practitioner. The faculty believes that such continuing education programs, in the form of workshops, conferences, seminars, self-study modules and short courses, serve as an adjunct to formal study and are not substitutes for further formal education.

## ALLIED HEALTH PROGRAMS

Coordinator: Mary Hume

The programs in Allied Health are administered in the College of Nursing and Allied Health. The degrees offered are the Bachelor of Science in Allied Health Sciences and the Bachelor of Science in Medical Technology.

## UNDERGRADUATE PROGRAMS

### Bachelor of Science in Allied Health Sciences

This program will provide allied health practitioners holding associate degrees and professional certification the opportunity to continue their formal education to the baccalaureate level while remaining in their chosen allied health profession. 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 delivery systems within it, and develop skills in management and supervision, and allied health education.

The curriculum builds upon the previous educational experiences of students by allowing up to 60 semester hours of credit earned during the student's associate degree program to be counted toward meeting degree requirements. Licensed graduates from 2 and 3 year nursing programs are excluded from this program. Entry into program requires professional certification in an allied health field recognized by the university.

**Allied Health Curriculum (Total: 136 hours)**

- I. **Professional Foundation (40 hours)**  
Allied Health specialty courses from associate degree programs
- II. **General Foundation (28 hours)**
  - \*English 3111-3112 6 hrs.
  - \*History 3101-3102 6 hrs.
  - \*Political Science 3110-3111 6 hrs.
  - Math 3280, 1282 4 hrs.
  - \*Electives 6 hrs.
- III. **Life and Physical Science (32 hours)**
  - \*Algebra 3 hrs.
  - \*Biology 8 hrs.
  - \*Chemistry 8 hrs.
  - \*Microbiology 4 hrs.
  - Electives 9 hrs.

\*May be part of 60 hrs. transferable credit.

**Recommended Elective Courses**

**Biological Sciences:**

- Biology 3318 — Developmental Biology
- Biology 1319 — Experimental Embryology
- Biology 3320 — Genetics
- Biology 3424 — Animal Behavior
- Micro 3459 — Public Health
- Zoology 2364 — Medical Parasitology
- Zoology 1365 — Identification of Human Parasites

**Physical Sciences:**

- Chemistry 3430 — Topics in Biochemistry
- Chemistry 3324-1324 — Organic Chemistry
- Chemistry 3325-1325 — Organic Chemistry
- Chemistry 3432 — Biochemistry
- Chemistry 3326 — Physical Chemistry
- Chemistry 1326 — Laboratory for Chemistry 3326
- Physics 3331 — Contemporary Physics
- Physics 3478 — Undergraduate Special Topics

**Psychology:**

- Psych 3424 — Psychobiology
- Psych 3411 — Physiological Psychology
- Psych 3420 — Learning Theory
- Psych 3315 — Psychology and the Law
- Psych 3304 — Differential Psychology

IV. **Allied Health Core (18 hours)**

- HE 3301 — Community Hygiene 3 hrs.
- HE 3404 — Public Admin. I 3 hrs.
- HE 3405 — Public Health Admin. II 3 hrs.
- AHS 3311 — Infection Control in Health Care Facilities 3 hrs.
- Soc 3362 — Medical Sociology 3 hrs.
- Nursing 3380 — Special Topics (Therapeutic Communication Skills) 3 hrs.

V. **Students will choose one of the following areas of concentration:**

- A. **Specialization in Allied Health Administration (18 hrs.)**
  - Mgmt 3300 — Introduction to Management 3 hrs.

- Mgmt 3310 — Introduction to Organizational Behavior 3 hrs.
- Acct 3309 — Survey of Accounting Principles, Techniques and Concepts 3 hrs.
- AHS 3400 — Health Care Administration 3 hrs.
- AHS 6401 — Practicum in Allied Health Admin. 6 hrs.
- B. **Specialization in Allied Health Education (18 hrs.)**
  - AHS 3412 — Curriculum Development in Allied Health Sciences 3 hrs.
  - Ed. P. 3201 — Introduction to Educational Psychology 3 hrs.
  - AHS 3410 — Educational Evaluation in the Health Sciences 3 hrs.
  - AHS 3411 — Clinical Education for the Allied Health Professionals 3 hrs.
  - AHS 6402 — Practicum in Allied Health Education 6 hrs.

**Pre-Allied Health Professions Advising**

Students seeking health-related careers in professional programs not currently offered at UTEP can enroll in the pre-professional curricula. Upon completion of the prescribed courses, the student must apply to the appropriate institution for admission. Enrollment in the professional schools is limited. Therefore, a high cumulative grade point average and a high grade point average in the science courses is essential if a student is to be in a competitive position for acceptance. Acceptable grade point averages vary according to the programs.

Students interested in allied health fields should obtain specific course requirements from the professional school offering the program and bring this information to the division for advising.

**Bachelor of Science in Medical Technology**

Program Director: Gail Ackall

The Medical Technology degree requires 100 semester hours of general course work listed below. In addition, a year of professional training and 35 semester hours of credit is required at a hospital accredited by the Committee on Allied Health Education Accreditation of the American Medical Association. In El Paso, the University has developed the Medical Technology Program in affiliation with local hospitals.

Acceptance into the Medical Technology Program at The University of Texas at El Paso is on a competitive basis. Students will be evaluated on grade-point average and personal interview.

**Prescribed Work**

Students must complete the 100 hours of general course work listed below before being eligible for the clinical year of training.

	Credit hrs.
<b>BIOLOGY</b>	
General Biology 3105-06, 1107-08	8
Functional Biology 3214, 1215	4
Genetics 3320	3
Human Anatomy & Physiology 4211	4
Exercises in Human Anatomy & Physiology 1212	1
<b>MICROBIOLOGY</b>	
General Microbiology 3240, 1241	4
Pathogenic Microbiology 3343, 1344	4
Immunology 3453, 1454	4
Medical Mycology 3455, 1456	4
<b>ZOOLOGY</b>	
Medical Parasitology 2364, 1365	3
Vertebrate Physiology 2480, 2481	4
<b>CHEMISTRY</b>	
General Chemistry 3105-06, 2106	8
Analytical Chemistry 2213, 2214	4
Organic Chemistry 3324-3325, 1324-1325	8

<b>MATHEMATICS</b>	<i>Credit hrs.</i>	<i>riology, mycology, parasitology and virology, with emphasis on their relationship to human disease.</i>
Statistics I 3280, 1282	4	
Pre-calculus 4110	4	
<b>PHYSICS</b>		<b>1406 Serology</b>
General Physics 4103-4104	8	The theoretical aspects of immunologic procedures are presented and related to the diagnosis of disease.
<b>ENGLISH</b>		<b>1407 Routine Analysis</b>
English Composition 3111	3	The anatomy and physiology of the kidney and the relationship of abnormalities in the urine to renal and systemic disease are studied. Physical and chemical constituents of other body fluids and their relationship to disease states are also studied.
Research and Critical Writing 3112 or Linguistics 4112-4113	3	
<b>POLITICAL SCIENCE</b>		<b>5408 Clinical Chemistry Laboratory</b>
U.S. Government 3110-3111	6	<i>This clinical rotation deals with manual and automated laboratory procedures for quantitation of chemical constituents of blood and other body materials. The student learns the principles of quality control, instrumentation, and radioisotopic, titrimetric, colorimetric, spectrophotometric and fluorometric procedures.</i>
<b>HISTORY</b>		<b>3409 Hematology-Coagulation Laboratory</b>
U.S. History 3101-3102 or History 3103-3104	6	The study of morphology of the cellular blood elements including the automated and manual enumeration of these elements and the various tests for detection of abnormal conditions of hematopoiesis. The mechanisms of coagulation and laboratory studies for clotting defects are studied in the coagulation rotation.
<b>ELECTIVES</b>		<b>3410 Immunohematology Laboratory</b>
8 Semester Hours (6 in non-science areas)	8	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.
Total	100 hours	<b>3411 Microbiology Laboratory</b>
The clinical year of experience begins in the senior year after completion of the 100 hours of coursework listed above. The curriculum of the clinical year consists of theory and clinical practicum in the affiliate institutions. Classes for the clinical year begin in June of each year and continue for 12 consecutive months.		
<b>Clinical Year Course Descriptions</b>		
<i>(Prerequisite: Admission to the Clinical Year of Training)</i>		
<b>4401-4402 Clinical Chemistry I and II</b>		
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.		
<b>3403 Hematology-Coagulation</b>		
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.		
<b>3404 Immunohematology</b>		
The theoretical principles of basic immunology, serologic procedures, cytogenetics and fundamentals of collection, processing, storage and pretransfusion testing of whole blood and its components and derivatives are presented.		
<b>3405 Microbiology</b>		
This course is a comprehensive study of the medical aspects of bacteriology, mycology, parasitology and virology, with emphasis on their relationship to human disease.		



**Biological Sciences**  
**Chemistry**  
**Geological Sciences**  
**Mathematical Sciences**  
**Physics**

**Choo-Seng Giam, Dean**  
**William C. Cornell, Assistant Dean**  
**Michael Eastman, Assistant Dean**

**Physical Science Building 209A**  
**(915) 747-5536**

# **The College of Science**

## COLLEGE OF SCIENCE

The College of Science consists of the Departments of Biological Sciences, Chemistry, Geological Sciences, Mathematical Sciences and Physics.

### GRADUTE PROGRAMS

The Department of Geological Sciences offers the Doctor of Geological Sciences degree.

Each department offers the Master of Science degree subject to the general requirements listed in the Graduate School section of this catalog. The Department of Biological Sciences also offers a non-thesis Master of Science degree option limited to certified teachers. Departmental requirements for graduate degrees are described in the following pages under the appropriate departmental heading. In addition, the College of Science offers an interdisciplinary graduate degree which is outlined below.

### MASTER OF SCIENCE IN INTERDISCIPLINARY STUDIES (MSIS)

The M.S.I.S. degree requires 36 hours of graduate credit coursework spread among at least three departments, not necessarily all in science, with no more than 15 hours in any one department. It is a non-thesis program. A personalized curriculum is available for each student depending on individual interests. The program is designed for students with a bachelor's degree who wish to expand their knowledge at the graduate level not only in their undergraduate field of study, but particularly in other areas. Specific requirements for the degree are shown in the Graduate School section of this catalog.

### 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. The Department of Mathematical Sciences offers the Computation Option of the Computer Science Bachelor of Science degree. 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.

### DEPARTMENTAL HONORS PROGRAMS

The Departments of Chemistry 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 39 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 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 4110, 1110, 4111, 1111, 4112, 1112, 4113, and 1113 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 39 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, Geology, Mathematics, 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 (GSCI) until such time as a major is selected. Students not planning to obtain a degree from the College of Science in areas such as pharmacy, optometry, or other health-related fields should also list their major as General Science. Students planning to enter medical or dental schools normally obtain a B.S. degree 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 require advisement prior to registration and are encouraged to complete advising prior to final examination 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 seek advice from one of the following:

1. The Assistant Dean of Science if undecided about the specific major.
2. The Office of Health-Related Programs (College of Nursing and Allied Health) if planning to enter one of the allied health fields (Medical Technology, Occupational Therapy, Physical Therapy).
3. The College of Nursing and Allied Health if planning to enter a nursing career.

### 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 ob-

tained 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.

## 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 (Physical Science Building 202). 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.

## 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.	Spring Semester	Hrs.
Mathematics (Pre-Calculus*)	4	General Biology	4
General Biology	4	General Chemistry	5
General Chemistry	3	English	3
English	3	Math (Calculus)	3/4
History of the U.S. or American Government	3		

### Chemistry

Fall Semester	Hrs.	Spring Semester	Hrs.
General Chemistry	3	General Chemistry	5
Mathematics (Pre-Calculus*)	4	Math (Calculus)	3/4
English	3	English	3
History of the U.S.	3	History of the U.S.	3
American Government	3	American Government	3

### Geological Sciences

#### GENERAL GEOLOGY OPTION:

Fall Semester	Hrs.	Spring Semester	Hrs.
Geology	4	Geology	4
Mathematics (Pre-Calculus*)	4	Calculus	3/4
English	3	English	3
History or Political Science	3	Chemistry	3
		Electives	3

#### GEOPHYSICS OPTION:

Fall Semester	Hrs.	Spring Semester	Hrs.
Geology	4	Geology	4
Mathematics (Pre-Calculus*)	4	Calculus	3/4
English	3	Physics	4
History or Political Science	3	Physics Laboratory	1
		Chemistry	3

### Mathematics

Fall Semester	Hrs.	Spring Semester	Hrs.
Mathematics (Pre-Calculus*)	4	Calculus	3/4
English	3	English	3
History of the U.S. or American Government	3	History of the U.S. or American Government	3
Electives	3/6	Electives	3/6

### Physics

Fall Semester	Hrs.	Spring Semester	Hrs.
Physics Lab I	1	Physics Lab II	1
Mathematics (Pre-Calculus*)	4	Physics	4
English Composition	3	Calculus	3
American Government	3	English	3
Electives	3/6	American Government	3
		Electives	3/6

\*A student may enroll in Math 4111 (Calculus) if he has the appropriate prerequisite.

## BIOLOGICAL SCIENCES

226 Engineering Science Complex  
(915) 747-5164

CHAIRMAN: John R. Bristol

PROFESSORS: Canaris, Duke, Eklund, Harris, Metcalf,  
Robertstad, Webb, Zajic

ASSOCIATE PROFESSORS: Bristol, Chrapliwy, Ellzey,  
Freeman, Hunter, Reid Worthington

ASSISTANT PROFESSORS: Jones, Rael, Redetzke, Salo

**B.S. Degree:** Specific course requirements for the Biological Science major with concentration in the three major areas are:

- A. Microbiology — Biology 3105-06, 1107-08, 3214, 1215, 3216, 1217, 3320 and elective Biological Sciences courses making a total of 38 semester hours including 18 hours of advanced courses: Chemistry 3105-06, 2106, Mathematics 4111 and 3212 or 4111 and Statistics 3280, 1282, 3281. A total of 18 semesters hours of Chemistry is required for a minor.
- B. Botany or Zoology — All of the Biology core courses and elective Biological Sciences courses making a total of 38 semester hours including 18 hours of advanced courses: Chemistry 3105-06, 2106, Mathematics 4111 and 3212 or 4111 and Statistics 3280, 1282, 3281. A total of 18 semester hours is required for a minor. Acceptable minors are Chemistry, Engineering, Geological Sciences, Mathematics, Physics and Computer Science.

**B.A. Degree:** Specific course requirements for the Biological Sciences major with concentration in the three major areas are: the above stated specific requirements excepting that the total Biological Sciences requirement is 30 semester hours including 15 hours of advanced courses, and the B.A. degree requires no minor.

All undergraduate Biology majors are required to consult with and have their enrollment forms signed by their departmental advisor before every enrollment.

An entering freshman student with at least one year of high school biology with an "A" or "B" in biology and a SAT score of at least 1000 may take an advanced placement examination given by the University Counseling Service covering Biology 3105, 3106, 1107 and 1108.

### BIOLOGY

For Undergraduates

#### 3105-06 General Biology\* (3-0)

A modern approach to the principles of biology, stressing the evolutionary relationship of plants and animals to success in the biosphere. Required of all Biology majors and minors as a prerequisite for all other Biology courses. Biology 1107 must be taken concurrently with Biology 3105 and Biology 1108 concurrently with Biology 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 Biology 1212. *Prerequisites:* Biology 3105-06 and 1107-08.

#### 1212 Exercises in Human Anatomy/Physiology (0-2)

Methods in and principles of human anatomy and physiology. Concurrent with Biology 4211. Laboratory fee: \$8.

\*Core Courses

#### 3214 Functional Biology\* (3-0)

Ultrastructure biochemistry and physiology of prokaryotic and eukaryotic organisms. Homeostasis, Metabolism, membrane structure, cell or-

ganelles, conduction, contraction and pigmentation. Concurrent with Biology 1215. *Prerequisites:* Biology 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 Biology 3214. Laboratory fee: \$8.

#### 3216 General Ecology\* (3-0)

Relations of biota to the physical and biological environment. *Prerequisites:* Biology 3105-06, and 1107-08. Biology majors must take 1217; non-majors may take Biology 3216 without 1217.

#### 1217 General Ecology Investigative Techniques\* (0-3)

Demonstrations and application of ecological concepts with emphasis on field work. Concurrent with Biology 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 Biology 1319. *Prerequisites:* Biology 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 Biology 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:* Biology 3105-06, 1107-08, 3214 and 1215

#### 3321 Evolutionary Theory\* (3-0)

Development of evolutionary thought, evidences of evolution and the evolutionary processes. *Prerequisites:* Biology 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:* Biology 3216. Also recommended: Physical Geography 3106.

#### 1324 Plant Ecology Techniques (0-3)

Field and laboratory techniques for studying plant function in the ecosystem. Concurrent with Biology 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:* Biology 3216. Recommended course: Physical Geography 3106.

#### 1326 Animal Ecology Techniques (0-3)

Field and laboratory techniques for studying animal function in the ecosystem. Concurrent with Biology 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 Biology 1328. *Prerequisites:* Biology 3216 and a minimum of eight hours of Chemistry. Recommended Microbiology 3240 and 1241. Also listed as Microbiology 3328.

#### 1328 Microbial Ecosystems Techniques (0-3)

Techniques employed in studying microbial ecology and environmental microbiology. Concurrent with Biology 3328. Also listed as Microbiology 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:* Biology 3105-06, 1107-08, or permission of instructor.

#### 3410 Ecosystems Analysis (3-0)

Systems analysis and simulation modeling of natural ecosystems. Con-

current with Biology 1410. *Prerequisites:* Biology 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 Biology 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:* Biology 3105-06, 1107-08, 3214, 1215, sixteen hours of Chemistry and English 3359.

**2423 Transmission Electron Microscopy (0-4)**

Techniques and instruments used to analyze cell structure and function. Concurrent with Biology 3422. Laboratory fee: \$8.

**3424 Animal Behavior (3-0)**

Theories and experiments that elucidate the biological basis for the behavior of animals. *Prerequisites:* Biology 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.

**6425 Field Biology (3-9)**

Collection and study of organisms under field conditions. *Prerequisites:* Core courses and consent of instructor. Summer only. Laboratory fee varies.

**3490 Biological Practicum (3-0)**

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 Biological Practicum and/or Special Problems 3498 will count toward graduation.

**1498-3498 Special Problems (0-6)**

Laboratory research conducted by advanced students. Only biology majors will be accepted. No more than 6 hours of 1498-3498 may be counted toward the BA or BS degree in Biological Sciences. *Prerequisites:* Junior standing and consent of the instructor. Laboratory fee: \$8.

## MICROBIOLOGY

### 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:* Biology 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 Microbiology 1241. *Prerequisites:* Biology 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 Microbiology 3240. Laboratory fee: \$8.

### For Undergraduates and Graduates

**3335 Mycology (3-0)**

Phylogenetic relationships among fungi as determined by taxonomy, biochemistry, and physiology. Concurrent with Microbiology 1336. *Prerequisites:* Biology 3105-06, 1107-08; Microbiology 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 Microbiology 3335. Laboratory fee: \$8.

**3343 Pathogenic Microbiology (3-0)**

A study of the epidemiology, pathogenicity and host response to disease-producing microorganisms. Concurrent with Microbiology 1344. *Prerequisites:* Microbiology 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 Microbiology 3343. Laboratory fee: \$8.

**2347 Determinative Microbiology (2-0)**

Cultivation, characterization, and systematics of microorganisms. Concurrent with Microbiology 2348. *Prerequisites:* Microbiology 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 Microbiology 2347. *Prerequisites:* Microbiology 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 Microbiology 1328. *Prerequisites:* Biology 3216 and a minimum of eight hours of Chemistry. Recommended course: Microbiology 3240, 1241. Also listed as Biology 3328.

**1328 Microbial Ecosystems Techniques (0-3)**

Techniques employed in studying microbial ecology and environmental microbiology. Concurrent with Microbiology 3328. Also listed as Biology 1328. Laboratory fee: \$8.

**3345 Microbial Physiology (3-0)**

Biochemical cytology, growth, nutrition, metabolism and genetics of microorganisms. Concurrent with Microbiology 1346. *Prerequisites:* Microbiology 3240 and 1241, Chemistry 3324 and 1324.

**1346 Microbial Physiology Methods (3-0)**

Techniques used to study structures and physiological activities of microbial cells. Concurrent with Microbiology 3345. *Prerequisites:* Microbiology 3240 and 1241, Chemistry 3324, and 1324. Laboratory fee: \$8.

**3349 Bacterial Genetics (3-0)**

The evolution, cytological basis, and molecular aspects of bacterial genetics; population changes; types of genetic transfer and regulatory genes. *Prerequisites:* Microbiology 3240 and 1241.

**3350 Food Microbiology (3-0)**

Study of microbial spoilage of foods, contamination of foods, and food-borne diseases. Concurrent with Microbiology 1350. *Prerequisites:* Microbiology 3240-1241.

**1350 Food Microbiology Techniques (0-2)**

Methods of food preservation. Concurrent with Microbiology 3350. *Prerequisites:* Microbiology 3240, 1241.

**3451 General Virology (3-0)**

Structural, physiological and genetic aspects of bacterial, animal and plant viruses. Concurrent with Microbiology 1452. *Prerequisites:* Microbiology 3240, 1241 and 3345 or consent of instructor.

**1452 General Virology Techniques (0-3)**

Techniques used to study viruses. Concurrent with Microbiology 3451. Laboratory fee: \$8.

**3453 Immunology (3-0)**

Antigens and antibodies, humoral and cellular immunity, *in vitro* reactions, cell types in immune processes, transplants. Concurrent with Microbiology 1454. *Prerequisites:* Microbiology 3240 and 1241, Chemistry 3324-1324, 3325-1325.

**1454 Immunology Techniques (0-3)**

Antigen-antibody reactions as applied to diagnosis and research *in vitro* reactions, immunoelectrophoresis, fluorescent antibody techniques, hypersensitive reactions. Concurrent with Microbiology 3453. Laboratory fee: \$8.

**3455 Medical Mycology (3-0)**

A study of the fungi of medical importance. Concurrent with Microbiology 2456. *Prerequisites:* Microbiology 3343 and 1344.

**1456 Medical Mycology Techniques (0-3)**

Diagnosis and identification of medically important fungi. Concurrent with Microbiology 2455. 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, acetone-butanol, acetic acid, lactic and other organic acids, antibiotics, polysaccharide, 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:* Junior or senior standing and Microbiology 3328 & 1328.

**3461 Soil and Geomicrobiology (3-0)**

Principles of microbial growth, interfacial phenomena and autotrophic heterotrophic mineral cycles: carbon, nitrogen, sulfur and selenium, phosphorous, 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****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:* Biology 3105-06. Recommended for students interested in botany, forestry and wildlife management.

**3330 Comparative Plant Morphology (3-0)**

Life histories, phylogenetic relationship of vascular and non-vascular plants. *Prerequisites:* Biology 3105-06, 1107-08.

**3333 Plant Anatomy (3-0)**

Initiation, development and structure of cells, tissues and tissue systems in roots, stems, leaves and flowers. Concurrent with Botany 1334. *Prerequisites:* Biology 3105-06, 1107-08.

**1334 Plant Anatomy Techniques (0-3)**

Microscopic studies of the internal structure of flowering plants. Concurrent with Botany 3333. Laboratory fee: \$8.

**3335 Mycology (3-0)**

Phylogenetic relationships among fungi as determined by taxonomy, biochemistry, and cytology and physiology. Concurrent with Botany 1336. Also listed as Microbiology. *Prerequisites:* Biology 3105-06, 1107-08 and Microbiology 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 Botany 3335. Also listed as Microbiology. Laboratory fee: \$8.

**2337 Plant Taxonomy (2-0)**

Characteristics, classification and phylogenetic studies of native and ornamental vegetation. Concurrent with Botany 2338. *Prerequisites:* Biology 3105-06, 1107-08.

**2338 Plant Identification Techniques (0-4)**

Collection, systematic identification and preservation of Southwestern flowering plants. Concurrent with Botany 2337. *Prerequisites:* Biology 3105-06, 1107-08. Laboratory fee: \$8.

**3340 Plant Physiology (3-0)**

Plant function at the tissue, cell, and molecular level. *Prerequisites:* Biology 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 Botany 3340. Laboratory fee: \$8.

**3430 Advanced Plant Ecology (3-0)**

The study and description of plant communities and the factors which determine them. *Prerequisites:* Biology 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 Botany 1473. *Prerequisite:* Senior standing in Biology.

**1473 Phycological Methods (0-3)**

A review of methods and techniques of phycology. Concurrent with Botany 3472. Laboratory fee: \$8.

**ZOOLOGY****For Undergraduates and Graduates****2364 Medical Parasitology (2-0)**

A survey of medically important parasites. Concurrent with Zoology 1365. *Prerequisites:* Biology 3105-06, 1107-08.

**1365 Identification of Human Parasites (3-0)**

Techniques used to identify human parasites and infections. Concurrent with Zoology 2364. Laboratory fee: \$8.

**3366 Invertebrate Zoology (3-0)**

Survey of the invertebrates, exclusive of protozoa and insects, stressing phylogeny. Concurrent with Zoology 1367. *Prerequisites:* Biology 3105-06, 1107-08.

**1367 Invertebrate Zoology Investigative Techniques (0-3)**

Morphology and taxonomy of invertebrates, exclusive of protozoa and insects. Concurrent with Zoology 3366. Laboratory fee: \$8.

**2368 Entomology (2-0)**

Morphology, taxonomy and life histories of insects. Concurrent with Zoology 1369. *Prerequisites:* Twelve hours of Biological Sciences and junior standing.

**1369 Entomology Techniques (0-3)**

Observation, collection and identification of insects. Concurrent with Zoology 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:* Biology 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:* Biology 3105-06, and 1107-08, or Geology 3101-02, or permission of instructor. Concurrent with Zoology 1455.

**1455 Vertebrate Paleontology Techniques (0-3)**

Collection, preservation, identification and curation of vertebrate fossils. Concurrent with Zoology 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:* Biology 3105-06 and 1107-08 or Geology 3101-02, or permission of the instructor. Concurrent with Zoology 1457.

**1457 Advanced Vertebrate Paleontology Techniques (0-3)**

Collection, preservation, identification and curation of vertebrate fossils. Concurrent with Zoology 3456. Laboratory fee: \$8.

**3470 Protozoology (3-0)**

The morphology, taxonomy and physiology of the free-living and symbiotic protozoa. Concurrent with Zoology 1471. *Prerequisite:* Senior standing in Biology. May be counted as Zoology or Microbiology.

**1471 Protozoological Methods and Techniques (0-3)**

Concurrent with Zoology 3470. Laboratory fee: \$8.



**3473 Animal Parasitology (0-4)**

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 Zoology 1477. *Prerequisite:* 14 Core hours.

**1477 Lower Vertebrate Identification Techniques (0-3)**

Recognition of selected local fish, amphibians and reptiles; methods of preparation to study specimens and techniques of collection and data gathering. Concurrent with Zoology 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 Zoology 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 Zoology 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 Zoology 1481. *Prerequisites:* Biology 3105-06, 1107-08, 3214, 1215 and Chemistry 3105-06 and 2106.

**1481 Vertebrate Physiology Methods (0-3)**

Techniques and instrumentation used in study of vertebrate function. Concurrent with Zoology 3480. Laboratory fee: \$8.

**Departmental Requirements for M.S. Degree**

In addition to other, general catalog prerequisites for entering students, 8 semester hours of General Chemistry are required in both options listed below.

**THESIS OPTION.** Thirty semester hours are required for this degree. Nine semester hours of undergraduate upper division courses (0300 or 0400) may be counted for graduate credit. A minimum of 21 of the 30 semester hours must be in graduate courses (0500), of which six hours of Thesis (Biology 3598-3599) will be counted towards the 30 semester hour requirement. Biology 3502 (Research in the Biological Sciences) may be taken for not more than a total of six hours credit toward the 30 semester hour requirement. Each student is required to take Seminar (1530) twice for two hours of credit toward the degree. Six hours in a supporting area minor may be accepted by the department. A thesis describing original work is required and must be defended orally before receiving the degree. The student should decide on an area of specialization and select a supervising professor within 12 semester hours of admission. The supervising professor will act as chairman of the thesis committee, which will be comprised of a minimum of three graduate faculty members including one from outside the Department of Biological Sciences.

**NON-THESIS OPTION.** This program is limited to certified teachers. The total credit hours required for the degree is 36. Fifteen hours of upper division, undergraduate courses (0300-0400) is the maximum acceptable. No more than 3 hours of Research in the Biological Sciences (3502) may be counted towards the degree. Each student is required to take Seminar (1530) twice for two hours of credit toward the degree. A minor of not more than 9 hours from outside of the Biological Sciences may be included if approved. An examination is required prior to conferral of the degree.

**Graduate Courses**

**3501 Selected Advanced Topics in the Biological Sciences (3-0)**

Topics vary; course in the form of formal classes. May be repeated for credit.

**2502-5502 Research in the Biological Sciences**

Emphasizes research, with writing and discussion. Not given as a formal class. May be repeated but for no more than six hours of credit. Laboratory fee: \$8.

**3504 Developmental Cytology (3-0)**

Cellular and molecular aspects of plant and animal development.

**3505 Herpetology (2-3)**

A study of the morphology, taxonomy and life histories of reptiles and amphibians. Laboratory fee: \$8.

**3507 Biology of the Pleistocene (3-0)**

A study of the organisms of the Pleistocene.

**3509 Microbial Genetics (3-0)**

A study of the genetics of microorganisms.

**3512 Recent Advances in Microbiology (3-0)**

Current topics in Microbiology.

**3513 Biogeography (3-0)**

Geographic distribution of plants and animals, and analysis of causative factors.

**3514 Physiological Ecology (2-3)**

Physiological adaptations of organisms to different environments, desert adaptations emphasized. Laboratory fee: \$8.

**3515 Analytical Cytology (1-4)**

Techniques of fixation, ultramicrotomy, photography, vacuum evaporation and transmission electron microscopy with interpretation of results. Laboratory fee: \$8.

**3516 Biosystematics (3-0)**

Methods and principles of taxonomy, classification, and systematics.

**3517 Plant Ecology (3-0)**

Plant communities and factors determining them.

**3518 Identification and Ecology of Desert Plants (2-3)**

The identification and adaptation of desert plants. Laboratory fee: \$8.

**3519 Ecology and Physiology of Animal Parasites (2-3)**

Field and laboratory investigations of animal parasites. Laboratory fee: \$8.

**3520 Neuroendocrine Physiology (2-3)**

Neural control of endocrine secretion in vertebrates and invertebrates. Laboratory fee: \$8.

**3522 Malacology (2-3)**

A survey of mollusks, emphasizing the fauna of the Southwest. Laboratory fee: \$8.

**3523 Ultrastructure (3-0)**

Current research advances in cellular biology.

**3524 Mammalogy (2-3)**

Class Mammalia, with emphasis on morphological, physiological, ecological, and behavioral adaptations to past and present environments. Laboratory fee: \$8.

**3526 Advances in Immunological Concepts (2-3)**

Study of immunological and immunochemical concepts. Emphasis will be placed on recent experimental advances in immunology. Laboratory involves experimental approaches that are in current use in immunology research. *Prerequisites:* Microbiology 3453 and 1454 or approval of instructor. Laboratory fee: \$8.

**3527 Ecological Theory and Its Application (3-0)**

Recent advances in ecological theory and their application to questions in adaptation, community structure, and environmental science.

**3528 Determinative Methods in Biological Sciences (3-0)**

Study and application of specialized determinative methods in the biological sciences. The digital computer is utilized. *Prerequisites:* Computer Science 3110 and Mathematics 3280 or equivalent training.

**3529 Physiology of the Bacterial Cell (2-3)**

The study of the biochemical and physiological processes occurring in the bacterial cell. Emphasis will be placed on recent experimental approaches that are in current use in microbial physiology research. *Prerequisite:* Approval of instructor. Laboratory fee: \$8.

**1530 Seminar (1-0)**

Topics vary and are presented by enrollees and other speakers.

**3598-99 Thesis**

## CHEMISTRY

201 A Physical Science Building  
(915) 747-5701

CHAIRMAN: William C. Herndon

PROFESSOR EMERITUS: Lewis Frederick Hatch

PROFESSORS: Alexander, Davis, Eastman, Herndon, Levitt,  
Pannell, Parkanyi, Whalen

ASSOCIATE PROFESSORS: Cabaness, Ellzey, Lloyd, Rivera

ASSISTANT PROFESSORS: Becvar, Chang, Scruggs

**B.S. Degree** — Specific course requirements for the Chemistry major are: Chemistry 3105-06, 2106, 3321-22, 3310, 1310, 2321-22, 3351-52, 1351-52, 2411-12, 3465, plus 6 additional advanced credit hours in Chemistry. Chemistry 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): Chemistry 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 Chemistry 3428, 3432, 3462, 3465, 1476-3476, 2411-2412, 3470-1470. Plan II (General): Chemistry 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 Chemistry 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 a 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 Chemistry 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 Chemistry 3105 and 3106. If the score is 80 or above, the corresponding grade and credit for Chemistry 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.

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 Chemistry 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. For students who need a foundation for work in advanced chemistry and related science. *Prerequisites:* Math 4110 (or concurrently), a Math SAT score of at least 600. Concurrent enrollment in Chemistry 3106-2106 required.

### 4105-3106 General Chemistry (4-0;3-0)

Chemistry 4105 includes more introductory material than Chemistry 3105 and is designed for students who have not had a high school course in chemistry. For description and prerequisite see Chemistry 3105-3106. Concurrent enrollment in Chemistry 3106-2106 required.

### 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 Chemistry 2214 required. *Prerequisite:* Chemistry 3106.

### 2214 Laboratory For Chemistry 2213 (0-6)

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 Chemistry 3321 or 3322. *Prerequisites:* Chemistry 3106-2106 and concurrent registration in Chemistry 1324.

### 1324 Laboratory for Chemistry 3324 (0-3)

Laboratory fee: \$8.

### 3325 Organic Chemistry (3-0)

A continuation of Chemistry 3324 with emphasis on organic compounds and their reactions in living systems. May not be counted in addition to Chemistry 3321 or 3322. *Prerequisite:* Chemistry 3324 and concurrent registration in Chemistry 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 Chemistry 3321-1321 and in Chemistry 3322-1322 required. *Prerequisite:* Chemistry 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 Chemistry 1310, 3351, and 1351 required. *Prerequisites:* Chemistry 3322, Mathematics 3217 (or concurrently) and Physics 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 Chemistry 3351-1351 and in Chemistry 3352-1352 required. *Prerequisites:* Chemistry 3106-2106, Mathematics 3217 (or concurrently) and Physics 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 as applied to the life sciences. May not be substituted for or counted in addition to Chemistry 3351 or 3352. *Prerequisites:* Chemistry 3325, completion of the math requirement for life sciences majors, and concurrent registration in Chemistry 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:* Chemistry 3322 or 3325.

**3430 Topics in Biochemistry (3-0)**

Topics may include protein chemistry, enzyme kinetics, enzyme mechanisms, membrane structure and function, and function, and protein biosynthesis. *Prerequisite:* Chemistry 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:* Chemistry 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:* Chemistry 3352-1352 or consent of instructor.

**2412 Laboratory for Chemistry 2411 (0-6)**

Laboratory fee: \$8.

**3454 Advanced Topics In Physical Chemistry (3-0)**

Topics selected from quantum theory, statistical thermodynamics, surface chemistry, photochemistry, chemical kinetics and other areas of physical chemistry. Course may be repeated for credit when topics vary. *Prerequisite:* Chemistry 3352.

**3462 Structure of Matter (3-0)**

Introduction to quantum theory; atomic and molecular structure; atomic and molecular spectra; chemical bonding. *Prerequisites:* Physics 4210 and 4211 and Chemistry 3352 or consent of 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:* Chemistry 3351 or consent of instructor.

**1465 A Laboratory Course in Inorganic Chemistry (0-4)**

Provides laboratory practical exposure for students taking Inorganic Chemistry 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:* Chemistry 3432.

**4420 Analytical Organic Chemistry (1-9)**

Identification techniques and functional group analysis of organic compounds. *Prerequisites:* Chemistry 3322 and 4411. Laboratory fee: \$8.

**4370 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:* Chemistry 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

**For Graduate Students Only**

The department offers a program of study and research leading to the degree of Master of Science with a major in Chemistry. In addition to the institutional requirements for a Master of Science degree, which include a thesis, the candidate must also meet the following stipulations: A minimum of 21 of the required 30 hours of credits must be in courses at the 0500 level. Credits must include at least one graduate level course in three of the four areas of organic chemistry, physical chemistry, inorganic chemistry or analytical chemistry. The candidate must also enroll in Chemistry 1595 during each semester of residence. Not more than one hour of Chemistry 1595 may be counted toward the 30 credit hour requirement. The normal program for the MS degree in Chemistry will include 6-hours of supporting work from approved fields. A program of specialization in chemical physics may be elected with the permission of the graduate advisor. Such a program may include within the required 30 hours of credits an excess of 6 hours but not more than 12 hours in the related fields (e.g., Physics, Mathematics). Courses of study are designed for each student in consultation with the advisor. Each student must confer with the graduate advisor prior to each registration and any changes in the approved course program must be approved by the student's supervising committee. The thesis presented for this degree must describe original work related to a research problem of some importance. The thesis must be defended orally.

**3518 Advanced Analytical Chemistry (3-0)**

Chemical equilibrium and its application to separation and analysis.

**3519 Contemporary Topics in Analytical Chemistry\* (3-0)**

Selected topics of current interest in modern analytical chemistry.

**3521 Advanced Organic Chemistry I (3-0)**

A survey of the more important type of reactions in organic chemistry; reaction mechanisms, stereochemistry of intermediates and products; current structural theory. *Prerequisite:* Chemistry 3322.

**3522 Advanced Organic Chemistry II (3-0)**

A continuation of Chemistry 3521. *Prerequisite:* Chemistry 3521.

**3529 Contemporary Topics In Organic Chemistry\* (3-0)**

Selected topics of current interest in descriptive and theoretical organic chemistry.

**3539 Contemporary Topics in Biochemistry\* (3-0)**

Selected topics of current interest in organic or physical aspects of biological chemistry.

**3551 Advanced Physical Chemistry I (3-0)**

Schroedinger wave mechanics; atomic and molecular quantum states; applications to the treatment of wave functions for atoms and molecules.

**3552 Advanced Physical Chemistry II (3-0)**

Classical and statistical thermodynamics; applications to physical and chemical systems.

**3559 Contemporary Topics in Physical Chemistry\* (3-0)**

Selected topics of current interest in experimental and theoretical fields of physical chemistry.

\*May be repeated for credit when topics vary.

**3561 Advanced Inorganic Chemistry (3-0)**

Ionic, metallic and covalent bonding, valence bond, molecular orbital and ligand field theories; structure and properties of coordination compounds, metal carbonyls and pi-complexes.

**3569 Contemporary Topics in Inorganic Chemistry\* (3-0)**

Selected topics in theoretical inorganic chemistry.

**1595 Graduate Seminar (1-0)****1596-6596 Graduate Research in Chemistry**

*Prerequisite:* Graduate standing and staff consent.

**3598-3599 Thesis**

\*May be repeated for credit when topics vary.

**GEOLOGICAL SCIENCES**

201C Geology  
(915) 747-5501

ACTING CHAIRMAN: George Randy Keller, Jr.

PROFESSORS EMERITI: John M. Hills, William Samuel Strain

PROFESSORS: Clark, Davidson, Hoffer, Lemone, Roy (*L. A. Nelson Professor*), Schmidt

ASSOCIATE PROFESSORS: Cornell, Goodell, Keller, Pingitore

ASSISTANT PROFESSORS: Lloyd, Marston, Stuart

**B.S. Degree — Geology** — Specific course requirements for the geology major are Geology 3101, 1101, 1102, 3102, 3216, 1216, 2217, 1217, 2318, 1318, 4220, 4323, 3471, 6465; plus 9 additional advanced hours in geology at least 6 of which must be senior-level courses having direct economic application; Chemistry 3105, 3106, 2106; Mathematics 4111, and 3212 or Mathematics 3280 and 3281; or Computer Science 3120 or 3281, but preferably in addition to 3281; Physics 3120, 3221, or 4210, 4211; Geography 3208.

The minor must be chosen from one of the following fields: Biological Sciences, Chemistry, Civil Engineering, Geography, Metallurgical Engineering, Physics or Mathematical Sciences. A total of 18 hours (minimum), six hours of which must be advanced, are to be chosen from one of the above fields. Students planning to become professional geologists are strongly advised to take the B.S. degree program.

**B.A. Degree — Geology** — Specific course requirements are Geology 3101, 1101, 3102, 1102, 3216, 1216, 2217, 1217, 2318, 1318, 4220, 4323, 3471 and 6465; Chemistry 3105, 3106, 2106; Physics 3120 and 3221 or 4210, 4211; Mathematics 4110 and 4111, or 3280 and 3281, or Computer Science 3120; Geography 3208.

**B.S. Degree — Geophysics** — Specific course requirements are 3101, 1101, 3102, 1102, 3216, 1216, 2217, 1217, 4323, 3332, 3334, 3471, and 6465; Physics 4210, 1120, 4211, 1121, 3320, 3351, 3428, 3441; Mathematics 4111, 3212, 3217, 3326, 3436; Computer Science 3120; plus 9 hours elective in advanced level courses in geological sciences, physics, mathematics, computer science or engineering.

**Minor Geography — (Undergraduate only)** — Students from other majors choosing Geography as their minor field for the B.S. degree will take 18 hours (6 advanced) from the lower division and upper division Geological Sciences courses listed below.

**GEOGRAPHY**

For Undergraduates

*General prerequisite:* Junior standing for all 3300 and 3400 level courses.

**3106 Physical Geography (2-2)**

Survey of the physical elements of the earth, with emphasis on maps, climate, landforms, soils and vegetation. Laboratory fee: \$4.

**3110 Cultural Geography (3-0)**

Introduction to cultural elements, their spatial distribution, and their inter-relationship 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:* Geography 3106 or Geology 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:* Geology 3103 and 3104, or Geography 3106 and 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:* Geology 3103 or 3101, 3205 or Geography 3106. Laboratory fee: \$4.

**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:* Geography 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:* Geography 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:* Geography 3106 or 3110 or Geology 3103 or permission of instructor. Geography 3306 recommended.

**GEOLOGY**

For Undergraduates

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

**3101 Physical Geology (3-0)**

An introductory study of the earth's composition, structure and internal and external processes. Required of all majors and minors in geology (special section) and designed to fulfill natural science requirements for students in Liberal Arts and Business. Concurrent laboratory (1101) enrollment is required of all majors and minors (special sections). Majors and minors should take 3101/1101 and 3102/1102 in sequence. Other students may take either 3101 or 3102 independently in sections provided for them.

**1101 Laboratory for Geology 3101 (0-3)**

Required for majors and minors (special section) concurrent with 3101 and available to all other students. Laboratory Fee: \$4.

**3102 Historical Geology (3-0)**

An integrated study of the geologic history of the earth together with a consideration of life in the rock record. Required for all majors and minors in geology (special section) and designed to fulfill the natural science requirements for students in Liberal Arts and Business. Majors and minors are required to take Laboratory 1102 concurrently (special section).

**1102 Laboratory for Geology 3102 (0-3)**

Required for majors and minors (special section) concurrent with 3102 and available to all other students. 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. A one-day field trip is required. 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: \$4.

**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. A one-day field trip is required. 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: \$4.

**3216 Minerals and Rocks I Igneous (3-0)**

Study of the common igneous minerals and rocks including genesis, composition, classification and use together with the fundamentals of crystallography. Prerequisites: 3101, 1101. Chemistry 3105.

**1216 Laboratory for Minerals and Rocks I Igneous (0-4)**

Principles of crystal identification and description. Identification of igneous rocks and minerals utilizing physical properties and the petrographic microscope. Laboratory Fee: \$4.

**2217 Minerals and Rocks II Sedimentary (2-0)**

Study of the common sedimentary rocks and minerals including genesis, composition, classification and use. Both clastic and chemical rocks will be considered. Prerequisites: 3216, 1216.

**1217 Laboratory for Minerals and Rocks II Sedimentary (0-4)**

Identification of sedimentary rocks and minerals utilizing physical properties and the petrographic microscope. Prerequisite: 1216. Laboratory Fee: \$4.

**4216 Mineralogy (3-3)**

Elementary study of crystallography, crystal chemistry, classification and physical properties of minerals, and identification of the common silicate and ore minerals. Prerequisites: Geology 4101, Chemistry 3105. Offered fall semester. Laboratory fee: \$4.

**4217 Petrology (3-3)**

Hand specimen study and classification of igneous, metamorphic, and sedimentary rocks. Prerequisite: Geology 4216. Offered spring semester. Laboratory fee: \$4.

**4220 Invertebrate Paleontology (3-3)**

A survey of the classification, paleoecology, and stratigraphic distribution of fossil invertebrates. Prerequisite: Geology 3102 or 3205. Laboratory fee: \$4.

**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: Geology 3103 or 3106 and 3104. Not open to students who have completed Geology 3101, 1101, 3102, 1102. Offered fall semester. Laboratory Fee: \$4.

**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. Prerequisites: Geology 3103 or 3101, 1101, 3304, or permission of instructor. Not open to Geology majors. Laboratory Fee: \$4.

**For Undergraduates and Graduates****3315 Oceanography (3-0)**

Introduction to submarine geology, physical and chemical oceanography, marine organisms, marine resources, shore processes, and methods of marine technology. Prerequisite: Geology 3101 or 3104, or permission of instructor.

**2318 Minerals and Rocks III Metamorphic/Ores (2-0)**

The study of common metamorphic and economically important rocks and minerals including their origin, composition, classification, identification and use. Prerequisites: Geology 2217, 1217, 4323.

**1318 Laboratory for Minerals and Rocks III (0-4)**

Identification of metamorphic rocks and minerals and ores utilizing physical properties as well as petrographic and opaque microscopy. Prerequisite: Geology 1217. Laboratory Fee: \$4.

**3321 Geology for Engineers (2-3)**

The principles of physical geology and their practical applications to civil engineering. Prerequisite: Junior standing in engineering or permission of instructor. Offered fall semester.

**3322 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: Geology 2217, 1217, Chemistry 3106, 2106, or permission of instructor. Offered alternate years.

**4233 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: Geology 4217 and Mathematics 4111 and Geography 3208 or concurrently. Physics 4210. Laboratory fee: \$3.

**3324 Geochemical Prospecting (2-3)**

The application of geochemistry to the search for commercial mineral deposits. Prerequisites: Geology 3216, 1216 or permission of instructor. Offered spring semester. Laboratory fee: \$4.

**3325 Sedimentation (2-3)**

Methods of study and interpretation of sediments, including grain size and statistical analysis. Consideration is given to the genesis and classification of sedimentary rocks through field observation and laboratory study of hand specimens. Prerequisite: Geology 2217 or permission of instructor. Offered fall semester. Laboratory fee: \$4.

**3327 Geological Microscopy (2-3)**

The optical theory of the interaction of light and minerals and the study of minerals and ores in grains, polished sections, and thin sections with the petrographic and ore microscopes. Prerequisites: Geology 4217, Physics 3221 and/or permission of instructor. Offered fall semester. Laboratory fee: \$4.

**3328 Morphology of Fossil Invertebrates (2-3)**

A study of the functional morphology, taxonomy, phylogeny, and biometry of the fossil invertebrates. Prerequisite: Geology 4220 or permission of instructor. Offered spring semester.

**3330 Introduction to Micropaleontology (2-3)**

Techniques of collecting and preparation. Morphology, classification, biostratigraphic distribution, and paleoecology of animal microfossils. Prerequisite: Geology 4101-02 or permission of instructor. Laboratory fee: \$4.

**3340 Vulcanology (3-0)**

A study of the origin, eruption patterns and products of volcanoes. Discussion of thermal energy resources. Prerequisite: Geology 3103 or equivalent.

**3359 Mineral Resources (2-3)**

Geology and distribution of mineral resources. Metallogeny. Consideration of present and future commodity supplies. Field trips. Prerequisite: Geology 3103 or 3101. Offered fall semester. Laboratory fee: \$4.

**3421 Environmental Geology (3-0)**

A study of the applications of the science of geology to the problems of urban development and environmental control. Prerequisites: Geology 3101, 1101 or 3321.

**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: Biology 3105-06 and 1107-08 or Geology 3102, 1102 or permission of instructor. Concurrent with Geology 1455.

**1455 Vertebrate Paleontology Techniques (0-3)**

Collection, preservation, identification, and curation of vertebrate fossils. Concurrent with Geology 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:* Biology 3105-06 and 1107-08 or Geology 3102, 1102 or permission of instructor. Concurrent with Geology 1457.

**1457 Advanced Vertebrate Paleontology Techniques (0-3)**

Collection, preservation, identification and curation of vertebrate fossils. Concurrent with Geology 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:* Geology 3462. Laboratory fee: \$5.

**2459 Geological Fluids (2-0)**

Study of earth fluids to include the nature, origin, distribution and utilization of magma, magmatic fluids and gases, connate and meteoritic water, diagenetic fluids, petroleum, methane and other natural gases, evaporative brines, salt, ice and other rheids. *Prerequisites:* Geology 2318, 1318. Offered alternate years.

**1459 Laboratory for Geological Fluids (0-4)**

Geochemical methods of fluid analysis, calculation of fluid distribution and dispersion of geologic fluids. *Prerequisite:* Geology 1318. Laboratory Fee: \$4. Offered alternate years.

**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:* Geology 4220 and/or permission of instructor. Offered spring semester.

**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. *Prerequisites:* Geology 4323, 3325, or permission of instructor. Offered spring semester, alternate years.

**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:* Geology 4216-17, 4220, 4323, and permission of instructor. Transportation fee: \$150.

**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 (3-3)**

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:* Geology 4323 or permission of instructor. Offered spring semester.

**3471 Advanced General Geology (3-3)**

Comprehensive review of the fundamental principles of geology. *Prerequisite:* Senior standing in geology or permission of instructor. Offered spring semester.

**3472 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: \$3.

**GEOPHYSICS**

For Undergraduates

*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:* Mathematics 4111, Physics 3120 or equivalent.

**3332 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:* Physics 3221, Mathematics 4111, or permission of instructor.

**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:* Mathematics 4111, Physics 3222, or permission of instructor.

**3334 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:* Physics 3222, Mathematics 4111, 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 Department Chairman or Instructor.

See also Physics 3320, Physics 3428.

**GRADUATE PROGRAMS IN GEOLOGICAL SCIENCES****M.S. DEGREE — GEOLOGY**

**Departmental Requirements —** Master of Science degree in Geology. Geology majors must present 30 hours, including a thesis (6 hours). At least 21 hours must be in courses numbered 3500 or above. As part of the 30 hour program, 6 hours are required in a supporting field such as Mathematics, Chemistry, Biology, Physics, Geography, Geophysics, Civil Engineering, or Metallurgical Engineering. At least 3 hours of the supporting area work must be done in residence. All candidates are required to enroll in Geology 1501-Technical Sessions Seminar for 4 semesters. All candidates are required to satisfactorily pass an oral examination on their thesis investigation.

**M.S. DEGREE — GEOPHYSICS**

Students with undergraduate training in geophysics, physics, mathematics, and engineering concentrating in geophysics must demonstrate competency in geology equivalent to that required by the B.S. Geophysics Degree in the Department of Geological Sciences. For students with a deficient geologic background, the Departmental Graduate Affairs Committee will evaluate the academic record and recommend to the Graduate Dean a personalized program for needed geologic training. Recommendations to the Graduate Dean for relaxing the Advanced Geology GRE score requirements may be proposed for entering students who will be taking additional geology courses to strengthen their background, but this score must be reported within one year of entrance into the graduate program. The Graduate Studies Committee may recommend to the Graduate Dean that certain courses in Physics, Mathematics, Computer Science, and Engineering may be considered as geophysics courses.

## DOCTOR OF GEOLOGICAL SCIENCES

**Departmental Requirements** — Doctor of Geological Sciences. Requirements for this degree can be found in the Graduate School section of this catalog.

**1501 Technical Session (1-0)**

Required of all graduate students. Discussion of various geological topics by the faculty, graduate students, and speakers from industry and other institutions. May be repeated for credit. *Prerequisite:* Senior or graduate standing.

**PALEONTOLOGY****3510 Advanced Invertebrate Paleontology (2-3)**

A comprehensive analysis of the faunal taxonomy and paleoecology of the geologic systems. Professional methods of collecting and preparing invertebrate fossils will be stressed. *Prerequisite:* Geology 4220, or permission of instructor.

**3520 Paleozoic Biostratigraphy (2-3)**

Classification, paleogeography, and paleontology of the stratigraphic units within the Paleozoic systems. *Prerequisite:* Geology 4220. Offered fall semester, alternate years.

**3525 Mesozoic and Cenozoic Biostratigraphy (2-3)**

Classification, paleogeography and paleontology of the stratigraphic units of the marine Mesozoic and Cenozoic. *Prerequisites:* Geology 4220 and permission of instructor. Offered spring semester, alternate years.

**3530 Paleobotany of Benthic Algae and Higher Plants (2-3)**

Study of the morphology, paleoecology, biostratigraphy, taxonomy and evolution of higher plant macroflora in terrestrial systems. Paleophycological studies will concentrate on paleoecological interpretation and biostratigraphic application of the benthic calcareous algae in marine systems. *Prerequisite:* Graduate standing in Geology or Biology, or permission of instructor. Laboratory fee: \$4.

**3534 Paleophycology (2-3)**

Study of microscopic fossil algae including mineral and organic-walled phytoplankton. Morphology, taxonomy, classification, biostratigraphy and paleoecology of these organisms will be covered. Laboratory will stress techniques of collection, preparation and study. *Prerequisite:* Graduate standing in Geology or Biology, or permission of instructor. Offered spring semester, odd-numbered years.

**3535 Advanced Micropaleontology (3-3)**

A study of foraminifera, their ecology, systematics, and biostratigraphic usefulness. *Prerequisite:* Permission of instructor. Laboratory fee: \$4.

**3536 Palynology (2-3)**

Study of the morphology, classification, biostratigraphy and paleoecology of fossil, sub-fossil and recent spores and pollen. Laboratory will stress techniques of collection and preparation of ancient to recent palynomorphs. *Prerequisite:* Graduate standing in Geology, Biology or Anthropology. Offered spring semester, even-numbered years. Laboratory fee: \$5.

**PETROLOGY****3540 Advanced Carbonate Petrography (2-3)**

Thin-section and hand-specimen studies of carbonate rocks with emphasis on environmental interpretation, porosity formation, and potential reservoir characteristics. *Prerequisite:* Geology 3325, 3541, or permission of instructor. Offered spring semester.

**3541 Petrology of Carbonate Rocks (2-3)**

Description and classification of carbonate rocks, recrystallization, dolomitization, depositional environments, major groups of lime-secreting organisms, energy interpretations, diagenesis, and porosity formation. *Prerequisites:* Geology 3325 and permission of instructor. Offered fall semester.

**3542 Petrography of Clastic Sedimentary Rocks (1-6)**

Thin section and hand specimen studies of conglomerate, sandstone, and mud rocks with emphasis on interpretation of primary and secondary processes, porosity development, and classification. *Prerequisite:* Geology 3325 or permission of instructor. Offered spring semester, alternate years. Laboratory fee: \$4.

**3545 Igneous Petrology (2-3)**

Survey of major igneous rock-forming minerals and important igneous rock types: Physical chemistry of magmatic systems; genesis and differentiation of magmas; problems in theoretical igneous petrology; laboratory study of volcanic and plutonic rock associations. *Prerequisites:* Geology 3216, 1216 or equivalent. Offered spring semester, alternate years. Laboratory Fee: \$4.

**3546 Metamorphic Petrology (2-3)**

Observation, theory, and experimental data in the interpretation of textures and mineral assemblages of metamorphic rocks. An introduction to the theoretical aspects of metamorphic petrology including graphic representation of phase equilibria, and an introduction to diffusion and heat flow. Offered spring semester, alternate years. *Prerequisites:* Geology 2318, 1318, or equivalent. Laboratory Fee: \$4.

**GEOPHYSICS****3554 Seismology I (3-0)**

A study of earthquake seismology, seismotectonics, and the use of seismological methods to determine earth structure. A theoretical foundation is provided by the study of wave propagation in homogeneous and isotropic media from the standpoint of both ray and wave theory. *Prerequisites:* Geology 3332, Math 3436 and Physics 3351, or consent of instructor.

**3555 Seismology II (3-0)**

Mathematical treatment of plane waves in homogeneous, laminated, granular, and porous media. Effect of fluid content. Measurements of attenuation in rocks and review of loss mechanisms. Reflection at plant boundaries. Propagation along cylindrical boreholes. Radiation from simple seismic sources. *Prerequisite:* Mathematics 3326 or equivalent.

**1556-3556 Topics in Geophysics**

Study of advanced topics in the fields such as exploration geophysics, geothermics, theoretical seismology, potential field, data analysis, inversion, seismotectonics, crustal studies, and global tectonics. *Prerequisite:* Permission of instructor.

**3557 Geothermics (3-0)**

Principles of heat conduction in solids, emphasizing the measurement of the thermal properties of geologic materials. Heat flow from the interior of the earth and the distribution of heat sources. Geothermal energy and exploration. *Prerequisite:* Graduate standing.

**3558 Advanced Seismic Prospecting (2-3)**

A survey of the most recent techniques and developments in seismic prospecting with an emphasis on digital processing. The mathematical and physical basis for techniques such as convolution, correlation, and the calculation of synthetic seismograms will be established. Laboratory will stress computer programming of the techniques studied during lectures. *Prerequisites:* A working knowledge of FORTRAN and Math 3326, or consent of the instructor.

**3559 Physics of the Earth (3-0)**

Physics of the earth's interior including seismic velocity and density structure, seismic wave propagation and gravitational and magnetic fields. Thermal history of the earth. Chemical and mineralogical composition of the earth, radio-activity, isotopes and geochronology. Magma generation, crustal evolution and tectonic models. *Prerequisite:* Mathematics 3212 or equivalent or permission of instructor.

**1563-3563 Special Problems in Geophysics**

*Prerequisite:* Graduate standing and permission of instructor.

**3610 Special Problems, Geophysics**

For Doctoral students only.



**GENERAL GEOLOGY****1562-3562 Special Problems in Geology**

*Prerequisites:* Graduate standing and permission of instructor.

**3561 Advanced Historical Geology (3-0)**

*Prerequisites:* Senior or graduate standing and permission of instructor. Offered spring semester, alternate years.

**3564 Depositional Environments & Systems (3-0)**

Analysis of layer geometry, sedimentary processes and rock types diagnostic of major depositional environments and systems. Occurrence of natural resources in depositional systems. *Prerequisite:* Geology 3325 or equivalent or permission of instructor. Offered fall semester.

**3566 Seismic Stratigraphy (2-3)**

Interpretation of geologic parameters from seismic reflection data. Emphasis on recognition and mapping of stratigraphic units and lithologic facies. Comparison of reflection characteristics and geologic resolution. *Prerequisite:* Geology 3564 or permission of instructor. Offered spring semester, alternate years.

**3570 Geotectonics (3-0)**

Extensive readings on selected topics in and a broad review of the major principles and theory of geotectonics. *Prerequisite:* Geology 4323. Alternate years.

**3571 Advanced Structural Geology (3-0)**

The theory of rock deformation, stress-strain theory applications to geology; computerized model and tectonite analysis. Offered Spring semester, alternate years. *Prerequisite:* Geology 4323.

**3572 Geology of the Western United States (3-0)**

General stratigraphy, structure, geomorphology and economic geology of each of the coterminous United States west of the 103rd meridian. *Prerequisites:* Structural geology, summer field courses and graduate standing. Offered spring semester, alternate years.

**3573 Geology of the El Paso Region (1-6)**

Lecture, literature readings, and field trips related to the Franklin Mountains, Cristo Rey, Sierra de Juarez and adjacent areas. Field trips will be held on weekends and lectures in the evenings. *Prerequisite:* Permission of instructor. Laboratory Fee: \$4.

**3575 Quantitative Techniques in the Geological Sciences (3-0)**

Introduction to techniques for quantitative analysis of geologic data. Emphasis on the extraction of maximum information from large data matrices. Specific applications to petroleum and mineral exploration.

**3576 Applied Geochemistry (2-3)**

Application of geochemical principles and techniques to prospecting for commercial mineral deposits. *Prerequisite:* Geology 3324 or permission of instructor.

**3580 X-ray Mineralogy (2-3)**

Theory and application of x-ray diffraction, x-ray fluorescence, atomic absorption, differential thermal analysis, and spectrofluorometry to chemical analyses of geological materials. *Prerequisite:* Graduate standing, and/or permission of instructor. Offered fall semester, alternate years. Laboratory fee: \$3.

**1589-6589 Graduate Research in Geological Science**

*Prerequisite:* Graduate standing and permission of the instructor.

**3590 Seminar in Geology (3-0)**

Seminar sections (non-concurrently) in paleontology and stratigraphy; mineralogy, petrology, and geochemistry; structural geology and geomorphology; economic geology, and subsurface correlation. *Prerequisite:* graduate standing and permission of instructor. May be repeated for credit when topics vary.

**1589-6589 Graduate Research in Geological Science**

*Prerequisite:* Graduate standing and permission of the instructor.

**3598-99 Thesis****3605 Special Problems, Geology**

For doctoral students only.

**3620-21 Dissertation**

*Prerequisite:* Doctoral Candidacy

**1696-6696 Doctoral Research in Geological Sciences**

*Prerequisite:* Doctoral standing and permission of the instructor.

**ECONOMIC GEOLOGY****3591 Economic Geology: Industrial Rocks and Mineral Deposits (3-0)**

Study of the geologic and economic factors and techniques involved in finding, evaluating, producing, and marketing industrial rocks and minerals. *Prerequisite:* Geology 3470 or permission of instructor.

**3592 Economic Geology: Metallic Mineral Deposits (3-0)**

Study of the geologic and economic factors and techniques involved in finding, evaluating, producing and marketing metallic minerals. *Prerequisite:* Geology 3470 or permission of instructor.

**3593 Genesis of Mineral Deposits (2-3)**

Field and laboratory studies of mineral deposits emphasizing geochemical and mineralogical relationships to geology and mineral resource evaluation. Microscopy, X-ray, chemical, and computer studies. *Prerequisites:* Geology 3580, 3591, 3592, and Metallurgical Engineering 3412 suggested. Offered alternate years.

**3594 Mining Geology (3-0)**

Geologic mapping, sample drilling, reserve calculations and economic evaluation of actively exploited and potential economic mineral deposits. *Prerequisite:* Geology 2318 or 3591 or 3592, or permission of instructor. Offered alternate years.

**3595 Economic Geology of Fuels (3-0)**

Origin, distribution, processing and economic aspects of coal, uranium, oil shale, tar sands, and geothermal resources in terms of energy supplies. *Prerequisite:* Geology 2318 or equivalent. Offered alternate years.

**3596 Mineral Economics (3-0)**

Economic characteristics of mineral resources, economic analyses as applied to the mineral industries; problems related to mineral organization and financing. *Prerequisites:* Graduate standing and permission of instructor. Offered fall semester, alternate years.

**3597 Geology and Mineral Resources of Mexico (3-0)**

Stratigraphic and structural framework of the Republic of Mexico with particular reference to the distribution of mineral resources. *Prerequisites:* Geology 3318, 1318, and 4323 or equivalent. Offered alternate years.

**MATHEMATICAL SCIENCES****116 Physical Science**

(915) 747-5761

**CHAIRMAN:** Eugene F. Schuster

**PROFESSORS:** Boyer, Leahey, Nymann, Schuster

**ASSOCIATE PROFESSORS:** Bentz, Burch, Gladman,

Gregory, Guthrie, Hall, Kaigh, Liguori, Narvarte,

Srinivasan, Strauss, Wagner

**ASSISTANT PROFESSORS:** Fitzpatrick, Foged, Fox, Gray,

Hansen, Huntley, Lifschitz, Lopp, Miculka, Provencio,

**VISITING ASSISTANT PROFESSOR:** Gelfond

**B.S. Degree** — Specific course requirements for the mathematics major are: 3323, 3325, 3341, and four advanced courses including at least two from 3425, 3441, 3480. The minor is usually chosen from one of the disciplines in the College 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. Students preparing for a career in teaching may offer any of the approved Teaching Fields as a minor. The B.S. degree in Computer Science is also available.

**B.A. Degree** — Specific course requirements are: 3325, 3341, two courses chosen from 3319, 3323, 3327, 3328, 3330, 3422, 3431, 3480; and one additional advanced course.

All undergraduate mathematics majors are required to consult with and have their enrollment forms signed by their departmental advisor before every enrollment.



**Placement Examinations** — Students whose SAT or PAA mathematics score is 600 or above or whose ACT mathematics score is 25 or above may register for Mathematics 4111 if they meet the prerequisites. Students whose SAT or PAA mathematics score is 500 or above or whose ACT mathematics score is 21 or above may register in Mathematics 4110, 3120 or 3106 if they meet the prerequisites.

All other students who intend to register in Mathematics 4110, 3120 or 3106 must take a placement examination administered by the mathematics department.

An official document showing the test score must be presented at registration before enrollment can be completed.

**Achievement Test** — Students with test scores adequate for Mathematics 4110 but not for 4111, are encouraged to take the mathematics test administered by the Counseling Service. Students who have completed this test — or any of the College Entrance Board mathematics tests — should present the results to the mathematics advisor for evaluation, which may result in elective mathematics credit.

## MATHEMATICS

### For Undergraduates

#### 3101, 3102 Excursions In Mathematics (3-0)

A course designed to provide some understanding of the nature of mathematical thought. Topics are chosen from such fields as combinatorics, probability, statistics, and number theory. May be taken in either order. This course does not serve as preparation for any other mathematics course.

#### 3105 Intermediate Algebra (3-0)

This course is designed for students who lack training in algebra needed for Mathematics 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)

Congruence and similarity; introductions to complex numbers, trigonometry, and analytic geometry; areas and volumes. Graphs of functions: power functions, polynomials, rational, exponential, logarithmic, and trigonometric functions. Zeros of functions with emphasis on polynomials. Systems of linear equations. *Prerequisites:* Mathematics 3105, or equivalent preparation and an adequate score on a placement examination.

#### 4110 Pre-calculus (4-0)

The algebra of functions with domains and values in the real numbers, trigonometry, analytic geometry of first and second degree curves, mathematical induction, and the binomial theorem. *Prerequisites:* Mathematics 3106, or equivalent preparation and an adequate 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 Mathematics 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 Mathematics 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.

#### 3201 Introductory Analysis for Business and Social Sciences (3-0)

An introduction to differential and integral calculus with applications to business and economics. *Prerequisite:* Mathematics 3120 or 4110.

#### 3212 Calculus (3-0)

Continuation of Mathematics 4111. Topics include solid analytic geometry, vectors, coordinate systems, special methods of integration and applications. *Prerequisite:* Mathematics 4111.

#### 3217 Calculus (3-0)

Infinite series, partial differentiation, and multiple integrals. *Prerequisite:* Mathematics 3212.

#### 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 notions 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 Mathematics 3302. *Prerequisite:* Mathematics 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 informal approach and emphasizing concepts usually taught in elementary schools. Notions of distance, Euclidean and non-Euclidean geometry are discussed. *Prerequisite:* Mathematics 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:* Mathematics 3212.

#### 3323 Linear Algebra (3-0)

An introduction to the algebra of vectors and matrices and to linear transformations on vector spaces. *Prerequisite:* Mathematics 3212.

#### 3325 Introduction to Algebra (3-0)

Set theory. Introduction to groups, rings, fields, and their elementary properties. *Prerequisite:* Mathematics 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:* Mathematics 3217.

#### 3327 Applied Algebra (3-0)

Study of problems from one of the following subjects:

- A. Automata Theory
- B. Formal Languages
- C. Information Theory
- D. Theory of Algorithms
- E. 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 Set Theory (3-0)

A rigorous treatment of abstract set theory including cardinal and ordinal numbers together with a detailed development of the natural, rational, and real number systems starting with Peano's postulates. *Prerequisite:* Mathematics 3212.

#### 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:* Mathematics 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. *Prerequisites:* Mathematics 3217 and 3325.

**3422 Geometry (3-0)**

A course in modern plane geometry involving an extension of some of the material of elementary geometry, together with an introduction to projective geometry. Properties of the triangle, properties of the circle, similitude, inversion, cross ratio, and principle of duality. *Prerequisite:* Mathematics 3325.

**3425 Modern Algebra (3-0)**

Groups, rings, integral domains, and fields. *Prerequisite:* Mathematics 3325.

**3426 Modern Algebra (3-0)**

Continuation of Mathematics 3425. *Prerequisite:* Mathematics 3425.

**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:* Mathematics 3323 and Computer Science 3120 or equivalent.

**3431 Topology (3-0)**

Topological spaces, continuous mappings, homeomorphisms and topological properties. *Prerequisite:* Mathematics 3341.

**3436 Applied Analysis II (3-0)**

Series solutions of differential equations. Fourier series and Fourier integrals. Bessel'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:* Mathematics 3326.

**3437 Complex Analysis (3-0)**

The definition of the elementary analytic functions, differentiation, integration. Taylor series, and an introduction to conformal mapping. *Prerequisite:* Mathematics 3341 or 3335.

**3441 Real Analysis I (3-0)**

A continuation of Mathematics 3341. Investigates 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:* Mathematics 3341.

**3442 Real Analysis II (3-0)**

Differentiation and integration in Euclidean  $n$ -space including multiple integrals, line integrals and surface integrals. *Prerequisites:* Mathematics 3441 and 3323.

**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:* 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: Computer Science 3120 or equivalent, Mathematics 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)**

A study of the principles and methods of statistics without calculus. Statistical description, probability concepts, random variables and probability distributions, special probability distributions, sampling distributions, estimation and confidence intervals; introduction to hypothesis testing and regression analysis. Open to all students. Concurrent enrollment in Statistics 1282 is optional.

**3281 Statistical Methods II (3-0)**

A study of the principles and methods of statistics without calculus; hypotheses testing, nonparametric tests, analysis of variance, regression, correlation and experimental design. *Prerequisite:* Statistics 3280.

**1282 Computing Laboratory for Statistics 3280 (1-1)**

Practical exercises in the handling of statistical data and experimental sampling as related to the course work in Statistics 3280. Includes an introduction to data processing.

**3330 Probability (3-0)**

This is an introductory course in the theory of probability. The ideas of sample space and probability and the axioms of probability theory are introduced through familiar finite examples. The standard notions of the theory are presented: conditional probability, random variables, distribution functions, expectation, mean, variance, etc. The central limit theorem, the law of large numbers and other limit theorems are included. *Prerequisite:* Mathematics 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 3281 or 3330.

**3480 Statistics I (3-0)**

A mathematical study of the principles and methods of statistics at the introductory level; includes distribution theory, estimation, hypotheses testing, correlation and an introduction to regression and analysis of variance. *Prerequisite:* Statistics 3330.

**3481 Statistics II (3-0)**

A continuation of Statistics 3480, includes regression analysis, analysis of variance, nonparametrics, and other selected topics in experimental design. *Prerequisite:* Statistics 3480.

**For Graduate Students Only****DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE.**

For students electing to write a thesis, the program involves a minimum of 24 semester hours of acceptable course work and 6 hours of credit for the thesis. For those not writing a thesis, at least 36 hours of acceptable course work are required. All but 9 hours (6 hours if there is no minor) must be graduate course work. Those students working toward the M.S. degree in mathematics should include Mathematics 3521, 3531, 3541, and 3551 in their program. For students desiring the M.S. degree in mathematics *with emphasis in probability and statistics*, Statistics 3580, 3581, 3582, and 3583 are recommended. The particular course of study for each student must be approved by the departmental committee on graduate studies. A comprehensive examination is required.

**DEPARTMENTAL REQUIREMENTS FOR THE MASTER OF ARTS IN TEACHING MATHEMATICS DEGREE.**

The Master of Arts in Teaching Mathematics degree requires 36 semester hours of course work. Six to 9 of these hours must be taken in the College of Education. The remaining hours must be taken in mathematical sciences or computer science. A maximum of 18 of these hours may be chosen from 3300 or 3400 level courses. Each student must have his courses approved by the Graduate Advisor in order to ensure adequate

breadth of courses in the mathematical sciences. All students are required to take Math 3571 after completing at least 24 hours of their program. A comprehensive examination is required.

### 3511 Applied Mathematics I (3-0)

Mathematics 3511 and 3512 are designed to introduce the student to those areas of mathematics, both classical and modern, which are useful in engineering and science. Topics are chosen from variational calculus, tensor analysis, elliptic integrals, partial differential equations, and the theory of finite fields with applications to coding theory. The courses may be taken in either order. *Prerequisites:* Mathematics 3326 and 3323. Mathematics 3335 and 3436 are desirable, but not necessary.

### 3512 Applied Mathematics II (3-0)

See Mathematics 3511.

### 3521 Advanced Abstract Algebra I (3-0)

Groups, rings, fields, modules, with an introduction to homological methods. *Prerequisite:* Mathematics 3425 or its equivalent as approved by the instructor.

### 3522 Advanced Abstract Algebra II (3-0)

A continuation of Mathematics 3521. *Prerequisite:* Mathematics 3521 or its equivalent as approved by the instructor.

### 3529 Numerical Analysis (3-0)

Introduction to approximation theory, quadrature numerical solution of differential equations, numerical linear algebra, and solutions of non-linear equations. Emphasis is on error analysis and stability. Several practical examples and computer programs will be covered. *Prerequisites:* Mathematics 3323 and a working knowledge of a high level programming language (FORTRAN, ALGOL OR PL/I)

### 3531 Real Variables I (3-0)

Measurable sets and functions, Lebesgue-Stieljes integration, Baire categories, Lp spaces and various types of convergence. *Prerequisite:* Mathematics 3441 or its equivalent as approved by the instructor.

### 3532 Real Variables II (3-0)

A continuation of Mathematics 3531. *Prerequisite:* Mathematics 3531 or its equivalent as approved by the instructor.

### 3541 General Topology (3-0)

A study of topological spaces, compactness, connectedness, metrization, and function spaces. *Prerequisite:* Mathematics 3431 or its equivalent as approved by the instructor.

### 3542 Algebraic Topology (3-0)

An introduction to algebraic methods in topology. Topics include homotopy, covering spaces, homology, and manifolds. *Prerequisites:* Mathematics 3431 and 3425 or their equivalents as approved by the instructor.

### 3551 Complex Variables I (3-0)

Complex integration and the calculus of residues. Analytical continuation and expansions of analytic functions. Entire meromorphic, and periodic functions. Multiple-valued functions and Riemann surfaces. *Prerequisite:* Mathematics 3441 or its equivalent as approved by the instructor.

### 3552 Complex Variables II (3-0)

A continuation of Mathematics 3551. *Prerequisite:* Mathematics 3551 or its equivalent as approved by the instructor.

### 3570 Seminar (3-0)

Various topics not included in regular courses will be discussed. May be repeated once for credit as the content changes. *Prerequisite:* Consent of instructor.

### 3571 Seminar for Teachers in Mathematics (3-0)

This course will take a sophisticated look at various topics in the pre-university mathematics curriculum. May be repeated as content varies. May not be counted in fulfilling the requirements for the M.S. degree.

### 3580 Mathematical Statistics I (3-0)

A thorough mathematical study of the principles and methods of statistics. Probability spaces, random variables and random vectors, probability distributions, expectation and moments, characteristic functions, moment generating functions and probability generating functions, derived distributions of random variables, law of large numbers and central limit theorem, order statistics, principles and methods of estimation. *Prerequisite:* Consent of the instructor.

### 3581 Mathematical Statistics II (3-0)

A thorough mathematical study of the principles and methods of statistics, hypotheses testing, likelihood ratio and chi-square tests, sequential analysis, multivariate analysis, quadratic forms, least squares and the general linear model, analysis of variance, nonparametric techniques. *Prerequisite:* Mathematics 3580.

### 3582 Probability Theory I (3-0)

A mathematical study of the notions of probability spaces, measurable functions and random variables, modes of convergence and limit theorems. *Prerequisite:* Consent of the instructor.

### 3583 Probability Theory II (3-0)

A mathematical study of central limit theorems for sequences of independent and dependent random variables; multivariate limit theorems, conditional expectation and Martingale theory; introduction to the theory of stochastic processes, in particular, Brownian motion. *Prerequisite:* Mathematics 3582.

### 3584 Statistical Principles in Experimental Design (3-0)

The basic principles of the design and analysis of experiments which occur in all areas of experimental work. The computer will be used in the analysis of the data. *Prerequisite:* Consent of the instructor.

### 3585 Statistics in Research (3-0)

The basic concepts and techniques vital to the use of statistics in research. Topics include: introduction to statistics and statistical distributions; estimation, confidence intervals and hypothesis testing; one and two sample distribution methods; correlation, regression, and analysis of variance; and selected topics in the design of experiments. Mathematics majors must have approval of the graduate advisory committee to receive graduate credit for this course. *Prerequisite:* one undergraduate course in statistics equivalent to Statistics 3280.

### 3586 Stochastic Processes I (3-0)

A study of the theory and applications of stochastic processes. The role of stochastic processes, elements of stochastic processes. Markov chains, limit theorems, Poisson processes. *Prerequisite:* Consent of the instructor.

### 3587 Stochastic Processes II (3-0)

A study of the theory and applications of stochastic processes, birth and death processes, renewal processes, Brownian motion, branching processes, queueing processes. *Prerequisite:* Statistics 3586.

### 3588 Multivariate Data Analysis (3-0)

The course will emphasize such important areas of multivariate data analysis as discriminant analysis, multiple regression and correlation, factor analysis, cluster analysis, and other applied topics not covered in the standard statistics courses. The student will gain proficiency in the use of computer packages such as the BMD and SPSS packages. Students should be motivated by a need for data analysis in their respective fields. *Prerequisite:* Three hours of statistics, preferably Mathematics 3585.

### 3589 Special Topics in Statistics (3-0)

Various topics in probability and statistics not included in the regular courses will be discussed. May be repeated once for credit as the content changes. *Prerequisite:* Consent of the instructor.

### 3588-99 Thesis

## PHYSICS

214 Physical Science  
(915) 747-5715

CHAIRMAN: C. Sharp Cook

PROFESSORS EMERITI: Thomas Grogard Barnes, Oscar Harry McMahan

PROFESSORS: Bolen, Bowen, Brient, Bruce, Cook, Lawson, McIntyre

ASSOCIATE PROFESSORS: Blue, Cooper, Dean, Schumaker

ASSISTANT PROFESSOR: Slusher

**B.S. Degree** — Specific course requirements for the Physics major are: Physics 1120, 4210, 1121, 4211, 3325, 3326, 2343, 3351, 3431, 3441, 2446, 3453, 3457.

**B.A. Degree** — Specific course requirements for the Physics

major are: Physics 1120, 4210, 1121, 4211, 3325, 3326, 2343, 3351, 3441, 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.

#### 3101 Principles of Physical Science (2-1)

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 Physics 3101. 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.

#### 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:* Physics 4103. Laboratory fee: \$8.

#### 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.

#### 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.

#### 3108 Elementary Astronomy of Stars and Galaxies (3-0)

May be taken independently of Physics 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.

#### 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:* Mathematics 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:* Physics 4210, Mathematics 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.

#### 3120 Mechanics (3-0)

Vectors, kinematics, dynamics of particles, and dynamics of rigid bodies via the calculus. *Prerequisite:* Mathematics 4111 or concurrently.

#### 1121 Physics Laboratory II (0-3)

Continuation of Physics 1120. *Prerequisite:* Physics 1120 or equivalent as determined by instructor. Laboratory fee: \$8.

#### 3221 Heat, Wave Motion, and Optics (3-0)

Thermal properties of matter, kinetic theory of gases, mechanical waves, and physical and geometrical optics. *Prerequisites:* Physics 3120 or equivalent; Mathematics 3212 or concurrently.

#### 3222 Electricity and Magnetism (3-0)

Electric fields, magnetic fields, circuit theory, and Maxwell's equations. *Prerequisites:* Physics 3120 or equivalent and Mathematics 3212.

### 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. *Prerequisites:* Physics 3221 and 3222.

#### 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. *Prerequisites:* Physics 3221 and 3222.

#### 3325 Modern Physics I (3-0)

Relativistic mechanics and quantum mechanical theory. *Prerequisites:* Physics 3221 and 3222.

#### 3326 Modern Physics II (3-0)

Continuation of Physics 3325 including topics from atomic, solid state physics, and nuclear physics. *Prerequisite:* Physics 3325.

#### 3331 Contemporary Physics (3-0)

A descriptive course of contemporary physics topics designed for students in elementary and secondary education. May not be counted toward a major or minor in physics but may be counted toward the advanced hour teaching field requirements in education programs. *Prerequisites:* Junior standing and six hours of physics.

#### 2343 Advanced Laboratory Practice (0-6)

Topics and practices of modern experimental physics. May be repeated once for credit. *Prerequisites:* Physics 1121, 3221, and 3222 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:* Physics 3120 or equivalent and Mathematics 3326. Offered spring semester.

#### 3352 Advanced Mechanics (3-0)

Topics in mechanics such as mechanics of deformable bodies, mechanical radiation, and rheology. *Prerequisite:* Physics 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:* Physics 3221 and 3222 and Mathematics 3226.

#### 3360 Biophysical Mechanics (3-0)

A study of the application of continuum mechanics, thermal physics, bioelasticity, and acoustics to the description of life processes, characteristics of biomaterials, diffusion and transport processes, and ultrasound. The physical topics studied are selected according to their relevance to biology. *Prerequisites:* Physics 3120, 3221, 3222 or Physics 4210 and 4211, Mathematics 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:* Mathematics 3326 and Physics 3221, 3222.

**3431 Thermal and Statistical Physics (3-0)**

An introduction to the behavior of macroscopic systems and to the microscopic basis for that behavior. *Prerequisite:* Physics 3351 or equivalent. Offered spring semester.

**3441 Electricity and Magnetism (3-0)**

Electromagnetic theory via Maxwell's equations. *Prerequisite:* Physics 3351; Mathematics 3335 is recommended. Offered fall semester.

**3442 Electricity and Magnetism (3-0)**

Advanced topics in electromagnetic theory such as relativistic electrodynamics, electromechanical systems, electro-magnetic waves and radiating systems. *Prerequisite:* Physics 3441 or equivalent.

**3446 Experimental Physics (0-6)**

Topics in experimental physics. May be repeated once for credit. *Prerequisite:* Physics 2343. Offered spring semester. Laboratory fee: \$8.

**3448 Fundamentals of Acoustics (3-0)**

The principles underlying the generation, transmission, and reception of acoustic 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:* Physics 3221 and 3222, Mathematics 3326.

**3453 Theoretical Physics (3-0)**

Physical boundary value problems in mechanics, electricity, and magnetism thermodynamics, acoustics, and fluids. *Prerequisites:* Senior standing, Physics 3351, 3441 or permission of the instructor. Offered spring semester.

**3457 Introduction to Quantum Mechanics (3-0)**

Schrodinger's equation, the square well, harmonic oscillator, hydrogen-like atoms, and the theory of transitions. *Prerequisites:* Physics 3326 and 3351. Offered fall semester.

**3470 Atmospheric Physics (3-0)**

The physical structure and dynamics of the atmosphere. *Prerequisites:* Physics 3221 and 3222, and Mathematics 3326.

**3482 Science and Law (3-0)**

This course introduces the student to the following topics: court structure, contracts, patents, copyrights and trademarks, liens, warranties and expropriation, oil and gas and mineral (resource) law, marine law, environmental law, and business law with emphasis on corporation crime (suite law) and the multi-national corporation. Recommended for advanced elective credit for students majoring in the College of Science, but may not be counted as a physics course toward a major or minor in Physics. *Prerequisite:* Junior standing in Science or Engineering or permission of instructor.

**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 as study topic changes. *Prerequisites:* Senior standing, a 3.0 grade point average and permission of the faculty member who is to supervise the research.

**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.

**For Graduate Students Only**

The department offers a program of courses and research leading to the degree of M.S. in Physics. Two routes are available. Plan 1 is the usual route to be taken and requires 30 semester hours of credit: 24 hours of course work plus a 6 hour thesis (Physics 3598 and 3599). Plan 2 is an alternate route and requires the favorable recommendation of the Physics Department Graduate Committee and 36 hours of course work, including the successful completion of a research problem (Physics 3591) being substituted for a thesis.

Requirements for Plan 1 are a minimum of 21 semester hours of graduate work at the 3500 level including thesis; spe-

cific courses required are Physics 3521, 3541, 3561, 3598, and 3599. Requirements for Plan 2 are a petition stating the reason for the alternate route and a minimum of 27 semester hours of graduate work at the 3500 level; specific courses required are Physics 3521, 3541, 3561, and 3591.

A grade of B or better must be made in each of three required courses (3521, 3541, 3561). The student must have the course program approved by the graduate advisor each semester. The student will choose, in consultation with the graduate advisor, a chairman of the research committee and at least two additional committee members who will supervise the thesis or research problem. One member of this committee must be from outside the Physics department. These choices will be made before the student has completed 12 semester hours of graduate work.

The candidate for the M.S. Degree in Physics must pass a final examination which will include an oral defense of the thesis or research problem.

The following courses have the prerequisite of the equivalence of a B.S. Degree in Physics or any prerequisite shown in the description of the course.

**3501 Principles of Geodynamics (3-0)**

An extensive mathematical and physical study of geodynamics. Study takes up the geophysical data regarding the earth, mechanics of deformation, effects of the rotation of the earth, orogenesis, dynamics of earthquakes, dynamics of volcanism, and related topics.

**3506 Physics of the Upper Atmosphere (3-0)**

Upper atmospheric circulation influences on photochemical equilibrium. State changes, involving water vapor, ozone, oxides and ionized and neutral components of the atmosphere and their relation to formation and destruction processes and equilibrium conditions. Interactions between the gravitational, magnetic, flow and plasma fields. Sources, sinks and propagation characteristics relative to a spectrum of wave motions ranging from acoustic waves to diurnal tides. *Prerequisite:* Physics 3470 or equivalent as determined by the instructor.

**3521 Mechanics (3-0)**

D'Alembert's and variational principles, Lagrange's equations. Hamilton's principle, two-body central force, rigid body, kinetics and force equations. Lagrangian relativistic mechanics, principle of least action. *Prerequisite:* Physics 3351. Offered fall semester.

**3532 Plasma Physics (3-0)**

Physics of fully ionized gases. Waves and instabilities. Transport properties. Interaction of charged particles with electromagnetic fields. *Prerequisites:* Physics 3431, 3441 or consent of instructor.

**3541 Electricity and Magnetism (3-0)**

Boundary value problems; polarization, and stress tensor. Conservation laws and energy momentum-tensor. Relativistic electrodynamics. Covariant form of field equations. Potentials and gauge invariance. *Prerequisite:* Physics 3441. Offered fall semester.

**3545 Atmospheric Structure and Dynamics (3-0)**

Development of stress tensor; kinematics of fluids; conservation of mass, momentum and energy; continuity, Navier-Stokes, and energy equations. Development of change in state, turbulent, and Coriolis effects; linearized approximations and non-linear prognostic equations. (Same as Electrical Engineering 3545).

**3546 Atmospheric Radiation Processes (3-0)**

The theory of radiative transfer including gaseous absorption and emission, aerosol extinction, atmospheric fluxes and heating rates, airflow and other atmospheric radiative phenomena. Applications are made to remote sensing of planetary atmospheres. *Prerequisite:* Physics or Electrical Engineering 3545.

**3547 Propagation of Waves in the Atmosphere (3-0)**

Characteristics of electromagnetic and hydrodynamic wave propagation in the atmosphere are developed. Observed changes in wave characteristics are related to techniques and applications of remote sensing. *Prerequisite:* Physics or Electrical Engineering 3545.

**3551 Nuclear Physics (3-0)**

Systematics of nuclei, binding energy, nuclear models, scattering of protons and neutrons, nuclear reactions, passage of charged particles and

gamma rays through matter. *Prerequisite:* Physics 3457 or consent of instructor.

**3554 Cosmic Radiation (3-0)**

Topics of cosmic radiation and high energy nuclear physics.

**3561 Quantum Mechanics (3-0)**

Solution of the Schrodinger wave equation for discrete and continuous energy eigenvalues; representation of physical variables as operators and the matrix formulation of quantum mechanics; approximation methods. *Prerequisite:* Physics 3457. Offered spring semester.

**3565 Advanced Statistical Mechanics (3-0)**

Classical and quantum statistics of systems in equilibrium. Treatment of fluctuations and transport phenomena. Introduction to many-body problems. *Prerequisite:* Physics 3457 or equivalent as determined by the instructor.

**3571 Solid State Physics (3-0)**

Electromagnetic, elastic and particle waves in periodic lattices as applied to the electrical, magnetic and thermal properties of solids. *Prerequisite:* Physics 3457 or consent of instructor.

**3591 Research Problems in Physics (3-0)**

Required course for the 36-hour non-thesis option. Requires two copies of a type-written report. May be repeated for credit; maximum credit allowed six hours. May not be counted as thesis research but may be taken one time as a preparatory investigation course prior to the beginning of thesis research. *Prerequisites:* Submission of the Petition of Candidacy and consent of Chairman of Supervisory Committee.

**3593 Special Topics in Physics**

Topics to be announced. May be repeated for credit.

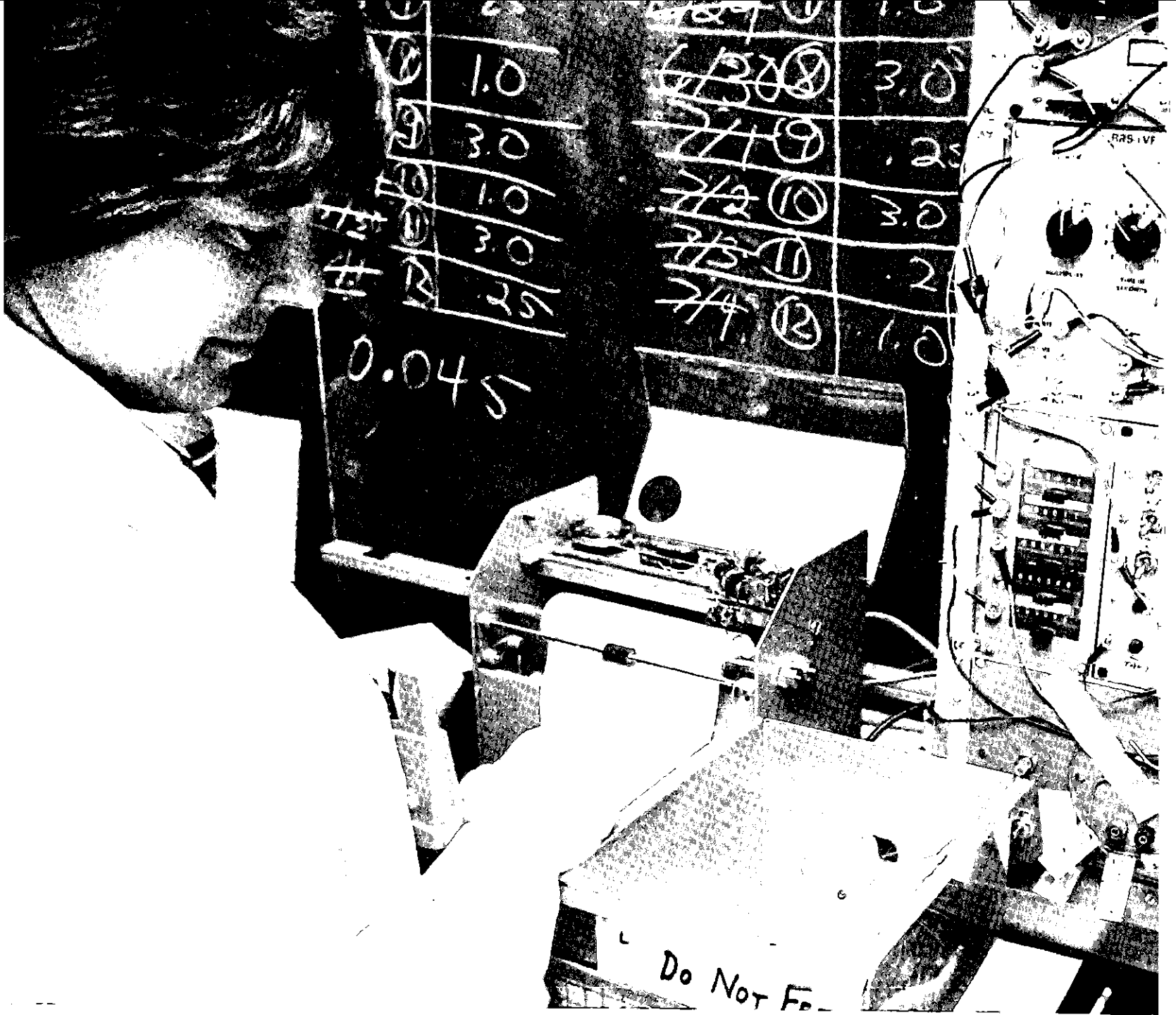
**1595 Graduate Seminar (1-0)**

May be repeated for credit up to a total of 3 semester hours.

**1596-6596 Graduate Research in Physics (1-0, 2-0, 3-0, 4-0, 5-0, 6-0)**

This course may be taken as often as needed, but no more than 3 semester credit hours may be applied to satisfy the requirements for the masters degree. *Prerequisites:* Graduate standing and consent of Graduate Advisor.

**3598-3599 Thesis**



Michael E. Austin, Dean  
Gail Mortimer, Assistant Dean

Education Building 901  
(915) 747-5491

# The Graduate School



# THE GRADUATE SCHOOL

## General Information

The Graduate School is essentially a body of professors and scholars designated as Members or Senior Members of the Graduate Faculty and of students duly admitted to pursue their studies beyond the baccalaureate degree. All members of the Graduate Faculty are expected to maintain a national reputation in their field of scholarship. The administrative head of the Graduate School is the Graduate Dean. In academic areas or departments offering graduate level courses, the Members of the Graduate Faculty constitute an individual Committee on Graduate Studies. All recommendations made by committees on graduate studies are subject to review and approval by the Graduate Dean.

The Graduate School faculty and administration authorize all degrees past the baccalaureate degree awarded by the University.

Graduate work is divided into *areas* and *departments*. Areas differ from departments in that they may be broader in scope, involving courses and research in several departments. The candidate for an advanced degree presents work done in a chosen major department or area, but is also usually expected to have done supporting work of advanced level (upper division or graduate) in one or more associated areas. There are three component parts to graduate study: course work, independent study, and independent scholarly research leading to a report, thesis, or dissertation. No one of these component parts can be neglected by the graduate student, although the proportion of independent study to course work may vary according to the previous training of the individual student and the area chosen.

Master of Arts degrees are offered in Drama and Speech, Economics, Education, English, History, Interdisciplinary Studies, Linguistics, Political Science, Psychology, Sociology, Spanish, Speech, and Speech Pathology and Audiology. A Master of Arts in Teaching with a major in Mathematics is also offered.

Master of Education degrees are offered in Professional School Administration, Elementary and Secondary Supervision, Counseling, Elementary and Secondary Teaching (with or without Professional Certificate), and Health and Physical Education.

Master of Science degree programs are offered in Biology, Chemistry, Engineering, Geology, Health and Physical Education, Interdisciplinary Studies, Mathematics, Nursing, and Physics.

A Master of Business Administration degree is offered in the College of Business Administration. A Master in Public Administration is offered by the Department of Political Science.

A Doctor of Geological Sciences degree is offered in the Department of Geological Sciences.

**Financial Assistance** — Scholarships, assistantships, work study and loan funds are available. Graduate scholarships are available to students of exceptional qualifications. Applications should be made to the Dean of the Graduate School.

Applications for scholarships are due on February 15. These awards will be for the next academic year.

Assistantship awards are handled by the departments. The College Work-Study Program and student loans are administered by the Financial Aid Office.

## Procedures and Requirements For Admission

Applications for admission must be made in the Office of the Dean of the Graduate School where forms may be secured.

The following documentation must be presented to the Office of the Dean *before* the application for admission to a degree program is acted upon:

1. Completed application form;
2. A bachelor's degree from an accredited institution in the United States or proof of equivalent training at a foreign institution. Graduates of U.T. El Paso must supply two unofficial complete transcripts on which the degree is posted; graduates of other schools must provide two complete official transcripts on which the degree has been posted — one for the Office of Admissions and Records and one for the Office of the Dean;
3. Evidence of a satisfactory grade point average in upper division (junior and senior level) work, and in any graduate work already completed;
4. A satisfactory score on the Graduate Record Examination Aptitude Test (GRE); or the Graduate Management Admissions Test (GMAT) for the Master of Business Administration degree; and the Test of English as a Foreign Language (TOEFL) for foreign applicants. All foreign students must take the advanced section of the Graduate Record Examination. Each applicant must have the official scores of required tests (GRE, GMAT, TOEFL) sent to the Office of the Graduate Dean. Student copies are not acceptable;
5. Evidence of adequate subject preparation for the proposed graduate major;
6. Recommendations by the committee on graduate studies of the proposed major department for acceptance, conditional acceptance or rejection based on the information submitted.

The committee's recommendation will be transmitted to the student by the Graduate Dean.

The Graduate Dean reserves the right to examine any application and, at his own discretion, regardless of other criteria, admit the student.

**Deadline for Submission of Application** — Individuals holding a baccalaureate degree from The University of Texas at El Paso should apply for admission at least thirty days prior to the beginning of the semester or summer session in which they plan to register. Those with degrees from other American universities or colleges should file their applications, along with official transcripts of all previous college or university work, at least sixty days in advance. Foreign students should apply much earlier. **All foreign students must take the advanced section of the Graduate Record Examination.**

Students from non-English speaking foreign countries must make a satisfactory score on the Test of English as a Foreign Language (TOEFL) given by the Educational Testing Service.

**The Graduate Record Examination Aptitude Test** — The Aptitude Test of the Graduate Record Examination is designed to test preparation and aptitude for graduate study, and it must be passed with a satisfactory score by everyone seeking admission to all graduate programs except the M.B.A. **Foreign students are required and all other students are encouraged to take the advanced part of the test for their major.** The test is taken at the applicant's own expense and is given six times a year, usually in October, December, January, February, April, and June.

**The Graduate Management Admissions Test** — The GMAT is an aptitude test designed to measure certain mental capabilities important in the study of management at the graduate level, and it must be completed with a satisfactory score by all students seeking admission to the MBA program. The test is taken at the applicant's own expense and is given four times a year, usually in November, January, March and July.



**Grade-Point Average** — An applicant with a 3.00 average (on the scale of 4.00) on all work of upper division (junior and senior) and graduate level previously taken has satisfied the minimum requirements of the Graduate School in this regard. Some applications showing less than a 3.00 average may nevertheless be accepted upon special recommendation of departmental graduate advisors.

**Acceptance by the Committee on Graduate Studies** — Students meeting other requirements for admission may nevertheless be denied admission by the departmental committee on graduate studies in their proposed area of study when there are more qualified applicants than can be accommodated in the available facilities, or when there are more than can be adequately instructed by the available faculty.

**Conditional Admission** — A student desiring to work toward an advanced degree in an area in which his undergraduate training is insufficient may be admitted with the understanding that course work must be completed to make up the deficiencies noted by his graduate advisor. Such make-up work will be *in addition* to the regular degree requirements.

When a student with less than minimum grade-point average or with a less than satisfactory GRE or GMAT test score is admitted on the recommendations of a graduate advisor, the first 12 semester hours the conditional student is to take will be assigned by the Graduate Advisor. Frequently, special conditions will be assigned regarding the number of semester hours to be taken and specific grade-point average to be maintained. If these conditions are not met, the student will be barred from subsequent registration in the Graduate School. Only in the most exceptional cases will conditional students be allowed to drop an assigned course.

**Enrollment in Graduate Courses Without Admission to Graduate School** — Individuals who have received a baccalaureate degree from an accredited institution (or its equivalent) but who have not supplied the documentation required for admission or individuals who do not wish to pursue a degree may enroll as "unclassified graduate students" and may register for courses (with the permission of the instructor). However, such registration does not constitute admission to the Graduate School nor can the courses taken prior to formal admission to the Graduate School be counted toward a graduate degree without a specific recommendation by the departmental graduate studies committee and approval by the Graduate Dean. Such approval is rarely given for coursework taken after the unclassified student's first semester on campus. Unclassified students who wish to request permission to count the coursework taken during their first semester on campus should complete the admissions requirements during their first semester in residence. The unclassified student should consult the Graduate Dean for further information.

## Graduate School Academic Regulations

The successful applicant will be informed by mail about his admission. The student should then, at the earliest opportunity, meet with the assigned advisor. The course program must be approved *each* semester by the official Graduate Advisor of the major department before registration for courses.

**Grades and Grade-Point Average** — Credit is given in the Graduate School for the grades A, B, and C. Every semester hour of C, however, must be balanced by one of A, because the degree candidate is required to present an overall grade-point average of 3.00 at the end of the program of study. In the event that a graduate student making a D is allowed to continue, the D must be balanced by two A's. An F must be balanced by three A's. Only upper division and graduate level courses taken in *graduate status* at the University, or reserved in the senior year for graduate credit (except thesis and dissertation courses) are counted in the average. A grade of A in a thesis course, dissertation course or in a specifically authorized seminar, conference or research course which involves a report in lieu of a thesis may not be used to offset a C.

In some courses the standard grading system is not practicable; such courses are not counted in the grade-point average.

A student may elect to take a pass-fail grade in a course, but this course cannot count as deficiency work or as a part of the minimum requirements for a degree.

The symbol I, meaning incomplete, reported in cases where the student has not completed all the assignments in a course before its conclusion, is valid for one year. Before the end of this time the student must turn in the required work for a regular grade. Students will not be cleared for graduation until all incompletes have been eliminated from their record.

Master's degree candidates must maintain, within the overall grade-point average, a 3.00 average in all upper division and graduate courses in the major and in the minor, respectively. Individual departments may impose more rigorous grading standards. High grades in courses outside the major and minor will not serve to bring up these averages. On the other hand, high grades in the major and minor may raise the overall average, provided they are in upper division or graduate courses.

**Maximum Course Load** — The maximum course load for a graduate student is 15 semester hours, or 6 semester hours in a summer term; registration in excess of these maxima must have the special consent of the Dean and will be permitted only under exceptional circumstances. If the student is employed by the University as a teaching assistant, research assistant, or student assistant, the course load must be correspondingly reduced. The student should consult the Graduate Advisor about the combined course and work load. Nine semester hours of graduate work is normally considered to be a full-time course load.

Credit for supervised teaching is not counted in determining combined course and work load.

**Registration and Changes of Registration** — University regulations governing registration and changes in registration are printed in the Academic Regulations section of this catalog. Consult the University calendar in the General Information section for pertinent dates. Both regulations and dates are also printed in the Schedule of Classes available prior to each semester or summer session.

**Continuation in the Graduate School** — Registration in the Graduate School beyond the first semester (or summer session) is dependent on two main factors: (1) Satisfactory progress in absolving any admission conditions that were imposed and (2) maintenance of a 3.00 grade-point average for all upper division and graduate courses taken in a given semester. Should a graduate student make less than a 3.00 grade-point average in a given semester or summer session, continuance in the Graduate School is in jeopardy. During the next semester or summer session in which he is registered, a 3.00 grade-point average must be maintained; if not, the student will be dismissed.

The graduate student who has been dismissed may be readmitted for further graduate study only by petition of the Committee on Graduate Studies of the department or area. This petition will be considered, and approved or disapproved, by the Dean of the Graduate School.

**Residence** — The minimum requirement for any degree is two semesters or the equivalent, which need not be consecutive.

A graduate student may register for certain courses without being resident (physically present) at the University. These include conference courses (with permission of the instructor), thesis and dissertation courses.

No student may receive advice and assistance from a member of the faculty in the preparation of a thesis or dissertation without being registered (if necessary, for multiple semesters) for the appropriate thesis course.

**Extension** — Work done in extension classes, up to a limit of 6 semester hours, upon recommendation of the departmental committee on graduate studies and approval of the Dean, may

be allowed for graduate credit, provided that (1) the courses and instructors are approved by the Graduate School and the department in which the student would have otherwise taken the work on campus and (2) the applicant, *before* taking the extension course, be accepted for admission to the Graduate School and approved by the *Dean for the courses desired*.

*Correspondence courses are not accepted for graduate credit.*

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

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

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

**Courses Counted for Another Degree** — No course counted toward another degree may be counted toward a graduate degree, either directly or by substitution.

**Transfer of Credit** — Ordinarily all work for a graduate degree must be done at the University. Except as noted in the next paragraph, a maximum of up to 6 semester hours of graduate course work may be transferred from another institution on the approval by the committee on graduate studies in the student's major area and the Dean. In cases where such transfer is approved, the student must still meet the residence requirements of two full semesters or the equivalent. Courses for which a grade of "C" was earned may not be transferred to U.T. El Paso.

It is the policy of the University of Texas System that all academic institutions within the System may accept graduate credit from each other, and the regular requirements on residency are adjusted accordingly.

**English Requirements** — Students admitted to the Graduate School are expected to write papers and examinations in English, except in specified foreign language programs. For admission to some areas of graduate study the student is required to pass an examination in English; in other areas, proficiency in written and spoken English will be checked in courses and in contacts with faculty members.

**Time Limits and Catalog Changes** — All requirements for a master's degree must be completed *within one six-year period*. Work over six years old is lost and can be reinstated only by special permission of the Dean upon recommendation of the committee on graduate studies.

General and specific requirements for degrees in the Graduate School may be altered in successive catalogs, but the student is bound only by the requirements of the catalog in force at the time of admission, within a six-year limit. The student may choose to fulfill the requirements of a subsequent catalog.

**Graduation Dates** — Degrees will be conferred at the end of each semester and at the end of the summer session. Students intending to graduate must file an application for the degree

prior to the deadline date published in the Class Schedule of the semester they plan to graduate.

**Degree Application Procedures** — Graduate degree candidates must bring to the Office of the Graduate Dean for approval an application for the degree signed by the *Departmental Graduate Advisor*. The *Graduate Dean-approved form* must then be hand carried to the Business Office for payment of the \$5.00 graduation fee. The degree application process is completed by filling the approved and paid application in the Office of Admissions and Records for the ordering of the diploma. This fee is not refundable if the student does not graduate on the date specified in the application.

**Two Degrees at Same Level** — The Graduate School discourages all students from working toward more than one graduate degree at the same level.

**Petition of Candidacy** — At the end of the first semester of full-time study, or completion of the first 12 hours of graduate work, each student must submit to the Office of the Dean a *Petition of Candidacy* signed by the *Departmental Graduate Advisor*. The *Petition* shall show the courses taken and the courses required by the department before graduation. *Petitions* which show an incomplete grade or a GPA below a "B" average cannot be approved. Copies of the *Petition of Candidacy* are available in the Office of the Dean.

## General Degree Requirements For All Master's Degrees

**Prerequisites** — Every Master of Arts, Master of Arts in Interdisciplinary Studies, Master of Business Administration, Master of Education, Master in Public Administration, Master of Science, Master of Science in Interdisciplinary Studies and Master of Science in Nursing program is based on the assumption that the student participating in it already possesses a general college education through the baccalaureate level. Accordingly, the first prerequisite for the entering student is a baccalaureate degree from an accredited institution (or, for foreign and special students, proof of equivalent training). A second prerequisite is that the entering student must have taken at least 12 semester hours of *advanced* undergraduate courses in the area or school in which he proposes to pursue a graduate major. Some areas may require more semester hours of undergraduate preparation. If a student without adequate preparation still wishes to enter a given graduate program, admission will be *conditional* until such time as the student has completed the courses of preparatory work designated by the graduate advisor. These courses will be in addition to the 30 hours (or more) required for the master's degree itself.

*Those graduate programs for which a major/minor is declared* require the completion of at least 18 semester hours of instruction in the major area and a minimum of 6 hours in a supporting subject or subjects outside the major area.

**Entering Examination** — The committee on graduate studies in the student's major area or department may, at its discretion, examine the student's undergraduate preparation before the application to enter the program is approved.

**Requirements** — At least 30 semester hours of upper division and/or graduate instruction are required for any master's degree: *9 semester hours of upper division courses are the maximum allowable in any individual's program* and not more than 6 semester hours may be included in either the major or the minor. Those graduate programs for which a major/minor is declared require the completion of at least eighteen semester hours in the major area and a minimum of six hours in a supporting subject or subjects outside the major area. The relative number of hours in the major and minor fields, as well as the nature of the supporting work, will be determined in consultation with the student's Graduate Advisor. Every proposed program of work needs the approval of the Dean.

### Thesis Requirements for the Graduate Degree

The candidate for the master's degree writes a thesis under the direction of a supervising committee, consisting of at least

two departmental representatives and one member from outside the department. The thesis is subject to the approval of the committee and ultimately to the approval of the Graduate Dean. The researching and writing of the thesis involves 6 semester hours of credit, but with special recommendation of the advisory committee and approval of the Dean, 9 semester hours of credit may be awarded. In order to obtain the 6 semester hours credit for the thesis, the student must register for course 3598 when work on the thesis is begun. Thereafter he must register for course 3599 each semester or term during which he is working on the thesis.

Two completed and bound copies of the thesis, suitably titled, neatly typed on quality bond paper in uniform large type, double-spaced, must be presented to the Dean of the Graduate School prior to the deadline date published in the Class Schedule of the semester the student plans to graduate. Both copies of the completed thesis submitted to the Graduate Dean's Office must bear original signatures of the members of the thesis committee.

If a student has not completed thesis work at the end of two years after the subject has been approved and recorded, the supervisor may require choice of another subject. Credit in the thesis course will not be granted until the thesis is completed and approved. Information on thesis preparation may be obtained from the Graduate Dean's Office.

**Substitution for the Thesis** — In certain instances substitutions for the formal thesis may be recommended to the Dean by the appropriate committee on graduate studies. Such substitutions may include internship reports (where the internship is approved as an essential part of the graduate program by the Dean) or reports prepared in certain graduate seminar- or conference-type courses. In every instance, such a substitution for the thesis must have the prior approval of the Graduate Dean. Reports should be comparable to the thesis in every respect except for evidence of original research. It is required that the report be:

- (1) from a *specifically authorized* seminar, conference, or research course which has the prior approval of the Dean of the Graduate School;
- (2) reviewed and accepted by a supervising committee appointed by the Dean's office; upon acceptance of the report by the official committee, the candidate must submit two copies, entirely comparable to a thesis in terms of format, quality of paper, typing, binding, etc. to the Office of the Graduate Dean.

**Final Examination** — All graduate degree candidates are required to satisfactorily complete an oral or written examination or both. The examining committee consisting of at least three members is appointed by the Graduate Dean, on recommendation of the graduate studies committee of the department or area, and when a thesis is written it will normally be the thesis committee. The committee will have one representative from the minor area. If there is no minor, one member of the Committee must be from another department.

## Specific Degree Requirements

### FOR THE MASTER OF ARTS DEGREE

#### General Requirements

1. A thesis (6 semester hours) plus 24 semester hours of course work. There must be a minimum of 21 hours, including the thesis, of graduate courses (those numbered 3500 and above). For non-thesis programs, a minimum of 36 hours of course work is required. Only 9 hours of 3300 and 3400 courses are permitted in a program, and no more than 6 hours may be included in either major or minor.
2. A major with a minimum of 18 semester hours including the thesis. Major fields for the Master of Arts include Drama and Speech (including speech pathology and audiology), Economics, Education, English, History, Linguistics, Political Science, Psychology, Sociology and Spanish.

3. A minor of from 6 to 12 hours in a related field may be accepted or required by the department. A transfer student must complete at least 3 hours of the minor in residence.

### FOR THE MASTER OF ARTS IN INTERDISCIPLINARY STUDIES DEGREE

The M.A.I.S. program is designed for the individual who, having completed a baccalaureate program or professional degree program at an accredited college or university, now wishes to expand his knowledge in areas outside of his previous training or present profession. To this end, each student will participate in the design of a degree program composed of courses offered by a variety of departments and core seminars designed specifically for students in the program.

#### Basic Requirements for Admission

1. A bachelor's degree from an accredited institution in the United States (or proof of equivalent training in a foreign institution).
2. A satisfactory grade-point average in upper-division (junior and senior level) work and in any graduate work already completed.
3. A satisfactory score on the Graduate Record Examination.
4. Acceptance by the M.A.I.S. Graduate Committee.

#### Specific Requirements for the M.A.I.S. Degree

1. Thirty-six hours of coursework, no more than 9 of which may be in a single department.
2. A minimum of 27 hours of graduate courses (those listed 3500 and above); the remaining hours must be numbered 3400, or if 3300-level, as "For Undergraduates and Graduates."
3. A minimum of 3 hours of coursework from among the M.A.I.S. core seminars.

#### MAIS 3550 The History of an Idea

The historical consideration of a seminal idea or concept drawn from art, ethics and politics, science, religion or philosophy and an assessment of its contemporary social and cultural importance. This course may be team-taught and cross-listed with a participating department. May be repeated for credit when topic varies.

#### MAIS 3560 Contemporary Issues

The detailed examination of a contemporary social or cultural concern from a multi-disciplinary perspective. This course may be team-taught and cross-listed with a participating department. May be repeated for credit when topic varies.

### FOR THE MASTER OF ARTS IN TEACHING (With a Major in Mathematics)

This program provides an opportunity for secondary school teachers of mathematics to earn an advanced degree with a primary emphasis on the subject matter of their field and at a level that will be of value in their classrooms. This program gives the student a broad background in mathematics, rather than a specialized research-oriented program. The particular courses taken would depend on the individual's background and interest and would be selected in consultation with the Graduate Advisor of the Department of Mathematical Sciences.

#### Requirements for Admission

In addition to the general requirements for admission to the Graduate School, the students must have completed the calculus sequence together with 12 semester hours of advanced courses in mathematics. Since the degree is intended for high school teachers of mathematics, two years of classroom experience are required for admission to this program.

**Course requirements**

The Master of Arts in Teaching degree requires 36 semester hours of course work. Six to 9 of these hours must be taken in the College of Education. The remaining hours must be taken in mathematical sciences or computer science. A maximum of 18 of these hours may be chosen from 3300 or 3400 level courses. Each student must have his or her courses approved by the Graduate Advisor in order to ensure adequate breadth of courses in the mathematical sciences. All students are required to take Math 3571 after completing at least 24 hours of their program.

**FOR THE MASTER OF BUSINESS ADMINISTRATION DEGREE**

The objective of the M.B.A. program is to prepare graduates for executive careers in business or in institutions that use business techniques and policies in management and administration. The program meets this objective by being broad in nature and aimed at general competence for overall management and administration. The bulk of course work is devoted towards a broad understanding of the environment, controls and practices which are common to most institutions. The remaining courses are determined by the student's special area of interest or concern.

**Basic Requirements for Admission to the M.B.A. Program:**

1. A bachelor's degree from an accredited institution in the United States (or proof of equivalent training in a foreign institution).
2. A satisfactory grade-point average in upper division (junior and senior level) work and in any graduate work already completed.
3. A satisfactory score on the Graduate Management Admissions Test, the GMAT.
4. Acceptance by the Committee on Graduate Studies in the College of Business Administration.
5. Adequate subject matter preparation in Business Administration. Applicants must demonstrate sufficient knowledge in each area of the common body of knowledge of business. Such demonstration may be made by:
  - a. Having obtained an undergraduate degree in Business or Administration, or
  - b. Completion with a B or above of the courses listed below at this University or equivalent courses at other accredited institutions.

<i>Common body of Knowledge Area</i>	<i>Corresponding Courses at U. T. El Paso</i>	<i>Credit hours</i>
The Legal Environment	Business Law 3301	3
The Economic Environment	Economics 3203-04	6
Financial Management	Finance 3310	3
Marketing Institutions	Marketing 3300	3
Accounting and Information Systems	Accounting 3309	3
Management Systems	Management 3300	3
Quantitative Methods	Statistics 3201	3
		24

**Specific Requirements for the M.B.A. Degree**

1. Completion of the required Business Core:
 

Accounting	3511	Accounting for Management
Economics	3511	Managerial Economics
Economics	3512	The Economic Environment
Finance	3511	Financial Management
Marketing	3511	Marketing Management
Management	3511	Organizational Management Seminar
Statistics	3511	Quantitative Methods in Business
General Business	3521	Seminar in Current Business Problems

2. Completion of an additional 12 elective hours. A student may elect to complete either (a) 12 hours in a field of specialization, not more than 9 of which may be a junior or senior level course acceptable for graduate credit, or (b) 6 hours of thesis. Course work in the field of specialization is not restricted to courses offered by the College of Business Administration, but under any circumstances, elective courses must have a meaningful design that corresponds to the student's educational goals.
3. Each student must provide a satisfactory performance on a comprehensive written or written and oral examination which will be administered in the last semester of the student's program.

**FOR THE MASTER OF EDUCATION DEGREE****General requirements for all programs:**

1. Thirty-six semester hours of course work.
2. There must be a minimum of 27 hours of graduate courses (those listed 3500 and above). The other courses must be numbered 3300 and 3400 or above which are listed for graduate credit.
3. A transfer student must complete at least 3 semester hours of the minor in residence.

Students who are employed in full-time teaching positions are limited to 3 semester hours of work each semester by the Texas Education Agency. With the written consent of the school superintendent, a student may take 6 semester hours of graduate credit for one semester a year.

**Teacher Certification:**

If a student wishes to work toward a graduate degree and at the same time meet the requirements for an initial teacher's certificate, he should consult with the Dean or Associate Dean of the College of Education in addition to the departmental graduate advisor.

**Approved programs:**

The following graduate programs have been approved by the Texas Education Agency and the State Board of Education for the Professional Certificate:

**CURRICULUM AND INSTRUCTION:**

Elementary Teaching

Secondary Teaching

**EDUCATIONAL ADMINISTRATION:**

School Administration

Educational Supervisor in Elementary School

Educational Supervisor in Secondary School

**EDUCATIONAL PSYCHOLOGY AND GUIDANCE:**

Counseling and Guidance

Education Diagnostician

**HEALTH AND PHYSICAL EDUCATION****FOR THE MASTER IN PUBLIC ADMINISTRATION DEGREE**

The professional Master in Public Administration (MPA) degree provides professional education for students interested in public service careers. The program is designed to stress the knowledge, skills, values and behavior essential to the successful public servant. Some flexibility in curriculum is permitted to meet the diverse educational needs of pre-entry and in-career students, changing career students, and students with interests in different career specialities in public administration. The curriculum components are designed to produce professionals capable of intelligent and creative analysis, communication, and action in the public sector context.

**Basic Requirements for Admission to the MPA Program**

1. Satisfactory GRE Score;
2. Satisfactory GPA (3.0) in all upper division work;
3. All students must have the course equivalent of 3 hours of Public Administration and 3 hours of American Government as a prerequisite to the graduate seminars in the MPA Program;
4. In-career students may be requested to submit vitae of their professional work and letters of recommendation to complete the evaluation for admission and eligibility to enroll in certain graduate courses.

**Specific Requirements for the MPA Degree**

Completion of at least 36 semester hours of course work consisting of the following:

1. At least 18 hours of courses in the theoretical, methodological and technical components of public management science:  
Political Science 3500 — Personnel Administration  
Political Science 3502 — Public Fiscal and Budgeting Administration  
Political Science 3504 — Public Policy Analysis  
Political Science 3505 — Program Analysis and Evaluation  
Political Science 3527 — Administrative Law and Regulation  
Political Science 3538 — Administrative Theory
2. Completion of 6 hours of internship (Political Science 3591, 3592) during which students will prepare two (2) formal intern reports on subjects or a single longer report approved by their advisor.
3. Completion of an additional 12 hours of approved electives. No more than 6 hours of electives can be at the 3300 and 3400 level.

Those students who want to take courses in Criminal Justice to satisfy the 12 hour elective requirement for the MPA degree will select four (4) courses from the following:

- Criminal Justice 3500 — Seminar in Criminal Justice Administration
- Criminal Justice 3508 — Seminar in Juvenile Justice
- Criminal Justice 3510 — Seminar in Law Enforcement
- Criminal Justice 3520 — Seminar in Corrections
- Criminal Justice 3540 — Seminar in Selected Topics

**FOR THE MASTER OF SCIENCE DEGREE****General Requirements**

1. A thesis (6 semester hours) plus 24 semester hours of course work. (Some departments have plans requiring 36 hours without a thesis.) Only 9 hours of 3300 or 3400 courses are permitted in a program, and no more than 6 hours may be included in either major or minor.
2. A major with a minimum of 18 semester hours including the thesis. Major fields for the Master of Science include Biology, Chemistry, Engineering, Geology, Health and Physical Education, Mathematics, and Physics.
3. A minor of from 6 to 12 hours in a related field may be accepted or required by the department. A transfer student must complete at least 3 hours of the minor in residence.

**FOR THE MASTER OF SCIENCE IN INTERDISCIPLINARY STUDIES DEGREE****Nature of the Program**

The MSIS Program is designed for the individual who, having completed a baccalaureate program at an accredited college or university, now wishes to expand his knowledge at the

graduate level not only in his baccalaureate field of study but more particularly in areas outside of his previous training. Student motivation for such training may stem from needs of his present employment or from the desire to prepare for unusual employment opportunities (outside the usual academic disciplines) or from the desire to be able to solve problems in trans-disciplinary areas. Individual programs of study are designed to fit the needs of the student.

**Basic Requirements for Admission to the MSIS Program**

1. A bachelor's degree from an accredited institution in the United States (or proof of equivalent training in a foreign institution).
2. A satisfactory grade point average in upper division (junior and senior level) work and any graduate work already completed.
3. A satisfactory score on the Graduate Record Examination.
4. A letter to the MSIS Committee outlining intended areas of study and educational goals.
5. Acceptance by the MSIS Committee.

**Specific Requirements for the MSIS Degree**

1. Thirty-six hours of approved course work, distributed among courses offered by at least three different departments.
2. No more than 15 hours of course work from a single department in the field of greatest concentration; maximum of 12 hours in any other department's offerings.
3. A minimum of 24 hours of graduate courses (those listed 3500 and above); the remaining hours must be undergraduate (3300 and 3400 level) courses listed as "For Undergraduates and Graduates."
4. A maximum of 6 hours of "Research Problem" courses.
5. The majority of coursework in science and engineering fields.

**FOR THE MASTER OF SCIENCE IN NURSING DEGREE****Objectives of the Master of Science in Nursing Program**

The Graduate Program in Nursing of The University of Texas at El Paso College of Nursing is designed to permit students to earn a Master of Science degree (36 semester credits) in specialized areas of clinical nursing practice (specialization in direct patient/client care) as the major and a functional nursing minor. The clinical majors include medical-surgical and/or psychiatric-mental health nursing. The plan for graduate education is to expand the clinical major to eventually include additional areas of nursing content specialization; i.e., maternal-child and geriatric.

Functional minors include teaching in nursing or clinical supervision and administration in nursing.

The master's program focuses on the care of clients/patients presenting multiple health problems that are complex. The core of knowledge focuses on developing the interrelationship between theory, practice and research.

The objectives evolve from the philosophy and purpose of the graduate program. The graduate of the Master's Program in Nursing has been provided the basis for:

1. Synthesizing theoretical formulations from nursing and other disciplines and developing specific applications in the care of individuals, families and communities.
2. Evaluating the use of theoretical formulations in direct nursing care and related activities in a selected area of clinical specialization.
3. Critically analyzing health and nursing problems using the scientific method of investigation as a base for resolving their problems.

4. Implementing the nursing process in the support of individuals, families, and communities with multifaceted problems in promotion, attainment, and maintenance of health.
5. Analyzing theoretical and conceptual framework from nursing and other disciplines and in their application within the context of practice, teaching, supervision and administration in nursing.
6. Seeking opportunities to continue personal and professional development and also to provide a base for doctoral study.
7. Promoting nursing as a profession by utilizing opportunities for leadership at the local, national and international level.

#### Requirements for Admission to the Nursing Program

1. Completed application form.
2. Evidence of satisfactory completion of an NLN accredited baccalaureate nursing program in the United States or proof of equivalent education at a foreign institution. Two complete official transcripts on which the degree has been posted must be submitted.
3. Evidence of a satisfactory grade point average in upper division (junior and senior level) course work, and in any graduate work completed. (A course in statistics is required.)
4. A satisfactory score on the Graduate Record Examination Aptitude Test (GRE).
5. Recommendations by the committee on graduate studies in the College of Nursing.
6. Evidence of a complete and satisfactory physical examination.
7. Current liability insurance in the amount of \$100,000-\$300,000.
8. Current licensure or a temporary permit to practice as a Registered Nurse in one of the states or territories. Students from other countries must be authorized to practice nursing in their own country.

#### Degree Requirements for the Master of Science in Nursing

The degree plan calls for a minimum of 36 hours of credit, of which at least 30 credit hours is course work and 6 hours of credit for the thesis. A thesis option is available to all students; therefore, a thesis is not required. All students are required, however, to take the research course, and as a course requirement must either replicate a study or design an original research proposal. Those who complete a proposal and desire to do a thesis are strongly encouraged to implement their proposal. The thesis must be approved by the thesis advisor and by two other supervisory committee members selected by the student and advisor and appointed by the Dean. The student registers for 6 hours of thesis credit. The candidate must defend the thesis in an oral examination before the committee and Dean. Those who do not choose to write a thesis may take 6 hours in electives which are approved by the program advisor. A comprehensive examination is required for completion of the degree.

#### Student Employment

Student employment is a personal decision; however, it is up to the student to arrange the work schedule so as not to interfere with classes and clinical practicum requirements.

### FOR THE DOCTOR OF GEOLOGICAL SCIENCES DEGREE

**Requirements for Admission** — The Graduate Record Examination in Geology must be taken by all incoming graduate students. Students aspiring to the doctorate in Geological Sciences fall into three categories:

A Provisional Doctoral Student is one who holds a master's degree from an accredited institution in one of the following

areas: biology, chemistry, mathematics, physics, civil engineering, or metallurgical engineering, and intends to make up all deficiencies in geological background. Students holding the baccalaureate from an accredited institution in one of the above areas are encouraged to contact the Graduate Advisor to discuss procedures leading to acceptance as a Provisional Doctoral Student.

A Doctoral Student is one who (1) holds a master's degree in Geological Sciences from an accredited institution, or (2) holds a bachelor's degree in Earth Sciences from an accredited institution and has no deficiencies in science courses required for the B.S. degree in Geological Sciences at U.T. El Paso and has completed 30 hours of post-bachelor's study in Geology, or (3) has been removed from the Provisional Doctoral Student category by removing any deficiencies, completing 18 graduate hours in Geological Sciences, and receiving recommendation for Doctoral Student status from the Advisory Committee.

A Doctoral Candidate is one who (1) has removed all academic deficiencies, (2) has satisfied the provisions of the Foreign Language requirement, (3) has completed at least three-fourths of the required credit hours in Geological Sciences and supporting fields, (4) has passed the prescribed Comprehensive Examination, and (5) has been approved for Candidacy by the Graduate Dean, upon the recommendation of the Comprehensive Examination Committee.

**Course Requirements** — The Doctor of Geological Sciences degree requires 60 semester hours of graduate study above the baccalaureate or 30 semester hours of graduate study above the master's degree. A dissertation is required. Not more than one-fifth of the required graduate hours can be earned in Special Problems courses.

Technical Sessions (Geology 1501), is a required course.

A student must complete 6 hours of courses in a relevant supporting field, 3 hours of which must be at the graduate level.

**Internship** — Each doctoral candidate is required to have, or to gain, practical, professional experience equivalent to at least nine months of work in the petroleum or mining industries, or with an applied branch of the federal or state geological surveys, or with similar industries or agencies which use applied geology at a professional level. This requirement may be fulfilled by full-time employment for a period of nine months or during summer employment. The student's doctoral committee will evaluate the adequacy of the internship.

**Foreign Language Requirement** — Each doctoral candidate is required to possess a comprehensive knowledge of one language other than his native tongue. Proficiency in a foreign language must be demonstrated by (1) passing a comprehensive examination, or (2) completing four semesters of college courses in the selected language, or (3) showing that the undergraduate degree was obtained in courses taught using a language other than English.

**Committees** — For each provisional doctoral student or doctoral student, the Graduate Advisor shall appoint an Advisory Committee consisting of three members of the graduate faculty.

For each doctoral candidate, a Doctoral Committee will consist of the dissertation advisor, the graduate advisor, two professors of geology, and one other scientist or engineer — all of whom are members of the graduate faculty, and are approved by the Dean of the Graduate School.

The Graduate Advisor will appoint a Comprehensive Examination Committee to administer the written and oral Comprehensive Examination.

**Examinations** — The department's Comprehensive Examination Committee shall administer a comprehensive examination at least once each year. The examination will consist of geological sciences as well as coverage of a special field selected by the student.

The Comprehensive Examination will normally be taken after removal of all deficiencies and completion of most of the



course work. Any student who fails the Comprehensive Examination twice shall be barred from further consideration for Doctoral Candidacy.

**Dissertation** — A doctoral dissertation dealing with an application-oriented problem is required. This dissertation must demonstrate the candidate's capacity for originality and independence in recognizing a practical, significant geological problem, in carrying out an effective investigation, and in interpreting and reporting the results. The subject of the dissertation is to be selected in consultation with the dissertation advisor, and it must be approved by the student's Doctoral Committee and by the Graduate Dean. The dissertation advisor is to supervise the research work and to consult with other members of the Doctoral Committee on the progress of the work.

The candidate is required to defend the dissertation before the faculty of the University in an open meeting under the supervision of his Doctoral Committee.

Draft copies of the dissertation must be submitted to the Doctoral Committee six days before the defense and any suggested corrections must be made. Prior to commencement, two copies of the final bound dissertation, and the unbound original, must be submitted to the Graduate School Office. Two bound copies must also be submitted to the Graduate Advisor.

**Microfilming of Dissertation** — The doctoral candidate who has successfully completed all requirements for the degree is required to pay the cost of microfilm reproduction of the complete dissertation. The signed original copy (unbound) of the doctoral dissertation is sent from the Office of the Graduate

School to University Microfilms, Ann Arbor, Michigan, for reproduction.

With the dissertation the student must also submit to the Dean of the Graduate School two copies of an abstract, not to exceed two pages in length (double-spaced) which has been approved in final form by the supervising committee. This will be published in *American Dissertation Abstracts*.

Publication by microfilm does not preclude subsequent publication of the dissertation, in whole or in part, as a monograph or in a journal. Copyright at the author's expense may be arranged, if desired, by completing a special form to be secured in the Graduate School Office. In order to protect patent or any other rights, the Graduate Dean may be requested to delay publication by microfilm for a period of one year. This request must be supported by a written recommendation of the supervising professor.

**Time Limits and Catalog Changes** — All requirements for a Doctor of Geological Sciences degree must be completed within one eight year period. Work more than eight years old is lost and can be reinstated only by special permission of the Graduate Dean upon recommendation of the Departmental Committee on Graduate Studies. Further, all requirements for the doctorate must be completed within five years after passing the comprehensive examination.

General and specific requirements for the doctorate may be altered in successive catalogs, but the student is bound only by the requirements in force at the time of admission. Within an eight year limit, the student may choose to fulfill the requirements of any subsequent catalog.



# THE FACULTY

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- MARYDELLE POLK, R.N.**, Assistant Professor of Nursing, 1978  
B.S.N., The University of Texas at Houston; M.S., Texas Woman's University
- SHARON M. PONTIOUS, R.N.**, Assistant Professor of Nursing, 1974  
B.S.N., University of Wisconsin; M.S.N., University of Minnesota; Ph.D., New Mexico State University
- CLARENCE L. PORTER**, Principal Instructor of Military Science, 1980  
Master Sergeant, U.S. Army
- JOHN POTEET**, Associate Professor of Health and Physical Education, 1967  
B.S., M.S., Baylor University; Ed.D., North Texas State University
- MAUREEN AUDREY POTTS**, Assistant Professor of English, 1970  
B.A., M.A., M.Phil., University of Toronto; Ph.D., Texas Women's University
- THOMAS JOSEPH PRICE**, Associate Professor of Political Science, 1970  
B.S., College of Charleston; M.A., University of Chicago; Ph.D., Florida State University
- JESUS ROBERTO PROVENCIO**, Assistant Professor of Mathematics, 1966  
B.S., M.S., The University of Texas at El Paso
- JOAN PHELAN QUARM**, Associate Professor of English, 1957  
B.A., Reading University (England); M.A., San Francisco State College
- JOHN RACKOVAN, JR.**, Professor of Military Science, 1981  
B.S., University of Nebraska; M.A.J., Wichita State University; Major, U.S. Army
- EPPIE D. RAEL**, Assistant Professor of Biological Sciences, 1975  
B.S., University of Albuquerque; M.S., New Mexico Highlands University; Ph.D., University of Arizona
- JOSEPH MALCHUS RAY**, Professor Emeritus of Political Science, President Emeritus, 1960  
B.A., M.A., Ph.D., The University of Texas at Austin
- KEITH ALLEN REDETZKE**, Assistant Professor of Biological Sciences, 1973  
B.S., M.S., University of Idaho; Ph.D., Colorado State University
- MARTA L. REEDER, R.N.**, Assistant Professor of Nursing, 1979  
B.S., Baldwin Wallace College; M.S.N., The University of Texas at El Paso
- WILLIAM HARPER REID**, Associate Professor of Biological Sciences, 1975  
B.S., University of Missouri; Ph.D., University of Colorado
- ANDREE J. REYNOLDS, R.N.**, Instructor of Nursing, 1980  
B.S.N., M.S.N., Ohio State University
- JOSEPH CHARLES RINTELEN, JR.**, Professor Emeritus of Metallurgical Engineering, 1949  
B.S., Brooklyn Polytechnic Institute; M.S., Cornell University; Ph.D., Duke University
- STEPHEN RITER**, Professor of Electrical Engineering, 1980  
B.A., B.S., Rice University; M.S., Ph.D., University of Houston
- JULIUS RIVERA**, Professor of Sociology and Anthropology, 1973  
M.A., University of Detroit; Ph.D., Michigan State University
- WILLIAM HENRY RIVERA**, Associate Professor of Chemistry, 1962  
B.S., Ph.D., University of Louisville
- GORDON WESLEY ROBERTSTAD**, Professor of Biological Sciences, 1968  
B.S., M.S., University of Wisconsin; Ph.D., Colorado State University
- PETER ROBINSON**, Associate Professor of Philosophy, 1970  
B.A., University of Massachusetts; M.A., Ph.D., Boston University
- FERMIN RODRIGUEZ**, Assistant Professor of Modern Languages, 1965  
B.A., Colorado State College; M.A., The University of Texas at El Paso; Ph.D., The University of Arizona
- PATRICK ROMANELL, H.Y.**, Benedict Professor of Philosophy, 1965  
B.A., Brooklyn College; M.A., Ph.D., Columbia University
- ALBERT CHARLES RONKE**, Assistant Professor of Drama and Speech, 1966  
B.A., M.A., Bowling Green State University
- WALTER RAY ROSER**, Associate Professor of Metallurgical Engineering, 1966  
B.S., The University of Texas at El Paso; M.S., University of California at Berkeley; Ph.D., University of Arizona
- PETTEY C. ROSS, R.N.**, Assistant Professor of Nursing, 1979  
B.S., Texas Christian University; M.S., University of Colorado at Boulder
- TIMOTHY PETER ROTH**, Associate Professor of Economics, 1970  
B.S., Albright College; M.A., State University of New York at Binghamton; Ph.D., Texas A&M University
- ROBERT F. ROY, L.A.**, Nelson Professor of Geological Sciences, 1977  
B.A., M.A., Ph.D., Harvard University
- DAVID BERNARD ROZENDAL**, Associate Professor of Civil Engineering, 1960  
B.S., South Dakota School of Mines and Technology; M.S., University of Minnesota; Ph.D., Purdue University
- EDGAR THOMAS RUFF**, Professor Emeritus of Modern Languages, 1959  
B.A., M.A., Northwestern University; Ph.D., The University of Texas at Austin
- WILLIAM J. RUGG**, Assistant Professor of Mass Communications, 1975  
B.A., Barrington College; M.S., Utah State University
- JAMES W. RUSSELL**, Assistant Professor of Sociology, 1978  
B.A., M.A., Ph.D., University of Wisconsin at Madison
- WILLIAM MAURICE RUSSELL**, Professor of Modern Languages, 1964  
A.B., Birmingham-Southern College; M.A., Ph.D., University of North Carolina

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- RICHARD J. SALO**, Visiting Assistant Professor of Biological Sciences, 1978  
B.S., Michigan State University; M.S., Wayne State University; Ph.D., University of Wisconsin
- ROY J. SALOME, C.P.A.**, Assistant Professor of Accounting, 1975  
B.B.A., University of Texas at El Paso; M.B.A., J.D., Texas Tech University
- JOHN PAUL SCARBROUGH**, Associate Professor of Curriculum and Instruction, 1964  
B.A., New Mexico Highlands University; Ed.D., University of New Mexico
- ELLERY STOWELL SCHALK**, Associate Professor of History, 1970  
B.A., Wesleyan University; M.A., Ph.D., University of California at Berkeley
- DAVID ARTHUR SCHAUER**, Associate Professor of Economics and Finance, 1975  
B.S., Jamestown College; M.A., Ph.D., University of Notre Dame
- ROBERT HOWARD SCHMIDT, JR.**, Professor of Geological Sciences, 1969  
B.S., M.S., Oregon State University; Ph.D., University of California at Los Angeles
- DARRELL CHARLES SCHRODER**, Associate Professor in the Department of Electrical Engineering, 1971  
B.S., M.S., Ph.D., Iowa State University
- ROBERT LOUIS SCHUMAKER**, Associate Professor of Physics, 1946  
B.S., The University of Texas at El Paso; M.S., University of Arizona
- EUGENE FRANCIS SCHUSTER**, Professor of Mathematics, 1970  
B.A., St. John's University; M.A., Ph.D., University of Arizona
- DAVID E. SCHWALM**, Assistant Professor of English, 1980  
B.A., Carlton College; M.A., Ph.D., University of Chicago
- EMMA GUERRA SCRUGGS**, Assistant Professor of Modern Languages, 1962  
Dra. en Filosofia y Letras, Dra. en Pedagogia, Universidad de Havana
- JOSEPH WALLACE SCRUGGS**, Assistant Professor of Chemistry, 1946  
B.S., Texas A&M University; M.A., The University of Texas at Austin
- AARON LEE SEGAL**, Director, Inter-American and Border Studies Institute, 1981  
B.A., Occidental College; B.Phil., Oxford University; Ph.D., University of California, Berkeley
- HANNAH BEATRICE SELIG**, Assistant Professor of Curriculum and Instruction, 1967  
B.S., New Jersey Trenton State College; M.A., Teachers College, Columbia University
- JOHN McCARTY SHARP**, Professor of Modern Languages and Linguistics, 1949  
B.A., Westminster College; M.A., Ph.D., University of Chicago
- I. THOMAS SHEPPARD**, Associate Professor of Management, 1973  
B.S., Florida State University; M.S., The George Washington University; M.A., University of Oklahoma; Ph.D., The University of Texas at Arlington
- KENNETH BRUCE SHOVER**, Professor of History, 1962  
B.A., M.A., University of Missouri at Kansas City; Ph.D., University of California at Berkeley
- MICHAEL W. SHURGOT**, Assistant Professor of English, 1975  
B.A., Canisius College; M.A., University of Minnesota; Ph.D., University of Wisconsin at Madison
- PHIL A. SIMPSON**, Instructor of Art, 1980  
B.S., Ball State University; M.F.A., Southern Illinois University
- PATRICK JOSEPH MORGAN SINGER**, Instructor in Art, 1978  
B.S., University of Houston; M.A., New Mexico State University
- ELIZABETH ANN ROUSE SIPES**, Assistant Professor of Business, 1968  
B.B.A., M.Ed., The University of Texas at El Paso
- MARY HOYTE SIZEMORE, R.N.**, Assistant Professor of Nursing, 1979  
B.S., Incarnate Word College; M.S., Texas Women's University; Ed.D., Nova University
- HAROLD SCHULTZ SLUSHER**, Assistant Professor of Physics, 1957  
B.A., University of Tennessee; M.S., University of Oklahoma; Sc.D., (Hon.) Christian University
- RAY SMALL**, Professor of English; Dean Emeritus, College of Liberal Arts, 1961  
B.A., West Texas State University; M.A., Ph.D., The University of Texas at Austin
- JOSEPH ROYALL SMILEY**, Professor Emeritus of Modern Languages; President Emeritus, 1958  
B.A., M.A., LL.D., Southern Methodist University; Ph.D., Columbia University; LL.D., University of Denver
- JACK SMITH**, Professor of Electrical Engineering, 1964  
B.S., M.S., Ph.D., University of Arizona
- WILLIAM DOYLE SMITH**, Assistant Professor of Economics and Finance, 1981  
B.A., M.A., University of Texas at El Paso; Ph.D., Texas Tech University
- CHARLES LELAND SONNICHSEN**, Professor Emeritus of English, 1931  
B.A., University of Minnesota; M.A., Ph.D., Harvard University
- WILLIAM CAJETON SPRINGER**, Associate Professor of Philosophy, 1968  
B.A., Loyola University of Los Angeles; M.A., Gregorianum, Rome; Ph.D., Rice University
- CHARLES FREDERICK SPRINGSTEAD**, Assistant Professor of Linguistics, 1965  
B.A., Stanford University; M.A., The University of Texas at El Paso
- V.K. SRINIVASAN**, Associate Professor of Mathematics, 1970  
B.A., M.A., M.Sc., Ph.D., Madras University, India
- STEPHEN W. STAFFORD**, Associate Professor of Metallurgical Engineering, 1976  
B.S., University of Texas at El Paso; Ph.D., Rice University
- TONY JASON STAFFORD**, Professor of English, 1964  
B.A., Wake Forest University; M.A., The University of Texas at El Paso; Ph.D., Louisiana State University
- LESTER A. STANDIFORD**, Associate Professor of English, 1973  
B.A., Muskingum College; M.A., Ph.D., University of Utah
- CHARLES ROY STANLEY**, Associate Professor of Music, 1966  
B.S., Anderson College; M.S., Southern Baptist Seminary
- KATHLEEN A. STAUDT**, Assistant Professor of Political Science, 1977  
B.A., University of Wisconsin at Milwaukee; M.A., Ph.D., University of Wisconsin at Madison
- DAVID B. STEPHENS**, Associate Professor of Business, 1978  
B.A., Brigham Young University; M.B.A., University of Pittsburgh; Ph.D., The University of Texas at Austin
- ELLWYN REED STODDARD**, Professor of Sociology and Anthropology, 1965  
B.S., Utah State University; M.S., Brigham Young University; Ph.D., Michigan State University
- WALLACE B. STOELZEL**, Instructor of Business, 1980  
B.A., Colorado State College; M.N.S., Arizona State University
- WILLIAM SAMUEL STRAIN**, Professor Emeritus of Geological Sciences, 1937  
B.S., West Texas State University; M.S., University of Oklahoma; Ph.D., The University of Texas at Austin
- MELVIN POTTER STRAUS**, Professor of Political Science, 1961  
B.S., M.A., Ph.D., University of Illinois at Urbana-Champaign
- FREDERICK BODO STRAUSS**, Associate Professor of Mathematics, 1968  
B.A., M.A., Ph.D., The University of California at Los Angeles
- REX WALLACE STRICKLAND**, Professor Emeritus of History, 1936  
B.A., D.Litt., Austin College; M.A., Southern Methodist University; Ph.D., The University of Texas at Austin
- CHARLES J. STUART**, Assistant Professor of Geological Sciences, 1977  
B.S., San Diego State University; M.S., University of Montana; Ph.D., University of California at Santa Barbara



- ROBERT LEWIS TAPPAN**, Associate Professor of Modern Languages, 1954  
B.A., M.A., The University of Texas at El Paso; Ph.D., Tulane University
- ANTHONY JOSEPH TARQUIN**, Associate Professor of Civil Engineering, 1969  
B.S.I.E., M.S.E., Ph.D., University of West Virginia
- LARRY GLENN TAYLOR**, Adjunct Assistant Professor of Religion, 1975  
B.S., Sam Houston State University; B.D., Southwestern Baptist Theological Seminary
- WALTER FULLER TAYLOR, JR.**, Professor of English, 1968  
B.A., University of Mississippi; Ph.D., Emory University
- RICHARD VINCENT TESCHNER**, Assistant Professor of Modern Languages, 1976  
A.B., Stanford University; M.A., Middlebury College; Ph.D., University of Wisconsin
- RACHELLE RENE THIEWES**, Assistant Professor in Art, 1976  
B.A., Southern Illinois University; M.F.A., Kent State University
- ENGBRET A. THORMODSGAARD**, Professor Emeritus of Music, 1949  
B.A., Concordia College; M.A., Ed.D., Teachers College, Columbia University
- WILBERT HELDE TIMMONS**, Professor Emeritus of History, 1949  
B.A., Park College; M.A., University of Chicago; Ph.D., The University of Texas at Austin
- ROBERT DOLF TOLLEN**, Associate Professor of Economics and Finance, 1972  
B.A., M.A., West Texas State University; Ph.D., The University of Texas at Austin
- KEN TOMIYAMA**, Assistant Professor in the Department of Electrical Engineering, 1978  
B. Engr., Tokyo Institute of Technology; M.S., Ph.D., University of California at Los Angeles
- GEORGE CAMBRIDGE TOMPKINS**, Assistant Professor of Management, 1958  
B.S., M.S., University of Illinois
- JAMES HENRY TUCKER**, Assistant Professor of Drama and Speech, 1957  
B.S., University of Alabama; M.F.A., The University of Texas at Austin
- LESLIE ULLMAN**, Associate Professor of English, 1979  
B.A., Skidmore College; M.F.A., University of Iowa
- COYD M. VANCE**, Assistant Professor of Military Science, 1980  
B.S., East Tennessee State University; M.A., Pepperdine University; Captain, U.S. Army
- ROBERTO ESCAMILLA VILLARREAL**, Assistant Professor of Political Science, 1976  
B.S., M.S., Texas A&I University; M.A., Ph.D., University of Oklahoma
- HILMAR ERNEST WAGNER**, Professor of Curriculum and Instruction, 1966  
B.S., Texas Tech University; M.A., Sul Ross State University; Ed.D., North Texas State University
- CARL WALKER**, Professor of Educational Psychology and Guidance, 1965  
B.A., M.A., University of Missouri at Columbia; Ed.D., University of New Mexico
- CARLENE ANTHONY WALKER**, Assistant Professor of English, 1969  
A.B., Northwestern State College; M.A., University of New Mexico
- JIMMY REEVES WALKER**, Associate Professor of Educational Psychology and Guidance, 1958  
B.A., M.A., The University of Texas at El Paso; Ed.D., Oklahoma State University
- ROBERTA WALKER**, Assistant Professor of English, 1964  
B.A., M.A., The University of Texas at El Paso
- ROBERT C. WALSKÉ**, Instructor of Music, 1980  
B.M., University of Texas at El Paso; M.M., Indiana University
- SARAH BEAL WATLEY**, Assistant Professor of Sociology, 1972  
B.A., M.A., Texas Tech University; Ph.D., The University of Nebraska
- ROBERT GRAVEM WEBB**, Professor of Biological Sciences, 1962  
B.S., M.S., University of Oklahoma; Ph.D., University of Kansas
- ROBERT H. WEBKING**, Assistant Professor of Political Science, 1978  
B.A., University of Dallas; M.A., Ph.D., University of Virginia
- MARLENE H. WEITZEL, R.N.**, Associate Professor of Nursing, 1978  
B.S.N., Duchesne College; M.S.N., Catholic University of America; Ph.D., The University of Texas at Austin
- JOHN OLIVER WEST**, Professor of English, 1963  
B.A., Mississippi College; M.A., Texas Tech University; Ph.D., The University of Texas at Austin
- ROBERT L. WESTHOLM, JR.**, Assistant Professor of Military Science, 1980  
B.A., Texas A&M University; Captain, U.S. Army
- JAMES WILLIAM WHALEN**, Professor of Chemistry, 1968  
A.B., M.S., Ph.D., University of Oklahoma
- MARY JANE WHISTLER**, Assistant Professor of Business, 1980  
B.A., M.S., Ph.D., University of Oklahoma
- JOHN AUBREY WHITACRE, JR.**, Professor of Mechanical Engineering, 1959  
B.S., M.S., Texas A&M University
- DOROTHY JEAN WHITE**, Assistant Professor of English, 1965  
B.A., University of Chicago; M.A., University of Missouri at Kansas City
- WILLIS K. WHICHARD, JR.**, Professor of Aerospace Studies, 1978  
B.S., North Carolina State University; M.S., University of Missouri; Lt. Col., U.S. Air Force
- RANDOLPH HOWARD WHITWORTH**, Associate Professor of Psychology, 1960  
B.S. Ph.D., The University of Texas at Austin
- DAVID ROBERT WICKS**, Instructor in Music, 1977  
B.M., M.A., University of Iowa
- DAVID C. WIETERS**, Associate Professor of Business, 1979  
B.M.E., Cornell University; M.B.A., University of Rochester; D.B.A., Arizona State University
- SISTER ALOYSIUS WILLIAMS, R.N.**, Assistant Professor of Nursing, 1970  
B.S., Marion College; B.S.N.E., Louisiana State University; M.S.N. Adm., Catholic University
- DAVID H. WILLIAMS**, Assistant Professor in the Department of Electrical Engineering, 1978  
B.S.E.E., New Mexico State University; M.S., University of New Mexico; Ph.D., The University of Texas at Austin
- FRANK WILLIAMS**, Adjunct Assistant Professor of Religion, 1976  
A.B., Harvard University; B.D., S.T.M., Nashotah House; B.H.L., Hebrew Union College; D.Phil., Oxford University
- JOHN SIMEON WILLIAMS**, Professor Emeritus of Biological Sciences, 1961  
B.S., A&M College of Texas; M.A., University of Missouri-Columbia; Ph.D., University of Nebraska-Lincoln
- GIFFORD WENDEL WINGATE**, Professor of Drama and Speech, 1964  
B.A., M.A., New York State College for Teachers; Ph.D., Cornell University
- WILMA HUDNALL WIRT**, Assistant Professor of Mass Communications, 1973  
B.A., Oklahoma State University; M.A., The University of Texas at Austin
- JAMES ALLEN WOOD**, Associate Professor of Drama and Speech, 1966  
B.A., Willamette University; Ph.D., Cornell University
- LISA WOODUL**, Instructor in Music, 1976  
B.M., M.M., Louisiana State University
- RICHARD DANE WORTHINGTON**, Associate Professor of Biological Sciences, 1969  
B.A., The University of Texas at Austin; M.S., Ph.D., University of Maryland
- GLORIA A. YOUNG**, Assistant Professor of Sociology, 1979  
B.A., Trinity University; M.A., Ph.D., The University of Texas at Austin

PHILIP WAYNE YOUNG, Associate Professor of Civil Engineering, 1957  
B.S.C.E., The University of Texas at El Paso; M.E.S.E., Texas A&M University

JAMES E. ZAJIC, Professor of Biological Sciences, 1980  
B.A., University of Kansas; M.S., University of Wisconsin; J.D., Oklahoma City University; Ph.D., University of California

NATHAN ZIRL, Assistant Professor in Sociology, 1972  
B.A., Long Island University; M.S.W., New York School of Social Work at Columbia University

PAUL DAVID ZOOK, Professor Emeritus of Economics, 1970  
B.A., Goshen College; M.A., Ph.D., University of Illinois

## LIBRARY ADMINISTRATION

HELEN CARMEN BELL, Head, Reference Department, 1972  
B.S.F.S., Georgetown University; M.L.S., George Peabody College

CESAR CABALLERO, Head, Department of Special Collections, 1974  
B.B.S., The University of Texas at El Paso; M.L.S., The University of Texas at Austin

WILLIAM COY CAINE, Cataloger, 1980  
B.A., Lamar University; M.L.S., The University of Texas at Austin

DEE BIRCH CAMERON, Assistant Reference Librarian, 1972  
B.A., M.L.S., University of Pittsburgh; M.A., George Washington University

JAMES ALBERT CROUCH, JR., Head, Circulation Department, 1980  
B.A., M.L.S., University of North Carolina at Chapel Hill

YVONNE ETNYRE GREEAR, Assistant Director for Public Services, 1964  
B.F.A., M.L.S., The University of Texas at Austin

KENNETH WESLEY HEDMAN, Associate Director of Libraries, 1979  
B.S. in Education, M.A., The University of Texas at El Paso; M.L.S., University of Washington

MARY WALLACE KECKLEY, Head, Serials Department, 1974  
B.S., Northern State College; M.S.L.S., University of Kentucky

BRENDA D. McDONALD, Acting Head, Documents and Maps Library, 1979  
B.A., William Jewell College; M.L.S., University of Oklahoma

ESPERANZA ACOSTA MORENO, Head, Nursing/Medical Library, 1964  
B.A., University of Texas at El Paso; M.S.L.S., University of Illinois

FLETCHER CAMPBELL NEWMAN, Head, Science, Engineering and Mathematics Library, 1969  
B.A., The University of Texas at El Paso; M.L.S., Immaculate Heart College

PHIL RAUE, Cataloger, 1973  
B.A., State University of New York at New Paltz; M.L.S., State University of New York at Albany

GAIL ANN SCHULTIS, Reference/Interlibrary Loan Librarian, 1979  
B.A., Cornell College; M.A.L.S., University of Missouri-Columbia

ICLE JEAN STEVENS, Head, Education Library, 1966  
B.A., University of Nebraska; M.A.L.S., University of Denver

LOUISE MARCIA TENNER, Acquisitions Assistant, 1979  
B.A., The University of Texas at Austin; M.L.S., Texas Woman's University

DIANA TWELVES, Assistant Head, Reference Department, 1977  
B.S., University of Utah; M.S.L.S., Atlanta University

EDWARD EARL WEIR, Head, Administrative Services, 1963

JACQUELINE WILLINGHAM, Assistant Head, Catalog Department, 1959  
B.A., The University of Texas at El Paso; M.L.S., Texas Woman's University

## OTHER ADMINISTRATIVE OFFICERS

FRANK ARANDA, Director, Student Programs, 1970  
B.A., The University of Texas at El Paso

RICARDO V. ARANDA, Director of Financial Aid, 1976  
B.B.A., The University of Texas at El Paso; M.B.A., Sul Ross State University

JACK A. BAKER, JR., Director, Auxiliary Services, 1969  
B.S., Oklahoma State University

WILLARD GENE BOOKS, Director, Student Publications, 1979  
B.A., Adrian College

ROBERT WRIGHT BOOTON, Associate Director of the Computer Center, 1969  
B.S., The University of Texas at Austin

GORI P. BRUNO, Director, International Student Services, 1978  
B.S., College of the City of New York

FRED BUEHLER, Director, Intramurals and Recreational Services, 1977  
B.A., University of California, Davis; M.S., California State University, Los Angeles

REYNALDO CADENA, Director, University Bookstore, 1973

BRIANE K. CARTER, Director, Placement Services, 1980  
B.A., West Virginia Institute of Technology; M.S., Marshall University

JESUS R. CASTRO, Director, Union Services, 1977  
B.A., The University of Texas at El Paso

THOMAS MILLER CHISM, Director of Special Academic Services, 1966  
B.A., Carson Newman College; B.D., Southwestern Baptist Theological Seminary; M.A., Phillips University

RALPH COULTER, Chief, University Police, 1972

JAMES MILTON DAY, Director of Centennial Museum, 1967  
B.A., M.A., The University of Texas at Austin; Ph.D., Baylor University

DAVID LEE FREI, Associate Director of Intercollegiate Athletics, 1981  
B.A., Oregon State University

SHELLY GERARD, Assistant Director of Intercollegiate Athletics, 1981  
B.S., Brooklyn College

DIANA GUERRERO, Associate Director of Admissions, 1969  
B.S., B.A., M.Ed., The University of Texas at El Paso

KAREN HALL, Director, Housing Services, 1981  
B.A., The University of Texas at Arlington; M.Ed., Texas Christian University

ARTHUR HUGHES, Director of Computer Center, 1979  
B.A., San Diego State College

DONALD M. IRVIN, Director of Personnel, 1978  
B.A., University of the South

ARTURO LAZARIN, Project Director of High School Equivalency Program, 1976  
B.S., University of Texas at El Paso

LUIS R. LUJAN, Assistant Director of Development, 1981  
B.A., University of Texas at El Paso

JUAN ROBERTO OAXACA, Students' Attorney, 1979  
B.A., M.B.A., The University of Texas at El Paso; J.D., The University of Texas at Austin

WILLIAM R. OBENOUR, Associate Director of Physical Plant, 1975  
B.S., Park College of Aeronautical Technology

JAMES COLEMAN PARKER, Director, The Center for Continuing Education, 1972  
B.S., University of Alabama; M.Ed., University of Virginia

## OTHER ADMINISTRATIVE OFFICERS / 197

**DONALD L. PAULSON, JR.**, Director, University Counseling Service, 1972  
B.A., Hamline University; M.S.Ed., Indiana University; Ph.D., University of Iowa

**BARBARA G. PRATER**, Director of Institutional Studies, 1973  
B.A., University of Kansas; Ph.D., The University of Texas at Austin

**A.K. RAHMAN**, Food Services Director, 1975  
B.S., Oklahoma State University

**JOY MORGAN RILEY**, Executive Assistant to the President, 1964

**STEVE ROBERT ROSENFELD**, Manager of Special Facilities, 1969  
B.B.A., The University of Texas at El Paso

**SANDRA SAWYER**, Equal Opportunity Employment Officer, 1981  
B.A., University of Texas at Austin; M.A., New Mexico State University

**A. EDWARD SWARTZ**, Director of Intercollegiate Athletics, 1981  
B.A., University of Northern Iowa; M.E., California Polytechnic State University

**JUDITH ENGLISH SOLIS**, Assistant Dean of Students, 1973  
B.S., Kansas State University; M.Ed., University of Texas at El Paso; Ed.D., New Mexico State University

**WILLIAM NEIL TIDWELL**, Director of Fiscal Services, 1964  
B.B.A., The University of Texas at El Paso

**MARY MARGARET WEISSINGER, R.N.**, Certified Nurse Practitioner, Director of Health Services, 1980  
B.S.N., Incarnate Word College

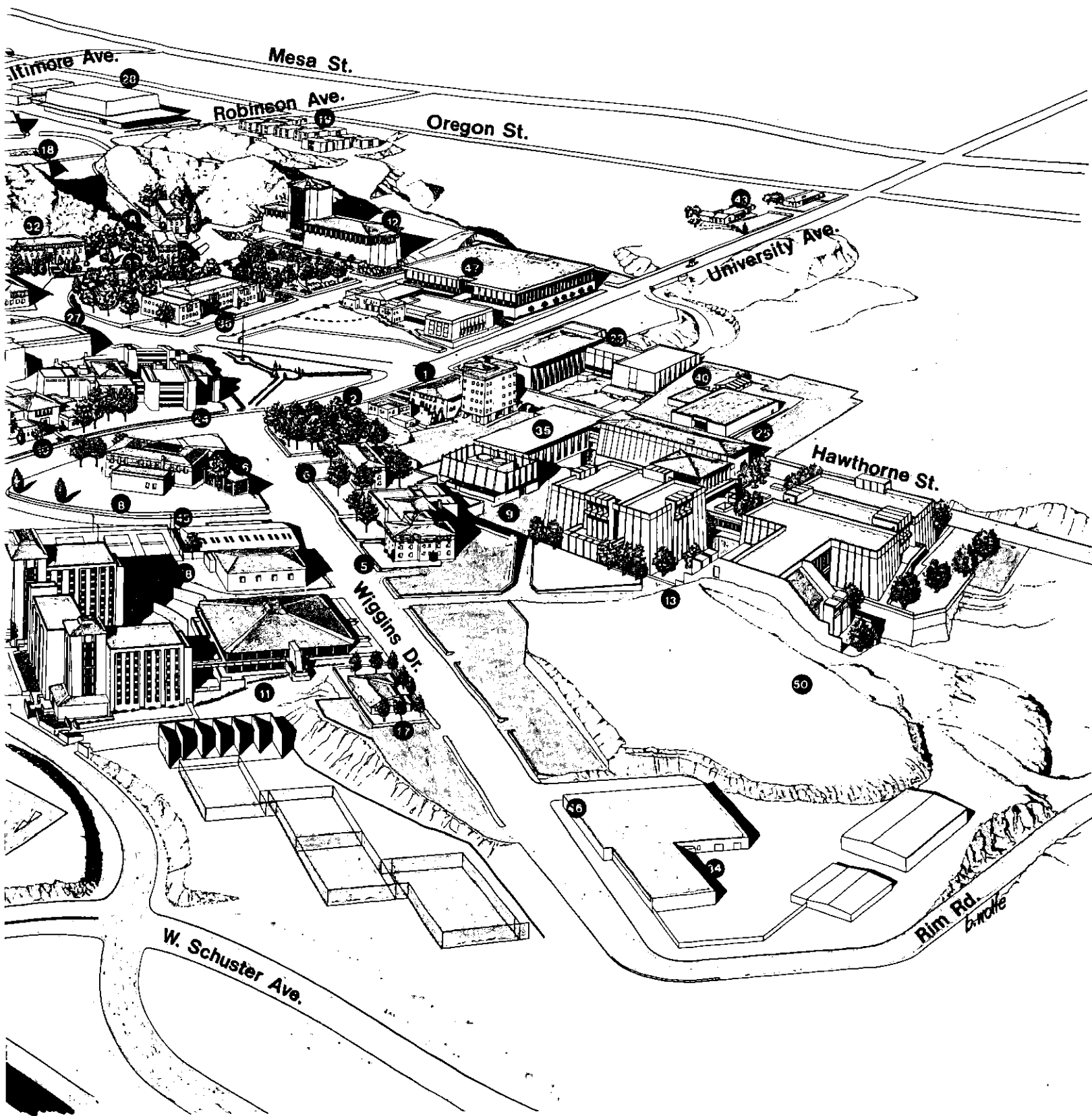
**NANCY WOOD**, Director of Study Skills and Tutorial Services, 1968  
B.A., University of Oregon; M.A., Cornell University; Ph.D., Rutgers University

# Campus Map

1. Administration Bldg.
2. Administration Annex
3. Athletics Offices
4. Barry Hall (Dormitory)
5. Bell Hall
6. Benedict Hall
7. Burges Hall (Dormitory)
8. Centennial Museum
9. Central Energy Plant
10. Cotton Memorial Bldg.
11. Dining, University Commons
12. Education Bldg.
13. Engineering-Science Ctr.
14. Fox Fine Arts Center
15. Geology Bldg.
16. Graham Hall
17. Health Service
18. Holliday Hall
19. Housing, Student Family
20. Hudspeth Hall
21. Kelly Hall (Dormitory)
22. Kidd Field
23. Liberal Arts Bldg.
24. Library
25. Library Annex
26. Locomotive Shelter  
(Old Engine #1)
27. Magoffin Auditorium
28. Memorial Gym
29. Miners Hall
  
- Nursing and Allied Health, College of
31. Quinn Hall
32. Old Main
33. Old Kelly Hall
34. Physical Plant
35. Physical Science Bldg.
36. Psychology Bldg.
37. ROTC Quonset Hut
38. Seamon Hall
39. Seismic Lab
40. Solar House
41. Special Events Ctr.
42. Special Projects Ctr.
43. Speech & Hearing Ctr.
44. Sun Bowl Stadium
45. Swimming Pool
46. Texas Western Press
47. Union Bldg.
48. Women's Gym
49. Worrell Hall
50. Business Administration
51. Military Science Bldg.



\*The College of Nursing and Allied Health is Located at 1101 N. Campbell St., corner of Campbell and Arizona Sts.



W. Schuster Ave.

Mesa St.

Robinson Ave.

Oregon St.

University Ave.

Hawthorne St.

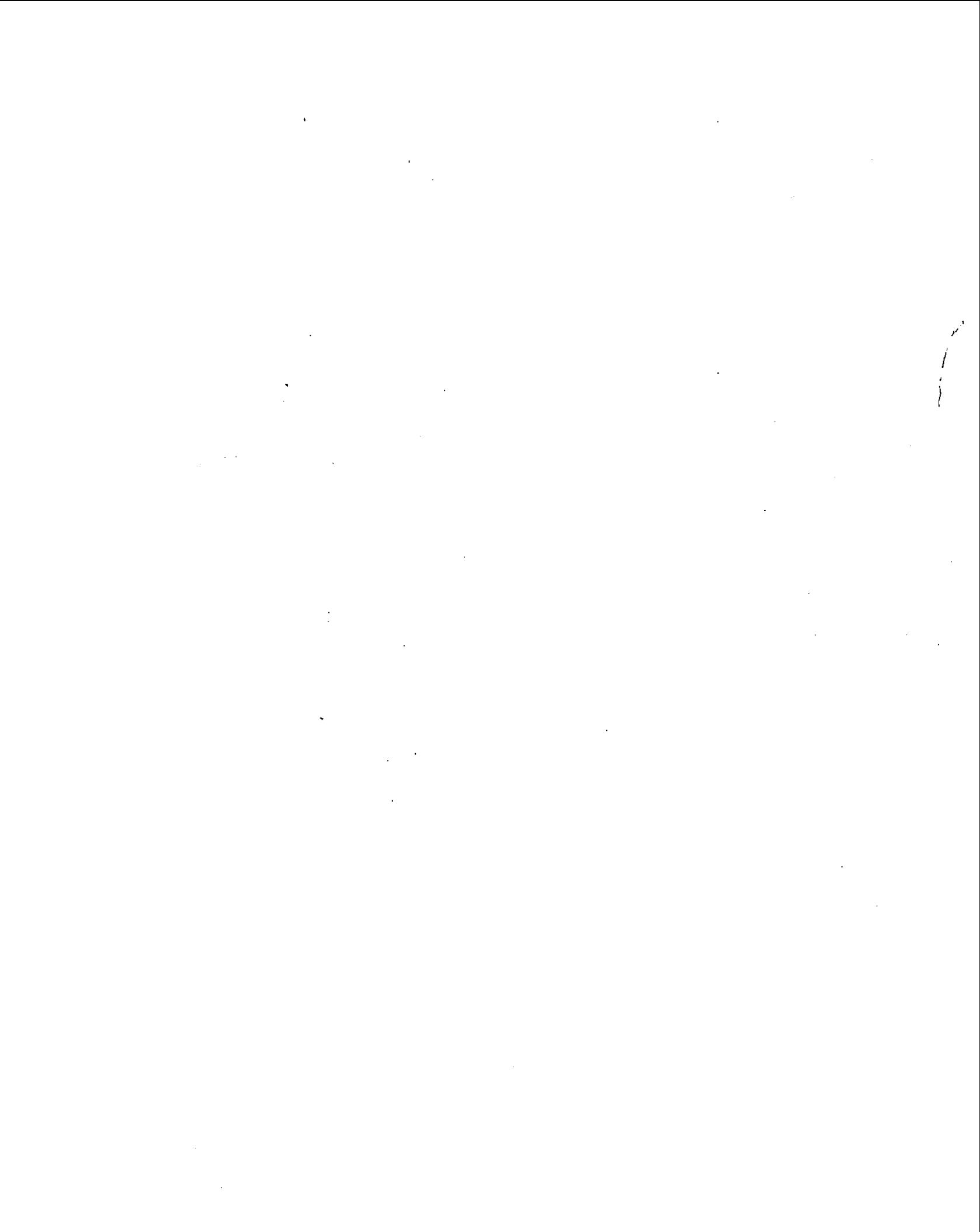
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**Directory for further information and correspondence:**

The mailing address for correspondence to all offices:

The University of Texas at El Paso  
(Department)  
El Paso, Texas 79968

Locations 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 Admissions and Evaluation 209 Administration Building (915) 747-5576
Admission, Graduate	Graduate School 901 Education Building (915) 747-5491
Counseling and Guidance	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 Special Academic Services 203 Administration Building (915) 747-5890
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